THE EFFECT OF KEYWORD STRATEGY ON LEXICO-SEMANTIC LEARNING, COMPREHENSION AND RETENTION AMONG ENGLISH AS SECOND LANGUAGE UNDERGRADUATESTUDENTS IN FEDERAL COLLEGE OF EDUCATION KANO

BY

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FEBRUARY, 2020

DEDICATION

This thesis is dedicated to my late parents, as well as my family, lecturers and students. Certainly, to ALLAH be the glory.

DECLARATION

I hereby declare that this thesis is written by me and that it is a record of my own research work. It hasnot been submitted toany institution for the same purpose or submittedinany previous application for a higher degree. All quotations are indicated and all sources of information are adequately acknowledged by means of reference.

FATIMA MUHAMMAD SHITU …….

Signature & date

CERTIFICATION

This thesis entitled ‘’*The Effect of Keyword Strategy on Lexico-Semantic Learning, Comprehension and Retention among English as Second Language Undergraduate Students in Federal College of Education, Kano’’*byFatima Muhammad Shitu meets the regulation governing the award of Doctor of Philosophy in English Language of Ahmadu Bello University, Zaria and is approved for its contribution to knowledge and language study

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ABSTRACT

Vocabulary development is significant for mastering a second and a foreign language. Several strategies for enhancing vocabulary development including Keyword Strategy have been investigated. The Keyword Strategy for vocabulary learning /acquisition uses sound, visual, or imagery-inducing keyword associations (pictures, cue words, and imagery) to facilitate remembering or memory. It is a two-way procedure that facilitates word learning, retention and recall through association. Studies of the effects of Keyword Strategy on vocabulary development in mostly first and foreign language contexts have yielded a variety of positive results. The present study investigated the effect of Keyword Strategy on lexico-semantic learning, comprehension and retention among undergraduate learners in a second language context. The samples consisted of three hundred second year undergraduate ESL learners in the Department of English, Federal College of Education Kano which is a degree-awarding institution affiliated to Ahmadu Bello University, Zaria. The 2015/2016 academic year undergraduates were selected using purposive sampling and were divided into six groups consisting of fifty students each using random raffle draw. The data was collected using the survey and the test techniques. The survey provided information about awareness and frequency of use of lexical strategies, while the test assessed knowledge of lexical items. Using a pre-test and post-test design, the subjects' abilities in learning, comprehension and retention of Medicine, Agriculture and Photography (MAP) lexical items was assessed using the Word, Learning, Recognition and Retention Test (WLRRT) and Cloze Comprehension Passage Test (CCPT). The data collected from the survey and the test were analysed using the simple percentages and mean statistics.

The findings indicated that the Keyword Strategy was significantly effective in enhancing the undergraduate subjects' learning, comprehension and retention of the MAP lexical items studied. This was evident in thehigher number of scores and higher number of correct responses obtained at the post-test. The result of the survey revealed that the undergraduate ESL subjects were not only aware of lexical strategies but also frequently used the determination and memory strategies. Finally, the result revealed that the differences between male and female were inconclusive. The results of the present study corroborated findings and conclusions from similar studies in the literature.

CHAPTER ONE

INTRODUCTION

1.1.Background to the Study

Vocabulary development is one of the most important aspects of Second and Foreign language learning and teaching (Hunt & Beglar, 2005; Knight, 1994). In second language, learning/ acquisition of words is the basis for communication and they constitute an essential part of mastering the language, (Schmitt, 2008: 329).

On the importance of words in language learning, Wilkins, (1972) (as cited in Milton, 2009:111) notes that "without grammar very little can be conveyed, without vocabulary, nothing can be conveyed.'' Zhang-Xiang, (2004) metaphorically describes words as the building block of language. Paivio, (1986) asserts that vocabulary acquisition and learning is an important end in itself, even more significant and complicated than is, by and large, perceived by teachers of foreign languages. Furthermore, it is also considered as the heart of language learning and language use (Laufer, 1997). Schmitt, (2008:329) also believes that vocabulary is an essential part in language mastery, while Knight (1994) similarly agrees that word acquisition is the most crucial aspect of second language acquisition." Laufer, (1997:20) also asserts that "no text comprehension is possible, either in one's native language or in a foreign language without understanding the text's vocabulary." It is evident that developing a rich vocabulary is both a priority as well as a challenge for second language learners.

The lack of vocabulary knowledge among Second language learners is a linguistic constraint (Rassaei, 2017; Yusuf, Sim, & Su'ad, 2014) and constitutes a major obstacle to success in comprehension of reading texts/materials. Thus, when faced with an intensive or extensive

reading texts/materials especially one that has too many new words, the learners are quickly and easily discouraged (Grabe & Stoller, 1997) and, sometimes, often abandon the reading materials. Moreover, one of the many frustrations of Second language learners is often their inability to recall the vocabulary items they have memorized. Both English as second language (ESL) learners and/or English as Second Language teachers are familiar with the disconcerting experience of trying to recall, without success, a word which has only been recently encountered and used, or a word, which has been in their vocabulary for a long time, but seems to elude them when it is needed. Waring, (2002)confirms that one of the most important problem with vocabulary learning which the second language learners are faced with is that what they learn today is easily forgotten.

In order to deal with these challenges, Second language (L2) learners need multiple exposure to L2 vocabulary in various contexts through a variety of vocabulary learning strategies (Nation, 2011; Schmitt, 2008). These vocabulary strategies can assist second language (L2) learners to cope with unfamiliar words (Harley, 1995), recall them promptly over long term, and apply the acquired/learnt words in communicative contexts correctly (Nagy, 2005; Read, 2004; Thornbury, 2002).

Traditional strategies/approachesto vocabulary learning and teaching have include the use of non-memory strategies such word-lists, dictionary use, context clues, root word analysis, vocabulary cards, and negotiating vocabulary meanings (Hunt & Beglar, 2005; Hulstijn, Hollander & Greidanus,1996), and glosses “a brief definition or synonym, either in L1 or L2, which is provided with the text” (Nation, 2013:238).

These non-memory strategies have their own limitations. For example, the dictionary, as a vocabulary learning strategy, is the easiest way to acquire /learn vocabulary items. The problem

with the dictionary as a strategy is that it lowers the learners reading speed and may confuse them with several meanings (Luppescu& Day, 1993); thus, sometimes leading the learners to wrong inferences or guesses (Hulstijn, 1992). However, there are a large number of memory-based strategies that have been discovered to facilitate vocabulary learning. Many of these strategies have helped language learners to learn and retain new words.

There is, therefore, a need to examine other strategies that are effective and practical in encouraging Second language learners to process and internalize the meaning of words on the one hand, and, on the other hand, to effectively enhance their short and long term retention and recall through conscious efforts on the part of the learner (Al Seghayer, 2003), deep processing (Bahrick, 1984) and explicit instruction (Atay&Ozbulgan, 2007)

The Keyword Strategy is an example of a strategy that can be used to effectively enhance vocabulary learning. It can be used as a substitute for the more traditional strategies for vocabulary learning such as the dictionary, word lists, context clues and others.

The Keyword Strategy for learning and acquisition of lexical items uses sound, visual, or imagery inducing Keyword associations (pictures, cue words, and imagery) to facilitate remembering or memory (Mastropieri& Scruggs, 1997). It is a two way procedure that facilitates word learning, retention and recall through associative component (Pressley, Levin and Delany, 1982). By associative component, it is meant that the Keyword Strategy enables sound (acoustics) or image (visual or mental) linkage between a new target Second language (L2) word and its equivalent keyword association.

The Keyword Strategyappeals to imagination; the more the imagination the more useful the strategy. This explains the reason why in using the strategy, learners create unusual association between words especially since the associations can be made between first language (L1) and a

new Second language (L2) word, or between a new L2 and already known L2 words (Nation,1990). It enhances recall and retention of lexical items. The Keyword Strategy provides the learners with more conscious and explicit learning mechanisms to improve lexical knowledge.

The effect of the Keyword Strategy have been welldocumented and supported by ample of research studies such as Wyra, Lawson, and Hongi (2007), Shapiro & Waters (2005) Rodriguez & Sadoski, (2000), Pressley, Levin, & Delany, (1982) and others. It has been described as one of the best and most effective strategies in improving both immediate and delayed retention of second language words (Atkinson 1975 in Mastropieri&Scruggs, 1997). Mnemonics is one of the most efficient strategies to assist learners to remember new vocabulary. Higbee and Kunihara (1985) in Rodriguez & Sadoski, (2000) point out that students mainly acquire new words by associating them with memorable thingssuch as words, pictures andobjects.

It is the concern of the present study to investigatethe use of Keyword Strategy by undergraduate ESL learners in FCE Kano so as to determine its effectsin enhancinglearning, comprehension and retention.

1.2. Statement of the Research Problem

Researchers in vocabulary learning in Second language learning seek to know how vocabulary is learnt/acquired by learners, the processes of learning /acquisition of words, lexical phrases and lexicalized chunks, multi words and collocations (Lewis, 2010; Nattinger & DeCarrico, 1992; Arnaud & Savignon, 1997; Bahns & Eldaw1993; McCarthy, 1984; 1990; and Nation, 1990; 2001).

In addition, some have investigated the role of instruction in vocabulary acquisition, learning, comprehension and retention (Alain, 2014; Nelson, et al., 2011; Dockrell, 2010; Uchikoshi, 2006; Nation, 2001; Read, 2000; Schmitt, 2000). Despite that these studies have contributed significantly to enhancing our knowledge of vocabulary development and learning processes, yet the findings are inconclusive, and insufficient and controversial especially since the studies sampled English as Native Language (ENL) and English as Foreign Language learners.

Studies have also been conducted to examine the roles of vocabulary learning strategy types with the aim of determining their effects vocabulary acquisition, learning, retention and comprehension.For example, several studies, that have been conducted on the impact of multimedia/electronic glossing on English as Foreign Language (FL) and English as Second Language (L2) vocabulary learning seek to know how the different types of media facilitate FL/L2 learners' acquisition/learning of new vocabulary and word retention (Akbulut, 2007; Al-Ghafli, 2011; Al-Seghayer, 2001; Chun & Plass, 1996a, 1996b; De Ridder, 2002; Lyman-Hager & Davis, 1996; Tabatabaei & Shams, 2011; Türk & Erçetin, 2014; Yanguas, 2009; Yoshii & Flaitz, 2002; Yun, 2011), and word retention (Salem & Aust, 2007; Salem, 2006; Kost, Foss & Lenzini, 1999; Zandieh & Jafarigouhar, 2012).

The findings from these studies are inconclusive, insufficient, and merely provide controversial evidence as to what gloss combination is more effective in facilitating vocabulary learning and enhancing long-term word recall. For example, Chun and Plass (1996a) and Plass, Chun, Mayer, and Leutner (1998) found that visual glossing of text and picture was more effective than visual glossing of text and video for L2 vocabulary learning, whereas Al-Seghayer (2001) and Lin and Tseng (2012) showed that integrating text and video led to better vocabulary learning and retention compared to their integration with text and picture. The findings of Akbulut (2007)

revealed an equal and positive effectiveness or "zero effectiveness" (Mohsen & Balakumar, 2011 : 151) for the two modalities of text and pictures and text and videos in facilitating vocabulary learning and word retention compared to text definition alone due to some factors such as learners' cultural and linguistic backgrounds, differences in their target language and proficiency level, as well as level of word difficulty and assessment types (Mohsen & Balakumar, 2011).

Based on these studies, very little is known about the impact of glossing in combination with texts, audios, and videos/animations on L2 vocabulary comprehension. Even though the present study is not on multimedia glossing, yet the treatment of effect on multimedia glossing on comprehension will provide an insight into L2 vocabulary comprehension. Thus, further research is required to examine the role of strategy types on L2 vocabulary comprehension. The present study examines the effect of Keyword Strategy on learning, comprehension and retention.

Researches have also been conducted on the Keyword Strategy in a bid to discover its effect on vocabulary learning and retention. The Keyword Strategy has been widely researched in isolation or in combinations with other strategy types such as contextual, definitional, multimedia glossing and dictionary in mostly ENL and EFL context (Ramezanali, 2003; Chen, 2008; Min, 2008; Mohammed, 2009; Baleghizadeh, and Ashoori, 2010; Ashoori, 2012; Saeedi and Mohajerian, 2012; Marzban and Amoli, 2012; Zarei, Hasani & Keysan, 2013; Win, 2012; Abdal Rahim, 2015) and others. The Keyword Strategy studies have contributed immensely to our understanding of role of strategies in vocabulary learning, comprehension and retention. These and many other studies have confirmed the claim that Keyword Strategy is more effective than other strategies in facilitating second language vocabulary learning, acquisition and retention.

It is evident that much has been written and known about the effects of the Keyword Strategy on vocabulary learning in English as a Native Language (ENL) and English as a foreign language (EFL) contexts. However, not much have been done on the effect of Keyword Strategy on vocabulary learning in Second Language (ESL) context. Given the importance of L2 vocabulary in Second language development, the use of the Keyword Strategy for learning and long-term word retention has not been extensively given the focus it needs in the context of the studies cited above. Therefore, this is the gap in the literature which the present study seeks to fill. The researcher believes that investigating the effect of Keyword Strategy from a Second language context would provide new insights which may further advance our knowledge of the processes of L2 vocabulary development. The present study is not a replication of previous studies rather it seeksto utilize existing theories and principles to investigate and explain the effect of the use of Keyword StrategyonSecond language (L2) learning. The study is situated in English as a Second Language context and seeks to highlight the effect of ESL learners' use of Keyword Strategy on vocabulary learning and development.

A large number of studies have investigated vocabulary development from lexico-semantics perspective (Abel, Adetuyi and Adetuyi, 2016; Chimuanya and Awonuga, 2015; Okongor, 2015; Ehineni, 2014; Obwoge, 2014; Okunrinmeta, 2014; Robert and Ukpongetuk, 2014) and numerous others.Majority of these studies are descriptive and analytic, with most of their theoretical framework hingingonlexicalsemantics, systemic, sociolinguistics, stylistics and linguistics theories.

The present study also seeks to fill the gap by investigating lexico-semantics, however, from a different perspective,focusand approach.The study is carried out from a Second language

learning perspective. The focus is on ‘’what and how’’ processes learners consciously use in their efforts to internalize and build up their vocabulary.

The study of the effect of Keyword Strategyin Second language learningcontext using undergraduate learners from FCE Kano is embarked upon because to the best of the researcher’s knowledge, there is a gap in knowledge which this study needs to fill. It is hoped that the study of the effect of Keyword Strategy on lexico-semantic learning, comprehension and retention in ESL context will serve as a catalyst for more studies in this direction.

1.3.Research Questions

To guide the study, five research questions were designed as follows:

Research Question 1:

What types of lexical learning strategies do undergraduate ESL learners of FCE Kano know and which do they frequently use?

Research Question 2

What is the difference in the performance of students on tests of Word Learning, Retention and Recall Test (WLRRT) and Cloze Comprehension Passage Test (CCPT) before and after the experiment?

Research Question 3

Which is the lexical field item with the highest score before and after the experiment and ‘within’ and ‘between’ groups?

Research Question 4

What is the percentage number of correct responses obtained on each of the lexical items tested in each of the MAP lexical fields?

Research Question 5

What is the difference in the scores obtained on WLRRT and CCPT of MAP between males and females in the study group?

1.4. Aim and Objectives of the Study

The aim of the study is to investigate the Keyword Strategy and its effect on lexico-semantic learning, comprehension and retention of MAP lexical items in a Second language context using undergraduate ESL students in FCE Kano

The objectives of the study include, to:

1. Examine the awareness and frequency of use of lexical learning strategies among undergraduate students in FCE Kano.
2. Identify the difference in performance between groups on test of learning, comprehension and retention of lexical items before and after the experiment.
3. Identify and describe the MAP lexical field item with the highest scores before and after the experiment and 'within' and 'between' groups.
4. Identify the number and percentages of correct responses obtained by the students on each lexical item tested in each lexical field
5. Identify the difference in performanceon test of learning, retention and comprehension of MAP lexical items between male and female subjects in the study group.

1.5. Significance of the Study

This study is significant to English as Second Language learners (ESL), English as Second Language teachers, English as Second Language researchers, English as Second language

planners; as a useful resource material for improving lexical and vocabulary acquisition, learning, and pedagogy.

To the English as Second Language learners, the study provides ‘new’ or ‘alternative’ approach to fall back on in their attempts to enhance lexical and semantic learning and acquisition.

English as Second Language plannerswill also benefit from this study to make curricular decisions regarding the inclusion and recommendation for the use of Keyword Strategy instruction in Second language learning to the benefit of all ESL learners in this context. Findings of the study will direct the attention of ESL Language curriculum planners to integrate Keyword Strategy in their designs.

Finally, this study is significant to linguistics - the study of language and its applications.This is in the sense that the outcomes of this study can significantly improve language education which is a sub-branch of Linguistics.

1.6. Scope and Delimitation of the Study

The study is centred on Second Language learning with a specific focus on Lexico-Semanticlearning in an English as Second Language (ESL) context, which implies that the subjects of the study are ESLlearners. The major focus is investigating the effect of learning strategy on vocabulary learning and in this case, it is the effect of the Keyword Mnemonic Strategy that is being investigated. The study is concerned with how students make conscious and explicit attempts to learn or accumulate lexical items through the use of Keyword Strategy.

Specifically,it investigates how the Keyword Strategy facilitates learning, comprehension and retention of lexical itemof Medicine, Agriculture and Photography known as MAP. Hence, the

more general or day to day lexical items of English are excluded from this study. The study is delimited to undergraduate ESL students of English at the advanced level in Federal College of Education (FCE) Kano duringthe 2015/2016 academic year.FCE Kanowas chosen because it is my employment place. The undergraduate studentswere in my class during the period of the study. In addition, they constitute a representative sample of the wider Nigeria language groups.The scope of analysis covers the analysis of data from survey and tests using summative qualitative analysis.Theresponses to the survey questions by the undergraduate ESL students andthe scores obtained on the tests (WLRRT and CCPT) were counted and collated using simple percentages and mean statistics.

1.7. Acronyms

The following are the acronyms used in this study as follows:

1. Cloze Comprehension Passage Test (CCPT)

The cloze test is a multifunctional and integrative strategy which can be used to test language comprehension as well as for reading diagnosis, (Chatel, 2001:3). In this study, the term cloze test refers to all the passages used to test the comprehension of MAP lexical items (i.e., CCPT) in discourse context.The close test is designed in such a way that some MAP lexical items in the text have been deleted. The students are required to fill in the missing MAP lexical item in the piece of text.

2. English as Second Language (ESL):

This is used to refer to the learners and the learning of English language in a non - native context e.g., Nigeria and Ghana. For this category of learners, English is a unifying tool in a multilingual setting. The subjects in this study are learners of English as Second Language.

3. WLRRT

The WLRRT refers to Word Learning, Retention and Recall Test use in this study to assess retention of lexical items. It is a definition recall test.

4. MAP

MAP stands for Medicine, Agriculture and Photography lexical fields. The lexical items investigated in this study are from these three lexical fields

CHAPTER TWO

LITERATURE REVIEW

2.0. Preamble

This chapter is divided into three sections under the following headings: The first section reviews concepts, ideas and notions that are considered paramount to the overall understanding of the study. The second section reviews related and relevant empirical studies that have significant bearing on the present study,while the third section discusses of the theoretical framework on which the study is hinged.

2.1. Conceptual Review

The conceptual review provides an elaborate explanation of all the concepts that are central to this study.

2.1.1. Second Language Learning (SLL)

Second Language Learning refers to the process by which people learn a Second language. It occurs through class room tutoring or through self- help and electronic programme where bits of the language (e.g., phonology, lexis, grammar, morphology etc) are taught step by step following some kind of syllabus or scheme (Ellis, 1994; Krashen, 1982; 1985). It is, conscious, deliberate, planned and formal. This study is about Second language learning with specific focus on vocabulary learning and development among undergraduate learners of English as Second Language (ESL) context

2.1.2. Theories of Second Language Learning

Second Language learning (SLL) theories are an offshoot of theories of Second Language Acquisition (SLA). Some of these theories are examined below:

a. Behaviourism

Behaviourism, as a theory of Second Language, believes language is something that can be observed and measured. The need to use language is stimulated and language is uttered in response to stimuli. To the behaviourist, competence in the rules of language is not as important as the ability to speak it; speaking is what makes language real. Knowledge is a mental state and the structure of a language doesn't make it any language; it is the function of speaking words that makes a language a language. Pavlov's Stimulus Response and Skinner's Operant conditioning are the most influential theories of behaviourism.

The Psychologist B.F. Skinner is perhaps the best known behaviourist who posits that children are conditioned by their environment to respond to certain stimuli around them. He applied this theory to language learning through operant conditioning which used reinforcement and punishment to teach. When children speak the language of their parents they are rewarded and become more skillful. They grow in their ability to respond in a manner that responds to the environmental stimuli given by his parents. This shapes a child's language more than knowledge of rules (Gleason and Ratner 2009).

The behaviourist proposed for a language-rich and stimulating environment for language learning and development to take place. The theory also emphasizes the need for feedback in language learning. Though, it is undisputable that a language-rich environment helps children to achieve success in communication, yet this theory has been criticized as laboratory based in which case the results from the experiments may not be applicable in real life. In other words, the behaviourists have not been able to prove these experiments outside the Laboratory.

Furthermore, the behaviourists approach has been criticized for not taking into account the many and varied influences on a child's language acquisition / learning.

b. Nativist Theory

Chomsky is of the most influential Nativist theorist. His theory, an antithesis of Skinner's theory, brought greater attention to the innate capacity of children for learning language, which had hitherto been widely considered a purely cultural phenomenon based on imitation. Nativist linguistic theories hold that children learn through their natural ability to organize the laws of language, but cannot fully utilize this talent without the presence of other humans. This does not mean, however, that the child requires formal tutelage of any sort.

Chomsky claims that children are born with a hard-wired Language Acquisition Device (LAD) in their brains. They are born with the major principles of language in place, but with many parameters to set (such as whether sentences in the language(s) they are to acquire must have explicit subjects). According to Nativist theory, when the young child is exposed to a language, their LAD makes it possible for them to set the parameters and deduce the grammatical principles, because the principles are innate. (Bigge and Shermis, 1998).

This is still a very controversial view, and many linguists and psychologists do not believe language is as innate as Chomsky argues. There are important arguments both for and against Chomsky's view of development. One idea central to the Chomskian view is the idea of Universal Grammar, which posits that all languages have the same basic underlying structure, and that specific languages have rules that transform these underlying structures into the specific patterns found in given languages. Another argument is that without a propensity for language,

human infants would be unable to learn such complete speech patterns in a natural human environment where complete sentences are the exception.

More recently, researchers have shown that parents react differently to children's grammatically correct and incorrect utterances. This shapes the child's behavior and therefore challenges the belief that language is innate.

c. Social Interactionist Theory

This theory is an approach to language acquisition that stresses the environment and the context in which the language is being learned. It focuses on the pragmatics of language rather than grammar, which should come later. The basic appeal of this approach is the importance it places on the home and the cultural environment in early-childhood language acquisition. According to this theory, language is not an innate ability,rather, it develops in negotiating your environment. Hence, vocabulary is bound by context or, alternatively, by the culture within which speech is necessary and understandable. This approach to language acquisition is based on culture and environment. Thus, it is not universal in scope. In fact, the theory holds that language is never universal, but always context- based and time-bound.

On one hand, this means that language is provincial, but also utilitarian, because it develops in the environment where it is most needed and most likely to be understood. On the other hand, it keeps the level of basic comprehension solely on the level of the initial environment. Transitions to other environments, at least on the surface, seem to be a problem (Lewis, 2010). The primary reason to support interactionism is based largely on the idea that utterances make sense if the teacher is aware of the context. This is the primary feature of the interactionist view. In this case, thought does not make objects; it reflects them and the context in which they are found. Comprehensibility, rather than grammar, is the primary concern of early-childhood language

acquisition. On the other hand, the mere absorption of words, in Chomsky's view, leads to nonsense phrases that must be corrected through the teaching of structure and grammar. One view stresses the relation between learner and culture; the other, between learner and arbitrary utterances of experienced speakers.

d. Cognitivism Theory

Piaget and Vygotsky are popularly known in the field of Cognitivism theory. Piaget's' cognitive constructivism is based on the belief that language is made up of symbols and structures, but exhibits itself as a child's mental abilities mature. In addition, language is only one of many human mental or cognitive activities. Piaget's view of how children's minds work and develop has been enormously influential, particularly in educational theory. His particular insight was the role of maturation in children's increasing capacity to understand their world: they cannot undertake certain tasks until they are psychologically mature enough to do so. His research has spawned a great deal more, much of which has undermined the detail of his own, but like many other original investigators, his importance comes from his overall vision (Wood, 1998).

In his Cognitive development study with young children, Piaget proposes that children's thinking does not develop entirely smoothly: instead, there are certain points at which it "takes off" and moves into completely new areas and capabilities. He saw these transitions as taking place at about 18 months, 7 years and 11 or 12 years. This has been taken to mean that before these ages children are not capable (no matter how bright) of understanding things in certain ways, and has been used as the basis for scheduling the school curriculum (Satterly, 1987).

Cognitivism regards learning as an active process in which learners construct and internalize new concepts, ideas and knowledge based on their present and past knowledge and experiences. Language learning is a search for meaning. It is active, takes time and involves higher thinking.

In language learning, learners organize, reorganize, structure and restructure new experiences to fit them to existing schemata, knowledge and conceptual structure through adaptation process. Learning is seen as an individual and social activity. On the other hand, Vygotsky's social constructivism theory is different from Piaget's by his reference to social basis of higher order cognition. To Vygotsky, learning is a social, collaborative and interactional activity. He emphasizes that a teacher must provide scaffolding in developing and accelerating students' abilities to think by themselves and to take responsibility

Based on the discussions above, the language learning theory that lend itself to this study is the Cognitivism theory. The Keyword Strategy allows the learners to study words and their meaning in a social, collaborative and interactional approach. There is a conscious effort to negotiate the meaning of the lexical items being studied in association with the Keyword word clues. The Keyword Strategy provides the context on which retention and comprehension tasks are pinned. Furthermore, the learners are in charge of their learning; the context and the time of study are entirely at their own will. Learners organize, and reorganize; structure and restructure as well as create Keyword clues for learning the lexical items.

2.2. VocabularyDevelopment

Vocabulary learning is indispensable to achieving success in language learning in general. Regardless of the stage of learning and contexts of learning, learners can learn to improve their skills (listening, speaking, reading and writing) of the language by learning new vocabulary. It also enables learners to improve their comprehension and production of language whilst enhancing communication.

Vocabulary is generally defined as all the words known and used by a particular person. Beck, McKeown and Kucan, (2008:1) define vocabulary as the ‘’words that a reader recognizes in ‘’print’’ and ‘’learning meanings of new words. Nash and Snowling (2006: 336) describe vocabulary as ‘’the knowledge of words and their meanings’’ while Sheehan (2002:1) on the other hand states that vocabulary is ‘’the ability to understand and use words to acquire and convey meaning. Vocabulary has alsobeen generallydefined as all the words that a person knows or uses when talking about a particular subject or a list of words with the explanation of their meanings in a book for learning a language. It is all the words used in a language which have meaning and consists of some parts like noun verb, idioms and pronunciation (Saputra, 2007).

Vocabulary is a list or collection of words and phrases usually alphabetically arranged and explained or defined in a dictionary or theasaures. It is a sum or stock of words employed by a language group, individual, or work or in a field of knowledge.It is also referedto as a list or collection of terms or codes available for use. Vocabulary is therefore viewed as all the words in language used by the speakers of that language for communication purposes.

2.2.1. Importance of Vocabulary

Vocabulary is central to language learning. McCarthy, (1990) asserts that knowledge of grammar and sounds without words to express ideas in Second language will be meaningless. Scrivener, (1994) also agrees that vocabulary is a powerful carrier of meaning. It carries the bulk of meaning expressed in communication. One can communicate using individual words only without the grammar and still communicate effectively. In fact, a good knowledge of grammar is not meaningful if the words are missing. It is so important to the extent that ‘’no text comprehension is possible, either in one’snative language or in a foreign language withoutunderstanding the text’s vocabulary’’ (Laufer, 1997:.20).

Despite, the relative importance of vocabulary in language learning, it is necessary to understand that words are very much more complex and in fact behave differently in different languages. Vocabulary is infinite, that is, that words can have more than one meaning depending on the situation in which they are used e.g., homophones, and homonyms. It is to this end that researchers have emphasized the need for a systematic and principled approach to vocabulary teaching and learning by ensuring that carefully selected vocabulary items of high priority are included (Nation, 1990). In this study, lexical items of high priority are studied by the undergraduate ESL students of FCE Kano using the Keyword Strategy.

2.2.2. Vocabulary Knowledge and Comprehension

The knowledge of words is essential for success in any language learning endeavor. This is because words are the building block of learning. They are the instruments we used for thinking, expressing ideas, emotions and understanding the world around us. Word knowledge is important because it entails knowing all the words that are use in expressing and accessing ideas in language for effective communication. Research evidences has shown that word knowledge highly correlate with academic attainment. It has been reported that learners who have large vocabulary can understand new ideas and concepts more quickly and deeply than learners with limited vocabulary (Sedita, 2005).A good and rich vocabulary is essential for successful listening, speaking, reading and writing activities (Nation, 1990; Nunan, 1992)

Vocabulary knowledge is synonymously used to refer to lexical or word knowledge. It is an intricate system of concepts that are learned in unique ways based on their varying degrees of complexity and use (Verhallen and Schoonen, 1993). Lexical knowledge is learned in a number of ways and understanding plays a very important part. Therefore to gain an understanding of a word, learners must develop depth of knowledge that includes learning how a word's phonology

relates to its orthographic representation; the syntactic structures into which the word form enters; its potential for collocations, derivational processes and polysemy; its morphological structure; a word's semantic richness; its connotation; and knowledge of Pragmatics (Paribakht & Wesche,1993). Verhallen & Schoonen (1993:345) also describes the multifaceted nature of word learning to include: the understanding of a word's literal meaning; various connotations; semantic associates, morphological options it offers; multiple meanings; and its syntactic rules. In order to increase a learner's lexical knowledge, he/she must be exposed to and use words in a variety of ways and across contexts.

Lexical learning is enhanced by knowledge of the role of word types (i.e. function words versus content words); the ability to use words in multidimensional ways (e.g. recognizing a word versus using a word expressively); opportunities for incremental exposure to refine a word's meaning; words' polysemous nature whereby meanings may show subtle and vast disparities; the extent to which words are interrelated to others words; and opportunities to apply word-learning strategies. By providing more than a single encounter, context and source of lexical information learners are able to engage in deep processing of words (Beck, McKeown & Kucan, 2008). Similarly, Graves, (2007:14) indicates that a rich language and word experiences through incidental word learning; direct words teaching using memory strategies (Sagarra & Alba,2006); instruction of word-learning strategies and word consciousness cultivation impact on lexical acquisition.

However, for ESL, lexical learning becomes even more complex as multiple factors, such as the breadth and depth of their word knowledge, the levels of proficiency in their First Language (L1) and Second Language (L2) and the learning context, may impact on the ability to learn word meanings (Kaivanpanah & Alavi, 2008). Evidence from studies of lexical acquisition and

learning among ESL have pointed to the effect of learning tasks on the amount of word knowledge gained (Griffin &Harvey, 1996). For instance, ithas been discovered that by engaging in everyday conversation, students' understanding of both receptive and productive use of vocabulary is enhanced (Justice, Meier and Walpole, 2005). Also, by listening to stories, the learners are able to acquire unfamiliar words (Robbins & Ehri, 1994) and even improve their expressive vocabulary (Senechal and Cornell, 1993).

Lexical knowledge and comprehension are not only closely connected but also relies heavily on the other. This relationship has been documented by many researchers. For example, it has been reported that '' lexical and vocabulary development is both an outcome of comprehension and a precursor to it, with word meanings making up as much as 70-80% of comprehension (Bromley, 2007:528). However, it has been noted that many students continue to struggle with comprehension because of limited vocabulary knowledge and ineffective strategies (Harmon, 2002: 606). On the other hand, some researchers have described how a larger vocabulary contributes to other areas of school success. In their study, Manzo, Manzo and Thomas (2006: 615) concluded that ''word learning can improve the capacity to learn'' and ''a rich vocabulary increases comprehension and, therefore, most learning''. In other words, as declared by Lubliner and Smetana (2005:163) '' children with larger vocabularies find reading easier, read more widely, and do better in schools''. Such students usually are very articulate, respond to question and also ask better question than their peers with limited vocabularies. This study set out to improve the learners' vocabulary knowledge and comprehension through the use of the Keyword Strategy.

2.2.3. Types of Vocabulary

Vocabulary has been classified into three main classes based on its use, frequency and as found in specialized text. These are discussed below:

1. **Vocabulary According to Use**

The four types of vocabulary in this category include:

a) Receptive,

b) Productive,

c) Meaning / Oral

d) Literate / Written vocabulary

(Gairns and Redman 1991; Nation, 2001; Pikulski and Templeton 2004).

a.Receptive Vocabulary

Receptive vocabulary,also known as receive, or passive, is all the words that a learner can recognize and understand when heard, read or seen in the context of reading and listening (Nation, 2001; Gairns and Redman 1991). These words may range from well-known to barely known. Generally speaking, receptive vocabulary is larger than productive vocabulary. For instance, although young children may not yet be able to speak, write, or sign, but they may be able to follow simple commands and appear to understand a good portion of the language to which they are exposed. Therefore before acquiring speech, they have tens and hundreds of receptive vocabulary while the productive or active is zero. As they learn to speak or sign, however, their productive/active vocabulary begins to increase. It is also possible for the productive vocabulary to be larger than the receptive vocabulary, for example in a Secondlanguage, a learner who has learned words through study rather than exposure, and can produce them, but has difficulty recognizing them in conversation. Specific examples of receptive vocabulary are discussed below:

i. Listening Vocabulary

Listening vocabulary is all the words a learner can recognize when listening to spoken English. Although learners may still understand some words they were not exposed to before using cues such as tones, gestures, the topic of discussion and the social context

ii ReadingVocabulary

Reading vocabulary refers to all the words that he/she recognize when reading a text. This is generally the largest type of vocabulary simply because a reader tends to be exposed to more words by reading than by listening.

b. Productive Vocabulary

Productive vocabulary (also known as active or achieve) refers to all the words that a learner can recall and use appropriately in speaking and writing to express himself and to convey messages. It also refers to words which can be produced within an appropriate context and match the intended meaning of the speaker or signer (Nation, 2001; Gairns and Redman, 1986; 1991).

As with receptive vocabulary, however, there are many degrees at which a particular word may be considered part of an active vocabulary. For instance, knowing how to pronounce, sign, or write a word does not necessarily mean that the word that has been used correctly or accurately reflects the intended message; but it does reflect a minimal amount of productive knowledge. It is important to recognize that within the receptive- production dichotomy lays a range of abilities: degree of knowledge and depth of knowledge. The degree of knowledge simply indicates that a word gradually enters a person's vocabulary over a period of time as more aspects of word are learnt, while, the depth of knowledge imply a differing degree of word

knowledge. The degree of knowledge differs among learners. Specific examples of productive vocabulary are discussed below:

i. Speaking Vocabulary

A learners' speaking vocabulary is all the words that he/ she uses in speech. It is likely to be the subset of the listening vocabulary. Due to the spontaneous nature of speech, words are often misused. This misuse - though slight and unintentional - may be compensated by facial expression, tone of voice, or hand gestures.

ii.Writing Vocabulary

These are all the words that are used in various forms of writing from formal essays to informal. It should be noted however that many written words do not commonly appear in speech.

c.Meaning/Oral and Literate /Written Vocabulary

In addition to the above productive and receptive classification, Pikulski and Templeton (2004) add two more classes: meaning/oral and literate/written. The meaning / oral refers to the combination of listening and speaking vocabulary while the literate / written refers to the combination of reading and writing vocabulary.

2. Vocabulary According Frequency

Vocabulary is classified under this as either high frequency or low frequency. Words that are used very often in normal language in all four skills across the full range of situation are known as high frequency vocabulary. It has been estimated that the high frequency words covers about 85% of the vocabulary in text books (Nation and Newton, 1997). While the low frequency words consists of word that are rarely or seldom used in language. It usually occupies a very small portion of words found in texts. The determination of high or low frequency vocabulary has been

described as relative and arbitrary in the sense that a word may be a high frequency to one person and a low frequency word to another (Nation & Newton, 1997).

3. Vocabulary in Specialized Text

The technical vocabulary is an example of vocabulary found in specialized text. It is divided into three categories namely: fully technical, crypto - technical and lay –technical. The fully technical is that whose meaning is clearly technical and unknown in general language; the crypto-technical vocabulary that contains multiple meanings and as well as a hidden technical meaning are found in specialized text, and finally, the lay-technical vocabulary is obviously technical, but it is known by normal persons (Fraser, 2006). Furthermore, the technical vocabulary is specific to a particular topic, field or discipline and is divided into four categories based on its form and meaning as listed below:

1. Category 1: the form and meaning of the vocabulary item rarely appear outside the specialized field;
2. Category 2: The form is used both inside and outside the specialized field but with other meanings;
3. Category 3: The form is also used both inside and outside the specialized field but the meanings it has are accessible through their use outside the field;
4. Category 4: The form of the vocabulary is more common in the specialized field than elsewhere but the meaning has little or no specialization.

The differences between technical and non technical vocabulary can be understood through the form discussed in category 1 and through form and meaning as explained in category 2, 3, and 4.

Other sub categories of technical vocabulary are academic and general vocabulary. The academic is commonly found in academic text and not elsewhere, while general vocabulary is made up of non technical and non- academic and is mostly high frequency words (Nation, 2001).

In conclusion, it is worth noting that though vocabulary classification varies yet each classification echoes the other words meaning, that is, there is a degree of interrelatedness between each classification as brought out by scholars. For instance, Nation's (2001) receptive and productive classification are related toas well as subsumed in Pikulski and Templeton's (2004) Meaning / Oral and Literate / Written vocabulary on the one hand ; and Gairns and Redman's (1986;1991) active and Passive classifications on the other. In this study, the vocabulary items used are technical as found in specialized academic texts relating to Medicine, Agriculture and Photography registers.

2.2.4. Vocabulary Learning and Development: An Historical Overview

Over the years, the vocabulary component had been widely neglected in the ESL/ EFL classroom in favour of grammar. Levenston, (1979: 147) opines that lexical learning has been a ''victim of discrimination.'' The grammar component was the most favoured because it is based on a set of rules with a coherent structure which students follow or remember, but it is not the same for vocabulary (Maiguashca, 1993). Traditionally, Second language (L2) learning research has meant research in grammar in which the focus is on understanding and learning rules of structural development. These studies largely ignored the fact that ''using the right word is the most important aspect of language use'', (Politzer& McGroarty, 1985:258) and that lexis should be ''the major learning priority'' in L2 learning (Jones, 2004).

A great deal of interest in the issues of vocabulary learning and development began as far back as the 15th century. It is on record that as far back as this time, many linguists, philosophers and pedagogues such as John Locke (1690-1975) have showed interest in the issue of vocabulary. Their propositions regarding the importance of vocabulary raised the level of interest in and increased the focus of attention to vocabulary development. Today, it is correct to say that the success recorded from researches in vocabulary learning and development are the results of these and many other efforts made by linguists, philosophers and pedagogues. However, it is worth noting that the history of the development of the vocabulary component in Second and Foreign language contexts was not as smooth as it may seem to be. It was characterized by a series of dominating ideologies or fashions that have succeeded one another and which sometimes come in full circle (Carter and McCarthy, 1988).

The field of vocabulary study has seen a lot of changes and refinement over the years. Several theories, methods, approaches and strategies of vocabulary learning and development have drawn on advances from other disciplines, such as descriptive linguistics, psycholinguistics and, recently, computational linguistics (Carter and McCarthy, 1988).

Traditionally, the major bone of contention regarding vocabulary has always been that of what vocabulary to emphasized, (i.e. receptive or productive) and also the approaches, methods, techniques and materials for enhancing vocabulary learning and development. As a result of this and other contending issues, in the 1940s through to the 1950s and the 1960s, the vocabulary component was relegated to the background. It does not feature prominently in language studies as well because of the shift of emphasis to syntax and phonetics. This was vividly implicated in the Structural Approach (Fries, 1945 in Carter and McCarthy 1988), Contrastive Analysis (Lado 1955 in Carter and McCarthy 1988), and transformational grammar (Chomsky 1960 also in

Carter and McCarthy 1988).At the pedagogical level as well, the teaching of vocabulary was not given much thought as it was seen mainly as a problem of grading and selection balanced by concerns of contrastive analysis and error prediction for a target group of learners (Carter and McCarthy, 1988).

The 1970s marked the beginning of the change of orientation towards vocabulary as a component and a skill in language learning mostly as a result of the concern of linguists, such as Wilkins, 1972; Twaddell, 1972-1973; Connolly 1973; Donley 1974; Lord 1974; Brown, 1974; Anthony 1975and Nilsen 1976 in Mc Carthy (1988). For instance, Wilkin's (1972) work on translation led him to eulogize the importance of vocabulary in language learning.

The later part of the 1970s saw a shift of emphasis from vocabulary as lists of items to be learnt towards the learner and his needs. This development brought the learner to the center stage. This milestone was achieved through Richards' (1976) work on lexical competence, which highlighted about eight characterizations of lexical competence; Martin's (1976) common-core academic vocabulary for college students' needs; Judd's (1978) massive vocabulary instruction in natural linguistic contexts; Blum and Levenston's (1978a and b) lexical strategies; Bialystok and Froehlich's (1980) learner strategies and Terrell's (1982) Natural approach. By the end of the 1970s, vocabulary development approaches was learner centered. It was aimed at providing learners with resources (word lists) for achieving communicative objectives (Carter and McCarthy 1988). The shift of focus to learners as opposed to teachers and methods led to the creation of language learner strategies (LLS).

Today, the area of vocabulary skill has seen substantial development and improvement. Vocabulary has gained so much recognition that it is now believed to be just as important as the

main skills of reading, writing listening and speaking. The new status accorded the vocabulary component came about as a result of the realization that vocabulary knowledge is indispensable in language use; language use enables the increase of vocabulary knowledge and knowledge of the world ; knowledge of the world enables the increase in word knowledge and so on (Nation and Waring, 1997:6).

In the millennium, the field of Second language vocabulary learning and development has been especially very productive in the millennium. A large number of studies have produced a huge amount of literature on: theories (e.g. Carter, 1987; Carter and McCarthy, 1988; McCarthy, 1990; Nation, 1990; 2001), researches (e.g. Arnaud & Bejoint, 1992; Gass, 1987; Meara, 1989; Nation & Carter, 1989; Gairns & Redman, 1986; McCarthy & O' Dell, 1994, Lewis, 2010; Nattinger and DeCarrico,1992; Willis,1990; Arnaud and Savignon,1997; Bahns & Eldaws,1993;Cowie,1988; and Sansome, 2000). Furthermore,some studies have treated extensively different aspects of vocabulary and lexical acquisition and learning e.g., Huckin, Haynes, and Coady, (1993); Hatch and Brown, (1995); Coady & Huckin, (1997); Schmitt & McCarthy, (1997); Atkins, (1998); Wesche & Paribakht, (1996); Read, (2000); Schmitt, (2000), and Nation, (2001).

2.2.5. Vocabulary as a Skill or a Sub-Skill: An Overview of Schools of Thought

The renewed interests in research in Second Language (L2) vocabulary learning has led to the formation of schools of thoughts whose efforts have enormously influenced its study throughout history. These schools of thoughts are:

1. The first school consists of Linguists and language practitioners who consider vocabulary as a component of one of the four major language skills, i.e. reading, and,

2. The second consists of Linguists and language practitioners who consider vocabulary as an independent aspect of language development, equal in importance and status to grammar. In subsequent paragraphs these views will be discussed.

According to the first school of thought, Second language vocabulary is viewed as a necessary sub component of the development of reading skills because L2 learners need very well developed vocabularies in order to read authentic selections (Dubin, 1989).

The arguments put forward for this school of thought thus far were derived from pedagogical evidences that show that ESL learners do not have much time to undertake separate vocabulary building courses, and furthermore, teaching vocabulary items which are not embedded in some meaningful context, such as a stretch of text, does not seem to help learners, and therefore vocabulary should be taught through unedited text. Krashen, (1989) is of the view that vocabulary is acquired in the same way that the rest of the language is acquired. From this perspective, vocabulary learning involves learning words one at a time, by deliberate study (Krashen, 1989: 440).

To this end, Krashen (1989) opines that the provision of comprehensible input in the form of reading and listening to stories is the way to successful vocabulary development. He is against explicit teaching of vocabulary and considers it as boring and at worst painful (Krashen, 1989: 450). Krashen (1989) concludes that incidental vocabulary acquisition achieves better results than intentional acquisition. Research evidences from studies carried out earlier on have tended to support Krashen's, (1989) conclusion. For example, Fox, (1987) in Alain (2014) suggested that the use of simplified reading text followed by more complex ones leads to gradual development of L2 vocabulary; Heltai (1989:292) suggests the use of Oral translation and

Pierson (1989) in Alain (2014) suggests the use of meaning learning approach i.e., teaching the etymology of words.

By and large, researchers in this group expressed an interest in vocabulary acquisition aroused mainly as a result of their interests in enhancing the reading component which has been greatly impeded because of lack of adequate vocabulary. Most of the suggestions given for vocabulary development are not the product of research in the development of L2 vocabulary, but rather of ways of circumventing the problem of inadequate vocabulary in order to develop reading skills.

The second school of thought viewed vocabulary as a language skill rather than a sub skill. Researchers in this category were interested in investigating how vocabulary as a language skill is stored and retrieved by L2 learners.

In their study, Fay and Cutler, (1982) in Alain, (2014) provides evidence for phonologically organized mental lexicon through an investigation of 'malapropisms'' (word substitution errors). The finding from this study indicated that the mental dictionary lists its entries according to syllable structure and/or stress pattern, and only within these categories according to sound.

Also in a study of how foreign words are stored in the learners' mental lexicon, Meara, (1980) tests the word associations of 76 English girls learning French in two London Comprehensive schools. The subjects were given a list of 100 French words and were asked to write down, beside each one, the first French word that it made them think of (Meara, 1980:194). The associations were compared with the word associations produced by the native French speaker. It was concluded that the native speaker's mental dictionary is organized mainly on semantic lines while in L2 learners this semantic organization seems to be much less established (Meara, 1980:208).This lack of semantic organization could be source of difficulty that foreign language

learner experience in processing both written and spoken language (Meara,1980:208). This study has been criticized on the ground that it has failed to confirm the existence of developmental patterns.

In another study of acquisition, Meara and Ingle (1986) test the acquisition and retrieval of some low frequency French nouns by English-speaking learners. The findings indicated that the beginning of L2 words were relatively resistant to error, while subsequent consonants were more likely to be incorrect. This study is suggestive of how words are stored and retrieved from mental lexicon, but it has also been criticized as is limited in that it relate to words acquired phonetically and concerns individual words.

In another study, Laufer (1990) compares adult EFL learners and English native speaking children in order to examined the similarities and /or differences that they experience in distinguishing between words of similar forms (synforms) e.g. 'considerate' and 'considerable'. It was discovered the EFL learners share the same order of difficulty in the acquisition of 'synforms'. The findings indicated that in vocabulary acquisition, learners follow a similar developmental route according to the L1 acquisition= L2 acquisition hypotheses which predict that L2 learners follow a similar developmental route to that followed by a child learning the same language as L1 (Laufer 1990:290). This study, despite the interesting result, was criticized on the ground of age differences between samples, (i.e., adult EFL and 12 year old native speakers) without justifying why she expected language development in these two groups to be comparable. Furthermore , the multiple choice used for the study have been criticized as poorly designed as well because in all the test, the fourth distractor of each item is the one that is always incorrect.

Palmberg, (1987) investigates patterns of vocabulary development in Swedish ESL learners in Finland. Using a 'spew' which required the students to write down as many words as they could think that began with a given letter, Palmberg discovers that the words produced by the student consisted mainly of textbook vocabulary. The study also shows a steady increase in the overall word production capacity of the subject over time.

Gibbs, (1990) examines the acquisition of modal auxiliaries (i.e. can, could, may and might) in the speech of Punjabi L2 learners. The result indicated that the acquisition of modal auxiliaries by the L2 learners followed an English L1 developmental pattern.

Olshtain, (1987) studies the acquisition of word formation rule and reported that L2 learners acquire target word formation processes in a gradual progression. This study strongly suggests a developmental process in the acquisition of word-formation rules. In the review of studies that considered vocabulary as a language skill, vocabulary acquisition has been equated with acquisition of individual words by L2 learners, (Meara, 1992).

In the context of the present study, vocabulary takes a dual role that is it use as a skill and a sub-skill. First, as a language skill of its own, the learners in this study use the Keyword Strategy for internalizing lexical items in an explicit and intentional way. Secondly, as a sub-skill, the lexical items are further presented in cloze passages which assess comprehension.

2.3. Vocabulary Learning Challengesfor Second LanguageLearners

Vocabulary is extremely important for success in language learning and development. It has been estimated that a native speaker beginning school will have a vocabulary of around 4000 to 5000 word families, adding roughly 1,000 word families a year until graduating from a university with a vocabulary of around 20,000 word families (Nation and Warring 1997). In another view, the

native language speaker' vocabulary growth (word and meaning acquisition) is about 10,000-12000, words at junior high (i.e., junior secondary) and 12000-17000-20000 word at college/university level and 17000 and more at adult age (Biemiller and Slonim, 2001; Nation and Waring, 1997; Nagy and Anderson, 1984; White, et al 1990). If this estimate is something to go by, it means that the ESL students in this context have enormous challenges ahead of them. Based on the above estimation, a very serious challenge for second language learners is that of the low level of vocabulary achievement in vocabulary as revealed in their performances in spoken and written English language examinations, tests and assignments. Several plausible explanations for the problem of low level of vocabulary achievement among some of the ESL learners in this are discussed below:

First Language influence and Fossilization in Second Language Vocabulary Learning.

First Language (L1), as the source language, provides the initial concepts and ideas which are gradually and systematically blended with those taken from the Second Language (L2) through the process of conceptual restructuring (Han, 2009). Consequently, L2 input is modulated by L1 interference or influence through the L1-based semantic and conceptual system resulting in fossilization (Han, 2009; Jiang, 2000; Lardiere, 1998; Long, 1997).

Fossilization, a phenomenon in Second language (L2) vocabulary learning, occurs when a post-pubertal learner's lexical competence in L2 cease to develop when he/she is unable to learn certain features in target-like forms even with plenty and adequate contextualized input, strong motivation, ample exposure to rich L2 input and plenty opportunities for practice (Jiang, 2000; Lardiere, 1998; Long, 1997). Some of the causes of fossilization among others are: i. learners' attitudes i.e., when learners feel their communicative needs have already been met; ii. Lack of

corrective feedback from teachers and cultural influence i.e., resistant to target language culture etc. When this happens, the language learner may lose interest and motivation to learn.

Fossilization could provide explanations for some ESL learners' learning difficulties resulting in their inabilities to succeed and to attain Native-like competence in vocabulary learning. To this end therefore, fossilization provides a justification for conducting a research on Keyword Strategy because the use of the strategy has been known to improve motivation and interest (Hauptmann, 2004); and provides opportunities for more and repeated exposure to vocabulary items through its verbal and visual/mental imagery associations (Alzahrani, 2011; Gue, et al. 2010; Baleghizadeh & Ashori, 2010) and others,.

Bilingualism and Second Language Vocabulary Learning

Bilingualism is the existence of two different languages within the speech repertoire of an individual or a society (Garcia, 2011; Genesee, Paradis, & Crago, 2004). Bilinguals operate in the language using the two linguistic systems, however, separately, (Garcia, 2011; Baker, 2006; Bialystok, 2001). By this, it is meant that a linguistic code is stored and organized separately in two meaning units. This explains why bilinguals have two systems of meaning for words, that is., one system of meaning for known words in the L1 and the other system for known words in L2 (Garcia, 2011; Baker, 2006; Bialystok, 2001).This results in differences in language competence.

The differences in terms of language competence between bilinguals provides a justification for this study because each type of bilingualism results in different competence. For instance, simultaneous bilinguals have roughly similar competence in both languages, while on the other hand, sequential bilinguals (a type to which the samples in this study belong) have different

levels of competence because one of the languages receives more input and exposure, consequently, it is more dorminant. In addition, other factors such the differences in age and time of acquisition as against learning contribute to the differences in competences especially with sequential bilinguals where the level of competence in First language (L1) often outweighs that of the Second language (Garcia, 2011; Baker, 2006; Bialystok, 2001).

The issue of age of acquisition versus learning have been extensively discussed under the Critical Period Hypothesis (CPH) famously associated with Lenneberg, (1967). It holds that language acquisition must occur during a critical period which ends at about the age of puberty and any language acquired after the age of puberty will be qualitatively different from those involved in First Language acquisition (Krashen, 1975; Lenneberg, 1967, 1969 in Morgan, 2014). If applied to language learning, the CPH will imply that any language learning which occurs after the age of puberty will be slower and less successful than the normal First language learning

Research studies have used the CPH to explain some aspects of language acquisition and learning only but not all. With regards to language learning, it has been observed that some features or aspects do lend themselves to the critical period, while others do not. For instance while acquiring grammar does not have a critical period, but the learning of some linguistic feature like tense could be affected by critical age. Also, phonological acquisition is critical age sensitive particularly with unusual and new sounds. In other words, new sounds are easier to pronounce with native-like accuracy than sounds that are similar but not identical to those found in one's First language. Even though, research evidence has shown that vocabulary learning has no critical age, yet, because of its complex system (knowing a word entails knowing its pronunciation, grammatical uses and functions, morphology, semantics, collocations, philology

etc) it may be affected by critical period especially the phonological aspect of knowing a word. In all ramifications, the issue of critical period is real in language learning.

The differences in age of learning as against acquisition, inadequate exposure to L2 input and coupled with the fact that bilinguals often use two systems to express word meaning resulting in language learning problems such as transfer, interference, mistakes and errors etc may provide explanations for ESL learners' low level of attainment in vocabulary learning. This study is therefore justified on the need to provide ESL learners, in the present study context, with opportunities to improve their vocabulary knowledge and to gain near native - like competence irrespective of the ages through the use of the Keyword Strategy.

In conclusion, psycho social and pedagogical issues such attitude, dispositions, negligence, motivation, poor learning conditions, lack of interest, poor learning, poor methods approaches and strategies, poor background knowledge and many other issues may justify the need for this study. For example, attitude and dispositions towards a target language and culture exacerbated by cultural and religious beliefs, societal, group or individual beliefs can be detrimental to learning which in thelong run results in low level of attainment in vocabulary learning and development. The problem of lack of adequate or low vocabulary level greatly affects academic achievement and overall language development. It is one of the greatest challenges in Second language learning (particularly among the samples in this study) which needs to be solved. This study is justified to enhance vocabulary attainment and the achievement of native - like competence through the use of Keyword Strategy.

2.4. Vocabulary and Lexico-Semantics

The study of Lexical Semantics has contributed immensely to vocabulary learning and development. Literally, lexical means word, while semantics deals with meaning. Lexical semantics also referred to as lexico - semantics is an area of study concerned with words and meaning. As an academic discipline in its own right, the study of lexical semantics originated in the early nineteenth centuries even though, prior to this time, the study of word meaning has been in existence. Its development had been greatly influenced by three traditions: tradition of speculative etymology, the teaching of rhetoric, and the compilation of dictionaries (Baldwin, 1998).

The field of lexical semantics has contributed immensely to the understanding of vocabulary development and meaning acquisition. It is concerned with the identification and representation of the semantics of lexical items (Jackendoff, 2002). It is the study of word meaning that is Content or Open class word meaning as opposed to grammatical meanings such as function words. As a sub field of linguistic semantics, it studies word meanings as constituted by their contextual relation. The contextual relations can be syntagmatic or paradigmatic.

In lexical semantic studies, the basic unit of analysis is lexis, lexemes or lexical which include words, affixes, compound words and phrases. The theory also deals with the analysis of lexical meaning which refers to the meaning of a word (or more precisely, a lexeme) as it appears in the dictionary.

2.4.1. Lexemes and Lexical items in Lexico-Semantics Analysis

Lexemes, lexis, lexical items and words are used synonymously to mean an independent unit of linguistic form in a language (Cruse, 1986; Hirst, 1987; Pustejovsky, 1995; Ravin and Leacock,

2000). They are indispensable tools used for communication purposes. In other words, lexemes or words are present in all human languages and make up the bulk of vocabulary in such languages. Lexemes occur in levels and are used to form structures. As independent linguistic unit, words in a language have functions and meanings. These functions and meanings are an important aspect of the language in which they are found as they share some features with the language that accommodate them. They are indispensable in the study of language itself and in fact they are central to the study of lexicology (Jackson and Amvela, 2007).

Various definitions of lexemes or words have been put forward by Linguists, and scholars. A lexeme has been described as a unit of language which can be spoken or written. Lexemes are linguistic units used to generate meanings in a language and consist of two parts: sound form and meaning, (Saeed, 2009). Lexemes / words are uttered and split up in order to transmit meaning as they move from a wider to a narrower meaning (Bolton and Crystal, 1969). Lexemes or words are ambiguous entity in the sense that they are capable of two or more meanings or interpretations (Jackson,Bogers, & Kersholt 1988). Lexemes can be grouped into lexical fields. Lexical field is the arrangement of words or lexemes into groups (or *fields*) on the basis of an element of shared meaning. A lexical field is a set of lexemes that are used to talk about a defined area of experience e.g., field of cooking (Jackson, 2002).

In this study, a set of lexemes are arranged in three lexical fields of Medicine, Agriculture and Photography each of which representsa defined area of knowledge. The main focus of this study is to investigate students' competences in terms of their abilities to learn, retain and comprehend such lexical field items, independent of the contexts in which they occur,through the use of the Keyword Strategy.It seeks to find out the amount of learning that has taken place over time since the pre-test. The focus is on learning, retention and comprehension of words and their meaning at

conceptual/denotative level. The concept of lexico semantic as used in this study therefore refers as in the preceding sentence above.

2.4.2. Vocabulary and the Concept of Semantics

The analysis of meaning (semantics) of lexical items is also an area in lexico- semantic study and vocabulary learning. The term Semantics was first coined and used by Breal (1924) in Lyons (1995) for the sub-discipline of linguistics concerned with the analysis and description of the literal meaning of linguistic expressions.

Several linguists have thereafter put forward a number of definitions of Semantics. For example, O'Grady, et.al (1993:198) describes Semantics as the study of meaning in the linguistic system.Similarly, Cann, (1994:1) also describes Semantics as the study of meaning as expressed by words, phrases and sentences of human languages. Semantics has also been defined as the study of linguistic meaning (Prasad, 2009:133). Denham and Lobeck, (2010: 286) defines semantics as the system of rules underlying our knowledge of word and sentences meaning. Saeed, (2003:3) sees Semantics as the study of meaning communicated through language. In another definition, Saeed, (2009) defines Semantics as an area exclusively concerned with the meanings of linguistic entities such as words, phrases, grammatical forms and sentences, but not with the meaning of actions or phenomenon". Semantics is the study of how a system of signs and symbols carries information about the world (Anna Smoliana, 2013). It has been described as a branch of linguistics which is concerned with the signification of language. In other words, it is concerned with the problem of what linguistic elements are said to be signs of. The analysis of signification takes the forms of describing the concepts which constitute linguistic signs (Lobner, 2002:3; and Lyons, 1995:136). Hence, Semantics is concerned with the meaningful relations between words, sentences and other linguistic entities.

Owing to the relative importance of meaning in communication, the main focus of Semantics is the investigation, and analyses of issues and problems of meaning in relation to natural human language. It has been mentioned that the notion of meaning concerns that which is expressed by sentences, utterances and their components by language (McGregor, 2009:1).

2.4.3. Theories of Meaning

The various theories of meaning essentially provide the frame work from which the study of meaning can be inferred (Yule 2007; Adedimeji, 2003). In line with this, Akmajian et al. (2008) propounds four theories of meaning namely:

a. **The Denotation Theory of Meaning**

This concerns the relation between a linguistic expression and what it refers. The denotation linguistic reference and semantic reference i.e. what an expression means can be linked to the actual object which it denotes. In cases where two objects share the same meaning these results to having the same denotation (Synonymy).

b. **The Mentalist Theory of Meaning**

The meaning of each expression is the idea (or ideas) associated with that expression in the minds of speakers. However, this theory cannot be adopted to predict anything specific because it is too vague.

c. **The Sense Theory of Meaning**

Frege (1892) in Akmajian et al. (2008) argued that ideas are not the same as meaning because ideas are subjective whereas meaning is objective. This theory has its unique way of operation and it is probably the dominant view in linguistic semantic theory.

d. **The Use Theory of Meaning**

This theory was formulated to improve upon the previous theories that were propounded. It is worthy of note that, there is no theory of meaning that has given a clear notion of how meaning can be inferred.

e. **The Ideational Theory of Meaning**:

This theory is according to Akmajian et al (2008) is associated with Fodor (1977). The assumption behind this theory is that meanings depend on what ideas are taken to be and how the associative relation between expressions and ideas are defined.

2.4.4. Word Meanings: Definition

Word meanings are determined by the sequential arrangement of letters that constitute the word in a language. Every language has its own Orthographic rules i.e. systematic rule of how letters should are arranged to form words. Thus words do not exist in vacuum as such their use in a language must conform to the operating system in such a language. The meanings attached to words are by and large accepted and determined by speakers of a language since they are the negotiators of meaning of most of the words thus making word meanings to vary from time to time and culture to culture.

The concept of word meanings has been widely discussed among researchers and linguists. For instance, Fromkin, Rockman and Hyams (2007) posit that the meaning of words is a function of the morpheme that encompasses it. In other words, the meaning of words is part of the linguistic knowledge. Jackson and Amvela (2005) note that word meaning involves knowing its referent in the world, its sense and collocation relations contracts that may hold between it and other co-occurring words.

Word meanings often have connotation, and unstable meaning associations e.g., emotional overtones (McGregor, 2009). Singh, (2005) opines that "words actually tend to be polysemic,

which means that they individually carry different meanings or at the very least, whole language of shade of meaning". Hall, (2005: 69) submits that "the meaning of a word, then can be seen as the concept, encoded in mentalist, with which word form is conventionally associated". This study investigates the effect of Keyword Strategy on learning, retention and comprehension of denotative meaning of MAP lexical items.

2.4.5. Types of Word Meaning

Leech (1981) puts forward seven different kinds of meaning as follows:

a. Conceptual Meaning

This is known as the lexical, dictionary, denotative or Cognitive meaning of a word or lexeme. It is primary, factual, objective and verifiable meaning accepted by every speaker of a language. The branch of Linguistics that is concerned with the study of lexical meaning is called lexical semantics

b. Connotative Meaning

It is referred to as secondary meaning. In Semantics, connotative meaning refers to the additional meaning that a word or linguistic unit possesses by virtue of personal or cultural association. It is the opposite of denotative meaning. Connotative meaning is biased and dependent on subjective judgment. For example the connotation of the word ''black'' is sadness, and doom.

c. Social Meaning

This is referred to as interpersonal, stylistic or situational meaning. It is a kind of meaning conveyed through social interactions or circumstances of its use such as locutionary, illocutionary and perlocutionary acts.

d. Affective Meaning

This is also known as emotive or attitudinal meaning. This type of meaning reflects the personal feeling, emotion or attitudes of the speakers towards the listeners, or to something being talked about.

e. **Reflective Meaning**

This is the kind of meaning which arises in cases of multiple conceptual meaning of a word that is when single word has a multiple senses

f. **Collective Meaning**

This type of meaning consists of a kind of association a word acquires on account of the meanings of words which tend to occur or collocates in its environment, e.g., words like pretty and handsome as in: A pretty girl / a handsome boy.

g. **Thematic Meaning**

This refers to a process in which a speaker or writer organizes his/her message in terms of order, focus and emphasis. Thematic meaning is an interface (relation) between syntax, semantic and morphology as in the case of theta roles such as agent, beneficiary, theme, goal and instruments etc.

In this study, the notion of meaning concerns that which is expressed by words to give denotative sense. It is the literal meaning of words as stated in the dictionary of English. Denotative meaning links a word to an object which it denotes.

2.5. Vocabulary Retention in Language Learning

Vocabulary retention is an important aspect of vocabulary development and overalllanguage learning becauseit enables learners to store, (in short and long term memory) retrieve and use lexical items appropriately in new situations, and different or familiar contexts to express

meaning.Since vocabulary retention is centraltothis study, an understanding of the conceptis necessary.

2.5.1. Retention: Conceptual Definition

Retention has been defined as the ability to retain things in mind. It is the preservation of the after effects of experience and learning that makes recall or recognition possible. It the ability to recall or recognize what has been learned or experienced. The various theories of retention tend to emphasize the role of memory in the ability to retain and recall information.

Vocabulary retention should be seen as the ability to store, remember, recall, and retrieve vocabulary items learned or acquired after a length or interval of time and be able to use it in different context (Mohammed, 2009). In order to facilitate vocabulary retention, it has been recommended that learners should not only learn the words, but also remember them (Thornbury, 2002). They should as well be engaged in a deeper analysis of the word properties rather than simply understand its meaning in context (Bahrick, 1984). This is because a deeper level of processing means a stronger connection between the word form and its meaning and hence effective retention and recall (Craik & Tulving, 1975). Similarly to foster long-term recall, the successful learner must analyse, rehearse, elaborate and established the word meaning complex within a suitable network of meaning. This elaboration probably increases the chances that the word and its meaning will be available for use at a later time (Lawson &Hogben, 1996). The mnemonic strategy of which the Keyword is a type works on the principle of semantic elaboration.

Vocabulary retention can also be facilitated by deeply analyzing the meaning of words in relation to the meaning of the whole sentence in which they are embedded (Khabiri & Pakzad, 2012 and Haycraft, 1978). Eyraud, et al,(2000)isofthe view that by providing vocabulary rich environment

to promote incident learning, increasing reading activities, engaging in explicit and direct vocabulary teaching, use of vocabulary in varieties of context, encouraging active student participation, will go a long way to stimulate vocabulary retention and growth.

Nation, (2001) posits that noticing, retrieval and creative (generative) processes are indispensable to fostering retention and remembering. Based on its description, noticing which is facilitated by learners' motivation and interest, refers giving attention to and awareness of vocabulary item. Retrieval which may be receptive or productive simply means being able to recall the vocabulary during class activities and finally, generative use means using the vocabulary in new context with different meanings. It can also be receptive or productive.

In this study, the Keyword Strategy enables the subjects to engage in deep level of processing through analyzing, rehearsing, elaborating and establishing word meaning in context of comprehension passages.

2.5.2. Types of Memory for Retention

There are three types of memory namely: Sensory Memory (SM), Short-Term Memory (STM) and Long-Term Memory (LTM). The basic difference between the three is in terms of the amount of time the memory lasts, (Zhang-Xiang, 2004).

The Sensory Memory (SM) has been described as "the shortest-lived memory that lasts for milliseconds to a few seconds" (Zhang-Xiang, 2004: 1). The Short-Term Memory (STM), also refered to as primary/active/ working memory, on the other hand, stores information from seconds to a few minutes, (Zhang-Xiang, 2004 & Preston, 2007). It has the capacity for holding a small amount of information in the mind in an active readily available state for a short period of time, Gathercole, 1994; and Metzig &Schuster, 1988). The Short-Term Memory is a 'storage

device' for new information which is already being processed, such as a new word encountered for the first time (Baddeley, 2002).Despite that it is fast, it has a very limited capacity for keeping information in an active and readily available state for a very short time, (Amiryousefi & Ketabi, 2011). Short-Term Memory is fast, but has a very limited capacity to hold information in an active and readily available state for a very short time (Amiryousefi & Ketabi, 2011).

In contrast, the Long-Term Memory (LTM) can hold an indefinite amount of information which can last from an hour to a lifetime, (Zhang-Xiang, 2004). It has an unlimited storage capability and as such it can keep an indefinite amount of information provided that ome changes happen in the long-term memory, (Sweller and Chandler, 1994). The human memory and its ability to retain and recall information are dependent on each other. For instance, information is first stored in the Sensory Memory. This is later transferred to the Short-Term Memory and later transferred to the Long-Term Memory.

A successful transfer of information from one memory type to the other can be accomplished if enough time is spent and adequate attention is given, and the information is to rehearse using consolidation processes, (Mayer, 1998). It is important therefore to note that for information to be accurately transferred from one memory to the other, language need to actively involve in the learning processes. Learners should be able to interact with the information in meaningful ways (Schmitt, 2000). They must be able to look for both relationships and differences between the new information and the old. By so doing, a link is created between the two so that the new information can be incorporated into memory (Goodbridge, 2010).

The major concern in this study is to enhance as well as foster vocabularylearning as well as theirshort and long-term retention through the use of the Keyword Strategy. The Keyword

Strategy works in such a way to enable learners to link new information with an already existing one e.g., new to be learnt L2 lexical items are associated to Keyword clues in the Learners' L1.

2.6. Keyword Strategy

The Keyword Strategy is a mnemonic strategy for vocabulary acquisitionand learning that involves the use of ''word clues'' or 'keywords'; which helps the learner to understand a word instead of rote memorization. The Keyword Strategy is a kind of direct, decontextualized acquisition /learning because of its ability to directly act on learning by enhancing and strengthening the acquisition, memorization, recall retrieval and comprehension of learning materials. As a kind of cognitive learning strategy, it uses explicit, conscious and deliberate tools that enable learners to actualize, succeed and monitor their learning. The Keyword Strategy has the potentiality to work in the above direction.

In this study, the Keyword Strategy adds explicitness to vocabulary learning without hindering comprehension abilities. The Keyword Strategy encourages better understanding of the meaning of lexical items and increases vocabulary development.

The Keyword Strategy divides vocabulary into two learning stages. The first stage requires the subjects to associate the spoken/written foreign word with the keyword, an association that is formed quickly because of acoustic similarity. The second stage requires the subjects to form a mental image of the keyword, 'interacting' with the English translation; this stage is comparable to a paired-associate procedure, involving the learning of unrelated English words (Atkinson.1975:821 in Hauptman, 2004).

2.6.1. Characteristics of a Successful Keyword Strategy

Researches in the field have led to the identification of several characteristic features of a successful Keyword strategy use which include the following:

a. Phonetic similarity

The keyword clue should be phonetically similar (not necessarily identical) to the target word in such a way that the learner will be able to form a link between them (Gruneberg &Pascoe, 1996).

b. Uniqueness

The Keyword clue for learning and improving memory should be unique to avoid the possibility of interference with associations.

c. Bizarreness

Although many research results do not show an advantage of bizarreness, yet practitioners of mnemonics generally agree that the more bizarre an image is the better.

d. Sensory Nature

The Keyword clue should appeal to the senses. For most people, the image will be predominantly visual, since visual memory is seen as the strongest by most practitioners from antiquity (e.g. Auctor and Herennium, 1st Century BC) to today (Buzan, 1982), but smells, sounds, movement, etc. should also be included wherever to improve the process of imagination and, therefore, enhance memory.

e. Interactivity

There should be some forms of connections between the words, the keyword associations and the visual (objects, pictures etc) and mental image conjured right from the onset. The connection between these elements brings about interactivity which fosters retention and recall.

f. Simplicity

With Keywords association, the simpler the connection between the keyword and it associated word or picture the better for learning to take place. The lack of simplicity has been a frequent criticism of the Keyword method.

g. Creativity

The Keyword association created for learning language must possess an element of creativity in it. By this, the learner becomes much more involved in the association, thereby increasing the depth of processing. This characteristic enables the students not only to bring to the classroom their creative instincts but also to tap from their natural creativity abilities. It is, therefore, up to the teacher to help them to utilize this by encouraging them to be creative in their designs.

h. Sexual, Vulgar and Naughty

This characteristic of the Keyword has caused a lot of uproar among scholars, particularly with regards to the morality of using vulgar and sexual keyword in the classroom. Even though it has been proposed that in forming their own Keywords for learning, students should not be afraid of making sexual or vulgar associations in as much as such association will help them to remember learned materials easily. However the general recommendation with regards to this is that such vulgar and sexual Keyword associations should not be encouraged in the classroom, but learners can form their own association in this manner so long as it will help them to remember whatever it is they are using it for.

i. Involvement

This has to do with linking memory intimately with conscious experience. It works in such a way that the more strongly the learner experiences something through the keywords association the better the learner will remember it. By involvement therefore, it is expected that the Keyword

should provide some mental images that will be related to the learners' real life experiences (Levin. 1996)

2.6.2. Designing Keyword Clues for Vocabulary Learning: Some BasicIssues

Designing Keyword clues or associations for learning lexical items is indispensable in using the Keyword Strategy. However, there seems to be no concensus as to what constitutesthe best practices in this regard. The contending issue relates to the question of ''who should design the Keyword clues/associations for learning the target lexical items? In subsequent paragraphs arguments to support both are discussed.

Issues of Teacher-Generated versus Students-Created Keyword Clues/Associations

An important area that has been of concern to scholars and that which has been the focus is regarding the issue of whether the teacher should provide the strategy to use or whether the students should be trained to generate the mnemonics independently. The issue of teacher generated versus learner generated Keyword mnemonics for vocabulary learning /acquisition / learning has divided scholars into two conflicting groups.

Research studies have shown that students who may benefit from the use of mnemonic instruction may not be able to construct their own mnemonic strategy effectively. For example, in one such study by Levin (2002), mnemonic instruction was used to teach general education middle school students about 18^{th}, 19^{th}, and 20^{th} century inventions and their corresponding dates. In this study, it was found that the students had difficulty using mnemonic strategies independently; that is, they were unable to effectively apply them and create mnemonics on their own. In such a situation, therefore, it has been suggested that it may be more effective for the teacher to provide the mnemonic strategies to the students (King-Sears, et al., 1992; Scruggs and Mastropieri, 1992).

Further research by Fulk, Mastropieri, and Scruggs (1992); King-Sears, Mercer, and Sindelar (1992); Mastropieri, Scruggs, Levin, Gaffney and McLoone, (1985); McLoone, Scruggs, Mastropieri, and Zucker (1986) and Scruggs and Mastropieri (1992) describe the positive effects of training students with memory problems on how to use mnemonic strategies independently.

In a related study, Mastropieri et al. (1985) and McLoone et al. (1986) successfully trained students with disabilities to use the mnemonic procedures and then to generalize the procedures for learning new vocabulary words. Yet in another related study, Fulk et al. (1992), King-Sears et al., (1992) and Scruggs and Mastropieri (1992) trained students with disabilities to use the strategies across different content areas, including science and social studies. All of these studies demonstrated some positive benefits for training students to use mnemonic strategies independently.

In this study, the researcher adopted the student-generated strategy approach.The three hundred undergraduate ESL subjects were involved in the selection and design of the keyword associations/clues used for learning the MAP lexical items.

2.6.3. Limitations of the Keyword Strategy

Despite the effectiveness of Keyword Strategy in vocabulary and language learning, yet some weaknesses' and limitations have been identified in using it. Higbee, (1994) and Hauptmann, (2004) identify two categories of limitations of the Keyword Strategy as valid and invalid limitations. The valid limitations include among others time constraints, treatment of abstract concepts, issues of learning versus retention, imagery abilities and interference,while the invalid include impracticability of Keyword Strategy, issues of comprehension, Memory overload, Mediators' crutch etc. These are discussed below:

i. Time

The Keyword Strategy is said to be time consuming especially in terms of the longer amount of time spent on connecting/associating words and their visual/imagery. However, with practice, this can be improved upon. Furthermore, to avoid time consumption, the teacher should provide the learners with the Keywords clues and visual images. By so doing, the learners will focus their attention on deriving maximum benefit from the use of the Keyword Strategy.

ii. Issues with Abstract Concepts

Most researches with the Keyword Strategy have been focused on the acquisition and learning of concrete vocabulary items rather than abstract items. In very few cases dealing with abstracts, concrete vocabulary items are used to represent it and then a visual imagery association for it is created. Thus, it is also time consuming because learners have to go an 'extra mile' to select good as well as appropriate concrete vocabulary clues to represent the abstract ideas. The problem here is that these cues may only remind the learner of the abstract vocabulary item but not the ability to recall. Above all, it is often not very easy to select good concrete vocabulary cues to represent abstract ideas.

iii. Learning versus Retention

It has also been noted that with the Keyword Strategy, it is difficult to determine whether it only fosters learning or also enhances retention. To this end, to determine whether it measures retention or learning, for example the amount of remembering and forgetting induced by the

strategy in comparison with and other strategies are measured. This will indicate the amount of what has taken place.

iv. Individual differences in Visual/ Imagery Abilities

Individual differences in visual thinking and imagery abilities have been considered as a weakness associated with the Keyword Strategy. These differences affect success in the use of the strategy. For example learners who have the ability to use their visual thinking and imagery abilities are more likely to succeed in using the strategy, while those who do not may not succeed. The learners who have difficulty in using visualization will require some time to develop their ability through constant practice otherwise; they can resort to verbal mediation.

v. Decoding Interference

With concrete vocabulary, especially words that are apparent synonyms, it is often discovered that one visual image may be used to represent more than one concrete vocabulary. This interferes with the recall of the vocabulary. For example the word *infant* or *baby* could be represented with a picture of a small child.

vi. Impracticality

Mnemonics as memory enhancing strategies have been further criticized as not practical especially in its early years during which researches were mainly conducted in the laboratory. However, studies in the use of Mnemonics in general and the Keyword Strategy in particular have moved out of the laboratory and into the classroom proper and hence its practicability (Hauptmann, 2004, Gaul, 2004; Sagarra &Alba, 2006). These and many other studies conducted in the classroom have changed our perception of mnemonics as impractical.

vii. Issues with Understanding

The Keyword Strategy has also been criticized on basis that it only facilitates memorization but not comprehension. This limitation is only true because mnemonics in general have always been known to facilitate remembering and not understanding. Therefore, it is valid in itself to the extent that it is used for what it meant to achieve.

viii. The Memory's Overall Load

The Keyword Strategy has also been criticized on the ground that it increases the amount of materials to be remembered. A typical Keyword Strategy will require the learners remembering not only the words but also their Keyword clues and visual associations. This, therefore, requires extra effort. However, these extra efforts are needed only at the initial stage of using the strategy. This means that through constant practice the time and the efforts gradually decrease as learners master the use of Keyword Strategy.

ix. The Mediator is a Crutch

The Keyword Strategy has also been criticized on the basis that a person can be so involved in or dependent on the use of mnemonics /Keyword to such an extent that a person becomes so addicted and uses it as a memory crutch. Using keyword/mnemonics as memory crutch should not be seen as a limitation in itself provided it aids remembering.

These limitations notwithstanding, research evidences have shown that the Keyword Strategy is an effective tool for vocabulary learning. It is the concern of the present study to investigate the effect of Keyword Strategy on vocabulary learning.

2.7. Second Language Learning Strategy

The history of the strategy concept goes back to the 1970s where research studies by Rubin (1975), Stern (1975), Hosenfeld (1976), and Naiman, Frohlich, Stern and Todesco (1978) first brought it to wide attention. This trend continued into the 1980s with many more scholarly

researches from O'Malley, Chamot, Stewner-Manzares, Kupper and Russo, (1985); Wenden and Rubin, (1987) and further into the 1990s with the works of Cohen, (1998); O' Malley and Chamot, (1990); Oxford, (1990), (1996); Wenden (1991) and Ellis (1994) actively pursuing researches in language learning strategy. In this millennium, the interest in language learning strategies is still very vibrant, as evidenced by its ongoing presence in the literature and as seen in the works of Cohen and Macaro (2007); Cohen (2011); Griffiths (2008), and Oxford (2001).

The Strategy concept can be said to be far from uncontroversial as it has attracted vigorous debate on a number of levels. At the concept level, it has been described as ''elusive'' (Wenden and Rubin, 1987:7) or ''fuzzy'' (Ellis, 1994: 529). These controversies have been further complicated by some scholars' use of conflicting terminologies to describe the term ''strategies'', such as ''learning behaviors'' (Politzer and McGroarty, 1985; Wesche, and Paribakht1996), ''tactics'' (Seliger, 1984), and ''techniques'' (Stern, 1992).

The first attempt at a definition of strategy was that provided by Rubin, (1975), who describes strategy as the techniques or devices which learners often use to acquire knowledge. It has also been described as procedures that facilitate language acquisition, retention, retrieval and performance (O'Malley et al 1985). Strategies have further been described as those special thoughts or behaviours that help learners to learn, comprehend and retain new information (O'Malley and Chamot (1990).

A well-known definition is that which refers to strategies as specific actions taken by learners to make learning easier, faster, more enjoyable, more self-directed, more effective and more transferable to new situations (Oxford, 1990). Learning strategies can also been seen as the ways by which learners accumulate new second language (L2) rules and how they automate the

existing ones (Ellis, 1985). They are generally considered to be conscious or at least potentially conscious and, therefore, open to inspection (Rubin, 1987:23; Oxford, 1990; Ellis, 1994:712; and Mayer 1998:21).

To date, the four basic questions that have guided research on learning strategy, as provided by Wenden and Rubin, (1987) are:

1. What do L2 learners do to learn a Second Language?
2. How do they manage and self-direct these efforts?
3. What do they know about aspects of their L2 learning process?
4. How can their learning skills be refined and developed?

In relation to this study, a strategy refers to all conscious, intentional and planned action or attempts made by learners which facilitate their internalization of lexical items. In other words, a strategy is considered as the techniques use by learners. It is, therefore, learner centered.

2.7.1. Strategy Classification

Generally speaking, the researches on language acquisition and learning strategies have been inspired by two disciplines: Cognitive psychology and Second Language Acquisition. However, the influences of the two disciplines have been independent of one another.

a. **Cognitive Psychology and Learning Strategy Classification**

In the field of Cognitive psychology, the research on learning strategy was experimental and oriented towards training learners to acquire strategies. From the cognitive psychologist point of view, the basic research question is why are some individuals very effective in learning while others are not? This question was answered in their study of expert-novice learner where they

discovered that the expert groups have special ways of processing information, which they thought could be learnt by others.

Anderson (1985) contributed immensely to the definition and classification of learning strategies in this field. He identifies the three stages of skill acquisition: the cognitive stage which is described as the acquisition of declarative knowledge; the associative stage is that in which the declarative knowledge gradually takes a procedural form; and, last but not the least, the autonomous stage is the stage through which practice performance becomes improved, refined and automated (Anderson ibid).

Building on the work of Anderson (1985), O'Malley and Chamot (1990) further elaborated on the two kinds of knowledge: declarative and procedural. Based on their elaboration, it is understood that the declarative knowledge is factual or what the learner knows about a domain or in another words it is the information about learning strategies; while the procedural knowledge is understood as the ability to understand and generate language or apply knowledge of rules to solve a problem unconsciously. In order words, it is the automatic use and application of knowledge. These two kinds of knowledge are used at different stages or sequence of skill learning: the cognitive, the associative and the autonomous stages. At the cognitive stage, learners know that there are such things as learning strategies or be aware that they are using them in different tasks. The associative stage is a transitional period when learners start to use learning strategies automatically without conscious application. The last stage i.e., the autonomous is where the learners may use and apply strategies automatically.

In another similar study, O'Malley and Chamot (1990) identified three primary categories of learning strategies, which were drawn from 'think-alouds' and interview with beginners and

advanced learners namely: the Meta cognitive, the Cognitive and the Social /affective.Metacognitive strategies are indirect and involve contemplating learning process, such as planning, monitoring, analyzing and assessing learning. In contrast, cognitive strategies are direct and involve elements of mental processing in learning, such as manipulation and transformation of the learning skills or materials. They include strategies such as rehearsal, organization, inference, summarizing, deducing, imagery, transfer and elaboration. Social strategies are the ways in which learners cooperate or interact with other people in the learning process such as asking questions about language elements taught and asking for clarification from teachers or peers. On the other hand, effective strategies refer to the control of emotions or negative thoughts to learning in order to continue study. Examples are self –talk and self-encouragement (O'Malley and Chamot, 1990).

Like other Cognitive theorists, Oxford's (1990; 2001) classification consisted of two main categories: direct and indirect strategies. These two categories were further divided into six sub categories i.e., three per each main category. For instance, the three sub categories of the direct strategies include: memory strategies, cognitive strategies and compensation strategies;while the three sub categories for the indirect strategies include: metacognitive strategies, affective strategies and social strategies. In the direct strategy category, memory strategies are those that relate to how students remember information by making connections between it. They are specific actions used by learners to create mental links that will allow new information, mostly vocabulary, to enter and remain in long-term memory. Some of these specific actions include: planning, organizing, selecting resources, and evaluating. In contrast, the affective strategies, a sub category within the indirect strategies, are concerned with the students' feelings which help them to control their emotions, motivations and attitudes about learning English. For example,

taking risks, lowering anxiety, rewarding oneself for success etc. The social strategies, asub category of the indirect strategies, are those involved with learning from or/ and with others and interest in culturewhich are manifested in the following specifc actions, such as,asking for cooperation, asking questions, empathizing with others, showing interest in learning about the culture of English-speaking countries etc (Oxford, 1990; 2001).

Furthermore unlike O'Malley and Chamot's (1990) classification of direct strategies, Oxford (1990; 2001) added compensation strategies as part of the direct strategies and also separates memory strategies from cognitive strategies because of herbelieve that the memory strategy is not simply memorization but deeper processing and use of language **(**Lang and Oxford, 2003). Oxford (1990) also separated the social/affective strategies into two categories which are in contrast to that of O'Malley and Chamot (1990). Her emphasis on the social and the affective may have been derived from Vygotsky's (1978) social-cognitive psychology, known also as social constructivism. Vygotsky (1978), also a renowned cognitive linguist, is of the view that a learner's cognitive system is a result of social interaction with the teacher or with more advanced students who provide assistance, which enables the learner to progressively become independent in his learning.

Based on the discussions above, the Keyword Strategy used in this study is a memory strategy which is a subcategory under the direct strategies for vocabulary learning.As a memory strategy, it is designed to facilitate the learning and retentionand recall of information in short and long-term memories.

b. Second Language Acquisition and Learning Strategy Classification

In the field of Second Language Acquisition, however, the research on learning strategy was descriptive in nature, i.e. data were collected from interviews, class observations and diaries. The first attempts at this were those made by Rubin, (1975) whose descriptions were based on ‘’what a good learner does’’ or the strategies used by good learners. They described, classified and reported the activities and disposition of the good learner. The findings from their study indicated that success in language learning was associated with the use of learning strategies.

Later on Rubin, (1987) and Naiman, Frohlich, Stern and Todesco, (1978) built on this work and proposed classification schemes of language learning strategies, which though, have been criticized as unsystematic on the basis that their analysis and categorization were considered subjective.

Despite the criticisms, Rubin, (1987) recognized two main strategies used by the good learner: direct and indirect strategies. The differences between the two lie in the manner in which they contribute to learning.

The direct strategies are those that directly contribute to language learning, e.g., learning strategies. In contrast, indirect strategies only contribute to language learning indirectly, e.g., communication strategies and social strategies. The learning strategies have been further divided into Meta cognitive and cognitive strategies (Weden and Rubin, 1987:23). The cognitive strategies involve analysis, translating and synthesis of learning materials, while meta cognitive learning strategies concerns higher cognitive processes, control and self-management through planning, monitoring and evaluating (Wenden and Rubin, 1987:23).

The cognitive learning strategies are further classified into six sub categories:

i. Clarification/Verification. This refers to those strategies learners use to verify or clarify their understanding of new language.

ii. Guessing/Inductive Inference. These are the strategies used to obtain new language knowledge, using the concept and knowledge that learners already have.

iii. Deductive Reasoning. This is a problem-solving strategy. Learners use the general rules to approach the second language (L2)

iv. Practice. This refers to strategies which contribute to the storage and retrieval of language while focusing on the accuracy of usage.

v. Memorization. This is the strategy used for storing target language knowledge.

vi. Monitoring. This refers to the strategies in which learners notice errors and correct them.

The Communication strategy stresses the effects of practice and focuses on the process of taking part in a conversation (Wenden and Rubin, 1987:26). Finally, social strategies are the activities that the learners engaged in that afford them with the opportunities to be exposed to the target language (Wenden and Rubin 1987:27). They are different from the communication strategies in the sense that social strategies do not provide opportunities to practice the knowledge learnt (Wenden and Rubin 1987:27). The first investigation of vocabulary strategies as a part of Second language learning strategies was carried out by Stoffer (1995).

In a study designed to measure vocabulary learning strategies (VOLS1 Vocabulary Learning Strategy Inventory), Stoffer (1995) discovered that the 53 VOLS1 items created nine categories of vocabulary learning strategies amongst which are the memory strategies. Gu and Johnson (1996) also proposed a taxonomy amongst which is also the memory strategy. In another study, Nation (2001) provided a general framework for understanding vocabulary strategies which consisted of three processes: planning vocabulary, sources of vocabulary knowledge and

learning processes. Planning has to do with choosing the words to study, determining vocabulary learning goals and focusing on achieving the goals; sources involves discovering the words by getting information about the words, as well as by way of analyzing the word parts through affixes, checking words from context and strengthening form and meaning connections as well as working out the meaning of a word; and processes involves establishing knowledge by ways of making it easier to remember and making it available for use through noticing, retrieving and generation.

Schmitt's (1997:204), whose classification is regarded as the most extensive, divided vocabulary acquisition / learning strategies into two groups: the first group consisted of four of Oxford's (1990) six categories: the social, the memory, the cognitive and the metacognitive. However, Schmitt (1997) introduces a fifth category referred to as the determination strategies-which are those used by learners "when faced with discovering a new word's meaning without recourse to another person's expertise" (p.205). To some extent, this fifth category shares some resemblance with Oxford's compensation strategies. The second group which consists of discovery and consolidation strategies was borrowed from Nation (1990; 2001). The discovery strategies consist of those processes used to determine the meaning of new words, while the consolidation strategies are the processes used for remembering the words and their meanings for future use. Consolidation strategies are further divided into the shallow and the deep. Shallow strategies are quicker but lead to less retention; examples include guessing from context and repeating a word several times to try to fix it in the memory,while deep strategies take more time but lead to greater retention and ease of retrieval from memory. They include, for instance, making extensive use of dictionaries or building up deep knowledge through word associations and revising to ensure retention.

Within the Second language learning/ acquisition perspectives, the Keyword Strategy as used in the present study falls under memorization and practice sub categories of Wenden and Rubin's, (1987) cognitive learning strategy.

2.7.2. Kinds of Vocabulary Learning Strategies

a. Word Card Strategies

The word card vocabulary learning strategy involves learning vocabulary from word cards. In this strategy, lexical items are written on one side of a small card and their translation on the other side. The learner goes through a set of cards and tries to recall its meaning (Nation, 2001). This strategy is a form of decontextualized vocabulary learning strategy, which means that there is no context to help learners understand the meaning and usage of the words. The importance of this strategy is that it helps them to grasp the written form of the word, the meaning of the word and make connection between the form and the meaning. It is also the easiest way for learners to memorize the meaning of a lexical item. However, it has been noted that this strategy can be very boring.

b. Repetition Strategy

Therepetition strategy, which is derived from the behaviorists' theory of language learningis based on the behaviorists believe that language acquisition is the result of habit formation (Lightbown and Spada 2006). They used the term ''habits'' to explain all kinds of behavior found in language acquisition (Ellis, 1997:31). In language learning, habits are formed through the connection between the target linguistic input and the learner. The connection begins when the learner receives the linguistic input from the target language, no matter whether it is verbal or non-verbal. The connection becomes stronger through practice, then a habit forms through this process and the language learning process is regarded as a habit-formation process. The quality

and quantity of language input, which learners hear from the environment, can help them to form the habit and have an effect on their success in second language acquisition (Lightbown and Spada, 2006). The repetition strategy, therefore, involves learning the vocabulary items through hearing the word repeatedly. The more frequently the word is heard, the more deeply it will impress the learner and the learner will acquire the word more easily.

c. Root Analysis/Word Formation

The root analysis vocabulary strategy is an example of an explicit strategy used by learners. Many of the words in the English language are derived from Latin or Greek roots. They either contain a "core" root (the primary component of the word) or use affixes (prefixes, suffixes, the derivational and the inflectional) that hold meaning.

In English, therefore, some words exist as whole words while some have complex internal structures in that they can be divided into chunks, which they share with other words (Aitchison, 2003). Nation (2001) states that most of the content words in English can change form by adding prefixes and or suffixes. In the English language, there are three important ways of forming new words: affixation, compounding and conversion.

Affixation consists of suffixation and prefixation. The use of suffixes is the commonest strategy of acquiring and learning new words in English. Suffixes are normally attached to whole words or phrases, not to bits of words. They are also mostly added to major word classes, such as nouns, adjectives or verbs in order to create another noun, adjective or verb. It should also be noted that each suffix has its own characteristics. Unlike suffixes, prefixes are attached to the beginning of words and only a few can change word classes.

Compounding is also an important way of creating new words, e.g. aeroplane. The new compound word must convey some further information.

A third way of creating a new word is conversion, which involves the conversion of a word from one word class to the other. The most common conversion is from noun to verb, e.g. the word 'mail,' which is a noun, can be used a as verb in another context as in ''I will mail you later.'' Here ''mail'' means sending an e-mail. To understand the conversion, the context is always needed (Aitchison, 2003).

Using this strategy, the learner is able to acquire vocabulary knowledge by analysing words into different categories based on their formation. Learners can guess the meaning of the word based on its affixations by breaking down the unfamiliar word into their prefixes, suffixes and roots. Furthermore, the use of affixation is also a useful way to master vocabulary.

d. Word Map

The word map is an excellent strategy for vocabulary learning. It is an explicit, deliberate and decontextualized strategy used by learners to increase their vocabulary knowledge. Generally using this strategy, learners create a graphic organizer (maps) for the lexical items. The organizer consists of four parts: vocabulary word, classification, qualities and examples. At the top or centre of the organizer is the vocabulary word. Branching off of the word are three categories: classification (what class or group does the word belong to), qualities (what is the word like) and examples. Using prior knowledge the child fills in each of these three categories. Word maps help learners to develop complete understandings of words.

e. Keyword Strategy

The Keyword Strategy is a mnemonic strategy for vocabulary learning. It creates visual and or mental imagery which facilitates retention. The study of the effect of Keyword Strategy on lexico-semantic learning, comprehension and retention is the focus of this study.

2.7.3. Vocabulary Learning Strategy: Issues in Strategy Instruction and Use

The issues of strategy instruction and strategyuse in language learning have been central to the discussions of vocabulary learning.The argument often concerns determining the kind of strategy instruction and use that should be the focus of vocabulary teaching and learning.The two main points of view in this regard are examined below:

a. **Incidental versus intentional strategy debate**

Theoretically, the basic assumption of the Incidental and Intentional vocabulary acquisition / learning strategy are derived from the implicit-explicit theory of learning in the field of Cognitive psychology. The differences in the implicit-explicit dichotomy lie in the absence or presence of ‘’conscious’’ operation in learning. Therefore, by Implicit learning, it is the acquisition of knowledge about the underlying structure of a complex stimulus environment by a process which takes place naturally, simply and without conscious operation’’, while explicit learning is acquisition which is to be characterized by ‘’more conscious operations where the individual makes and tests hypotheses in a search for structure (Ellis, 1994:1). In vocabulary learning, the implicit/explicit learning dichotomy superficially corresponds to the incidental and intentional vocabulary learning strategies dichotomies often discussed in second language pedagogy.

The incidental vocabulary acquisition or learning is generally defined as the ‘’ acquisition /learning of vocabulary as the by-product of any activity not explicitly geared to vocabulary learning’’. In contrast, intentional vocabulary learning is any activity geared at committing lexical information to memory (Hulstijn, 2001:271).It involves the learning of lexical items through guessing from the context (Nation, 2001). In other word it involves the learning/acquisition of vocabulary without specific intention to focus on it. As such, learning

takes place subconsciously as one is engaged in other language activities, such as listening (i.e., listening to stories, films, television or the radio); speaking (i.e., taking part in conversation) reading (i.e., intensive and extensive reading) and writing (i.e., writing for specific purposes and readers). In relative terms, there is the absence of ''conscious intention'' as at the time of learning/ acquisition to learning vocabulary, hence no deliberate planning for vocabulary learning occurs (Meara, 1998 and Nation, 2001).

Researchers in support of the incidental approach have generally agreed that it is the most important source of vocabulary learning and also the most widely used in Second language vocabulary learning. Huckin and Coady, (1999) have acknowledged that except for the first few thousand common words, Second language vocabulary are predominantly acquired or learnt incidentally. The basic technique in incidental vocabulary learning is the use of contextual clues as a source of lexical comprehension. It works on the principle that the more often a word occurs in the context the more likely it can be guessed and learnt, because the context provides the clues for word guessing (Nation, 2001). Therefore, the more the clues there are, the easier the guessing will be. Other crucial factors for successful guessing of vocabulary from context are the learners' vocabulary size, the topical knowledge about the context, etc.

Nation, (2001) has reported the efficiency of learning from context in his analysis of twenty studies. The results from this study show that fifteen percent of the words were learnt from guessing in context in which the unknown words make up three percent of the running words. In another development, Monsell, (1985) suggested three important aspects of vocabulary acquisition/ learning in context: 1) it obliges learners to develop strategies like anticipating and inferring, which are very beneficial as learning progresses because they instill an attitude of self-reliance that characterizes proficiency; 2) By meeting and using words in context, it shows that

the words are actually used in discourse for the purpose of communication; 3) it contributes to learner's autonomy and facilitates the transfer of knowledge (Monsell, 1985).

The effectiveness of the contextualized / indirect strategy for vocabulary acquisition/ learning in contrast to the decontextualized/ direct strategy has been widely debated. The debate dwells on the relative superiority of the two approaches to acquisition/learning vocabulary, .i.e. acquiring/learning words in context vs. acquiring/learning words out of context. Oxford and Scarcella, (1994) observe that while decontextualized learning (word lists) may help students memorize vocabulary for tests, they are likely to rapidly forget words memorized from lists. McCarthy, (1990) argues that a word learned in a meaningful context is best assimilated and remembered. Thus, Nagy, Herman and Anderson, (1985) Nation, (2001) and Meara, (1998) advocate for learning vocabulary from meaning focused input, such as from listening and reading, speaking and writing.

However, some studies such as those of Gershman (1970); Wind and Davidson (1969) and Morgan and Bailey (1943) Tudor and Hafiz, (1989); in Hulstijn (1992); have failed to produce findings favouring context-dependent vocabulary learning. In recent times, there has been an increasing advocacy for explicitly teaching words out of context at an early stage of language acquisition, with more context-based vocabulary learning taking place at the later stages of language development (Coady, 1997b; Meara, 1997 and Nation and Newton, 1997). In a comprehensive review of research on incidental vocabulary learning in mostly L1 contexts, Krashen (1989) concludes that incidental vocabulary learning or "acquisition" achieves better results than intentional vocabulary learning.

In other situations, research studies that have compared incidental learning (contextualized/ implicit) with intentional (deliberate or decontextualized) vocabulary learning have characteristically showed that the decontextualized type is more effective (Nation and Meara, 2002**).** This is not surprising, as it encourages the noticing and giving attention to language learning, which, in the long run, generally makes that learning more effective, more focused and more goal-directed (Schmitt, 1990; Elgort, 2007). It is believed that intentional (deliberate/decontextualized) vocabulary acquisition/ learning can result in a very quick (and long lasting) expansion of vocabulary size, which then needs to be consolidated and enriched through meaning focused input and output and fluency development (Elgort, 2007**).**

Intentional (deliberate/decontextualized) vocabulary strategies are ways of learning in which lessons on vocabulary learning are consciously planned with particular focus on vocabulary in its entirety. It can result in both explicit and implicit knowledge which are needed for normal language use (Elgort, 2007). In intentional/deliberate vocabulary strategy, there is the presence of ‘’conscious intentions’’ towards vocabulary mastery.

Research studies by Atkinson and Raugh (1975); Pressley and Levin (1978); Pressley, Levin and McCormick (1980); Cohen and Aphek (1981) and O’Malley, Chamot, Stewner-Manzares, Kupper and Russo (1985) have shown that of all the decontextualized lexical/ vocabulary acquisition/learning strategies, the mnemonics have been more effective than the memorization strategies involving only shallow processing, such as oral rote repetition. Craik and Lockhart (1972) have been particularly influential in this direction. In their study, which sought to show how the processing of words at different level is crucial to learning, the experiments ask learners of a word to consider its formal shape, its rhyming words, its synonyms, the semantic field in

which it belong, and the kinds of sentence patterns into which it fits. They concluded that the more processes involved in the learning of a word, the superior the retention and recall.

Recent developments in the attempts by researchers to theorize about vocabulary acquisition/learning strategies have led to the emergence, through research findings, of yet a third theory, which combines incidental (contextualized or implicit) reading, writing, speaking and listening tasks and vocabulary learning with intentional (decontextualized or explicit) vocabulary learning. Researchers like Paribakht and Wesche (1997), and Zimmerman (1997) found that learning that involves both contextual reading and explicit vocabulary instruction results in much greater gains in vocabulary knowledge than does contextualized learning through reading alone.

The focus of the present study is not on vocabulary strategy instruction which is more teacher centred,rather the study is about what the learners do with the strategy to facilitate vocabulary learning. In essence, no instruction on strategy was given during the study. Nevertheless, by using the Keyword Strategy for lexico-semantic learning, comprehensionand retention on the one hand, the learners are engaged in an intentional, deliberate and decontextualized activity. The learners are consciously applying the Keyword Strategyto internalize as well as deeply process the forms and meanings of the lexical items; while on the other hand, at the comprehension level, the learners are engaged in incidental and contextualized activity which enable further semantic deep processing through the use of the cloze comprehension passages. Therefore, the use of the two contending approaches simultaneously is very significant for the conduct of this study. The deliberate and decontextualized approach aids learning, recognition and recall but does not often provide knowledge of grammar, collocation, associations, references and constraints on the use of words. So the inclusion of the contextualized activity that is the cloze comprehension passages

complements for this deficiency. The learners further show their degree of internalization, retention and comprehension of the lexical items by completing the 'cloze' in passages.

2.8. Review of Empirical Studies

This section reviews empirical evidences related to vocabulary learning and the impact of instruction, vocabularyretention studies, vocabulary and lexico-semanticsstudies, Keyword Strategystudies and vocabulary learning, andlastly studiesof gender differences in vocabulary learning.

2.8.1. Vocabulary Learning:the Impact of Instruction

Researches in Second LanguageVocabulary (SLV) learning have investigated the impactof vocabulary instruction on vocabularydevelopment. Vocabulary instruction studies are generally concerned with investigating how the teaching of words and vocabulary learning strategies to learners through direct (explicit) or indirect (implicit) instruction impact vocabulary acquisition and learning. A large number of such studies have been conducted in varieties of contexts with learners from different language backgrounds and abilities.By exploring theses studies, an understanding of the milestones in the area of vocabulary learningas well as theposition of the present study in relation to these previous researches will be better enhanced.In this review, a number of such studies have been explored as presented below:

Heinrich, Ehri and Locke, (2018) compares the effects of two kinds of vocabulary instruction on reading skill of adult struggling readers. The learners, who were matched for language background and reading levels, were randomly assigned to the morpho-phonemic analysis teaching or the traditional whole teaching to receive eight (8) hours of tutoring on forty academic words embedded within a civic curriculum. The result of the study indicated that both groups made comparable gain in learning the target words, but the morpho-phonemic group

showed greater gain in reading unfamiliar words on standardised test of word reading, word attack and word recognition.

In another study, Woodward, (2018) examines the effects of Frontloading and Chunking method of instruction on vocabulary retention of Second language learners in two different classes in a middle school in Baltimore, Maryland USA. The study sought to determine the method that will facilitate more vocabulary retention among students. In the study, a post-test measure of academic achievement on vocabulary, which was developed by the researcher, was used to measure vocabulary retention after the two vocabulary instruction treatment. The result of the study showed a stronger vocabulary retention with students' that received the chunking instruction.

Oladunjoye, (2017) examines the effect of film and video on vocabulary development of twenty (20) Senior Secondary 2 students in a city Nigeria. The participants were randomly selected into control and experimental groups. At pre-test, a 20-item vocabulary matching test was conducted. The experimental group was shown a Nigerian home video titled '' Power of Justice which exposed them to register of law, while the control group was taught using the traditional method of rote–learning. The results of the post-test revealed that the participants in the experimental group out performed those in the control group in terms of their vocabulary development

In a quasi-experimental which sought to determine the differences in the students' vocabulary size, Subon, (2016) examines the effects of Direct Vocabulary Instruction (DVI) using contextual word families for two and a half months on vocabulary acquisition. The data, which were collected from pre and post-tests in a normal classroom using Laufer and Nation's (1999)

Production vocabulary level test (PVLT) at 2000-word level, were computed using paired sample t-test. It was found that there was a statically significant differences between learners' vocabulary size in the pre-test and post-test after direct instructions using the contextual word families.

Mashhadi and Jamalifar, (2015) compare the effects of visual cues versus textual input enhancement on vocabulary learning of ninety (90) Iranian intermediate EFL learners using a quasi-experimental design. The researchers sought to determine which of the two will have positive impact on vocabulary learning. Following a pre-test, the samples were randomly assigned to two experimental groups: visual cue and textual input enhancement and a control group. A post-test was administered for all groups after the treatment and the data was analysed using paired t-test and 0ne-way ANOVA. The result of the study indicated that visual cues have a significant impact on vocabulary learning of Iranian intermediate EFL learners.

Using 74 Taiwanese university students as samples, Wang, Teng and Chen (2015) conduct a quasi-experimental study of the effect of iPad App instruction on students' English vocabulary acquisition. The findings of this study showed that the use of iPad App created significant progress in students‟ English vocabulary acquisition. As a result the experimental group, that learned English vocabulary through the iPad instruction performed better in the English posttest than the control group.

Fariss, (2013) investigates the effects of small group vocabulary instruction on Second grade students' expressive vocabularies over a period of eight weeks. In the experimental design, three treatment groups were compared using a pre-test and post-test subject variable methodology. In the study, a small group instructional intervention was administered to a treatment group in addition to the whole class read-aloud based vocabulary instruction that the alternative treatment

group received. The outcome of the study indicates that small group vocabulary instruction lead to greater gains in second grade students' expressive use as well as retention of more target words than did read-louds based instruction and no instruction.

Obiezu, (2012) investigates the effects of manual games on achievement and motivation in English vocabulary using 203 JSSII. The students, who were selected using purposive and simple random sampling, were divided into two intact groups consisting of the experimental group and the control group. The experimental group were taught using games while the control group were taught the same content using the direct /explicit method of vocabulary. Data was analysed using analysis of variance (ANCOVA). The result of the analysis showed that the students taught with games performed better than those taught with the conventional method. On gender, the study revealed no significant differences in achievement between males and female.

Muncy, (2011) investigates the use of 'text talk' during read-alouds to increase the receptive vocabulary of four one (41) participants who were divided into two groups in the ratio 20:21. Each group received instruction on two different sets of target vocabulary words, three in each book. A pre-test and post-test patterned after the Peabody Picture vocabulary test was administered. The result of the test revealed that students made significant progress learning words when 'text talk' was used. However, the learners who did not receive direct instruction on target words were unable to identify meanings of words in the post-test. It was concluded that using the text talk as a strategy increase receptive vocabulary of learners.

In a study, Bowers and Kirby, (2010), investigate the effect of instruction on morphological word structure on vocabulary knowledge. The samples consists of four Grades 4 and 5 classes that were randomly assigned to treatment and control conditions. Using hierarchical regression analysis, the result of the study shows significant instructional effects on morphological analysis

and vocabulary with words that were taught directly and novel words built on bases that were taught in the context of other derivations, but not for words within untaught bases.

In a study to introduce and develop supplementary English material for vocabulary instruction, DeWitt (2010) provides two categories of learners (31, disabled and 72 nondisabled) with memory-enhancing strategies for practicing vocabulary after four weeks of vocabulary instruction in five inclusive English classrooms. Using pre and post test for data collection, in the overall, the study revealed that students' with disabilities performed significantly better on the delayed cumulative posttest. While some non disabled students in the mnemonic condition performed descriptively higher on delayed cumulative posttest than others.

In another study, Nadarajan, (2009) investigates the effect of instructional options and classroom context on L2 learners' vocabulary development over a semester using 129 subjects as samples for the study. The samples, who were drawn from six academic writing classrooms, were grouped into L1 only, L1 and L2, and L2 only respectively. In the study, three classes out of the six were taught specific set of words in context (implicit) while the other three were taught specific set of words directly(explicit). Using a pre-test and post-test design to measure gains in L2 learners' vocabulary knowledge, the results indicated that the vocabulary gains for both implicit (control) and explicit (treatment) instructional context were not very different though the subjects in the implicit instructional group learned slightly more words compared to the explicit instructional group.

Using questionnaires, semi structured interviews and think-aloud protocols for data collection, Lin, (2008) explores adult vocabulary learning processes and use of vocabulary strategies among forty nine (49) individuals. The study revealed that participants used a variety of vocabulary learning strategies to learn vocabulary .It was concluded that well-organized and planned

learning strategy training should be provided to language learners in order to facilitate effective use of strategies

Yek, (2006) studies the effect of memory enhancing vocabulary learning strategy instruction (MEVLSI) on vocabulary learning among 40 Chinese students for a period of two weeks. The MEVLS consists of explicit instruction on sound, word grouping, syllabication, back drill pronunciation, Keyword and sentence plus definition explanation methods. During the two - week study, the teacher taught the control group with the traditional vocabulary teaching method, while the experimental group was instructed by using MEVLSI. It was concluded that MEVLSI facilitated participants' vocabulary acquisition.

In their study, Cohen and Byrnes, (2007) compare the effects of direct word learning strategy with traditional definitional approach with 12 bilingual and monolingual learners in a Third Grade classroom for a period of four (4) consecutive weeks. In the study, instruction using either of the approach was limited to six (6) words each. The findings from the study show that more targeted words were used in oral and written communication using the direct word learning strategies.

Silverman, (2007) compares the effects of contextual, analytic and anchored instructions on vocabulary learning of ninety four (94) children. The English as Native Language kindergarten children were taught by their classroom teachers during story book reading using the three instruction types for six (6) weeks. Of the ninety four (94) children, fifty (50) were later tested when they were in First Grade. It was discovered that both the analytic and the anchored methods of vocabulary instruction were significantly more effective than the contextual method at promoting children's learning of words targeted for instruction.

Using fifth grade English Os and ELs as samples, Carlos et al (2004) examine the effects of teaching academic vocabulary and strategies for inferring words meanings such as context, morphology and knowledge of cognates. In the study, the instruction, which focused on 10 to 12 target words weekly and involves repeated exposure and consistent practice using the strategies, lasted for 30 to 45 minutes a day for a period of 15 weeks. It was discovered that the ELs and EOs showed similar gains in knowledge of taught words and also demonstrated a small significant gain in reading comprehension.

In a study, Issariya, (2004) investigates the effect of training in ‘Dictionary work’, 'Keyword strategy', 'Semantic context', 'Grouping word families' and 'Semantic mapping' on sixty nine mixed ability second, third and fourth year Thai university students in a normal heterogeneous L2 classroom situation. Using pre-and posttests of vocabulary learning ability, think-aloud protocols and semi-structured interviews, one of the findings of the study showed that subjects from the experimental group significantly outperformed subjects from the control group in their ability to learn words.

Further reasearch evidences of the effect of vocabulary instruction as well as strategy insruction on vocabualry learning, acquisition and development are found in the works of Proctor et al., (2005); Zhang and Schumm, (2000);Avila & Sadoski (1996), and Collins, (2004). It is worth noting that the study of the effect of vocabulary instruction (direct/indirect/explicit /implicit) on lexical learning is an aspect to be reckon with in Second language learning and it is likely to remain very productive and relevant for a very long time since it provides insight into how vocabulary learning takes place.

Research evidences from all the studies examined above point to the effectiveness of vocabulary instruction on word learning. A common feature in these studies is the use of experimental and

quasi-experimental research design which entails providing a treatmentcondition or intervention to one ofthe twogroups (experimental groupand control group) in a normal classroom situation as seen in studies byWoodward,(2018); Oladunjoye, (2017;Subon, (2016); Mashhadi & Jamalifar, (2015); Wang, Teng & Cheng, (2015)Fariss, (2013); Obiezu, (2012); Muncy, (2011);Bowers and Kirby, (2010); Cohen and Byrnes, (2007)and others. In line with most of the studies reviewed, the present study also employs the quasi-experimental research design.

Theuse of either direct/explicit or indirect/ implicit'teaching'of targetedvocabulary items and or 'teaching' thestrategies for learning the items is also another common feature of these studies. For instance while,Heinrich, Ehri and Locke (2018); Fariss, (2013); Muncy,(2011);Silvermann, (2007); and Carlos, et al (2004) and others reported the effectiveness of the indirect/implicit instruction; however in contrast,Woodward, (2018); Subon, (2016); Mashhadi & Jamalifar, (2015); Mohammed (2009); Min, (2008) ; Wang, Teng & Cheng,(2015); Bowers & Kirby, (2010);Dewitt, (2010); Yek, (2006); Issariya,(2004) and others reported the effectiveness of the direct/explicit vocabulary instruction or strategy instruction.However, Nadarajan, (2009); used both implicit and explicit instruction in his studyand reported the effectiveness of the implicit/ indirect over the explicit. Hermann (2003), also reported the effectiveness of indirect teaching through reading and contextual clues.

In contrast to the above, it should be noted that from the point of view of the present study, the emphasis on investigating 'how' the teaching of word items or teaching of strategies impact vocabulary learning and development is outside the scope of this study. This is because 'teaching' vocabulary items using whatever method to learners or 'teaching' them the strategies for learning such items are teacher-centred processes investigated under language pedagogy. In other words, 'teaching' focuses on what teachers do to help learners to succeed. The aim and

objective of such 'instruction' in vocabulary endeavor is often to determine the approach that 'best' facilitate and enhance word learning. Eventhough the relevance as well as the importance of research on vocabulary instruction cannot be compromised, yet the present study is about learner-centred approach to vocabulary learning. It investigates what learners do to facilitate vocabulary learning rather what the teachers do. The study investigates the use of Keyword Strategy by ESL learners for vocabulary learning. Through out this study, therefore, no any form of instruction is given eitherdirect or indirect.

Finally, it is evident that most of the studies that investigated vocabulary instruction examined above were conducted in English as Native Language (ENL) and English as Foreign Language (EFL) context. In contrast, however, the present study is situated in English as Second Language (ESL) context. The differences in vocabulary learning between ESL,ENL, and EFL context is an important factor that could rarely be ignored.

2.8.2.VocabularyRetention: An Overview ofEmpirical Studies

A large number of researchers have investigated vocabulary retention (short and long-term retention), and retrieval/recall (immediate and delayed recall/retrieval)in a number of contexts (ENL. EFLand ESL),using a number of approaches (experimental, quasi-experimental and comparative). These studies have greatly improve our understanding of the intricacies of vocabulary learning, retention, and retrieve/recall. This study is also concern with vocabulary retention, as such, a review of studies of this nature is important. In the following paragraphs, a number of these studies are examined.

In a recent study, Fathi and Sarkhosh, (2019) investigates the impact of three different combination of electric gloss component (definition only; definition plus translation and

translation plus picture) on vocabulary retention and recall of 120 EFL learners. In the study, the learners were divided into two equal group. One group attended elementary courses in 4 classes for 5 hours of classroom instruction per week while the other group attended intermediate course in 4 classes for the same period. Two vocabulary tests were administered for 1): immediate recall i.e., after the class; and, 2) a delayed test i.e., after three weeks. The result of showed a significant differences between those who received different types of glosses and those who did not on both immediate and delayed test on the one hand; and there was equally a significant differences among the groups who received instruction using the different kinds of glosses on the other.

In an experimental study, Altalhab, (2018) examines the role of oral and written repetition strategies on short and long-term retention of 12 unknown words over a semester in a classroom context. The participants, who were EFL learners, were divided into treatment groups: oral, written and oral plus written. Using, a pre-test and three delayed post-tests given at one day, one week and six weeks interval, the result revealed that all the three repetition strategies were effective in retaining new words in the short-term memory while the oral plus written group achieved superior result in retaining the new words in the long-term memory.

Ibarra and Martinez Ortega, (2018) investigatehow the training of the working memory through implementing a set of strategies could contribute to vocabulary retention of English words by 50 undergraduate students in an English as a Foreign Language course in a Colombian University. The participants were divided into two intact groups: experimental, with 28 students, and control group, with 22 students and were exposed to a series of memory strategies for a period of 10 weeks. The result showed that most learners in the experimental group benefited

from the instructions and showed a gradual progress in the retention and retrieval of the words studied.

Kontawee and Sappapan, (2018) examines the effects of First language (L1) and Second Language (L2) hypertext glosses on Reading comprehension, Immediate Vocabulary Recognition (IVR),and Delayed Vocabulary retention (DVR) on a group of 83 Secondary School low-achieving 10th grade students. The students were assigned to read glossed text, LI and L2 hypertext and a repeated measure of t-test design (without control group) was employed. The result of the study revealed that the effects between L1 and L2 glosses were significantly different in favour of the L1 glosses. The L1 glosses score were significantly higher than those of the L2.

In a quasi-experimental within subject designed, Far, (2016) examines the effects of glossing on different types of text with different difficulty levels and varying lengths on vocabulary retention of 41 participants. Using two types of texts, namely expository and narratives, with three difficulty levels of easy, standard and difficult, and two text lengths, i.e., short and long, the participants were exposed to 12 texts. A post-test was administered after the treatment and the result of repeated measures ANOVA indicated that there were significant differences in vocabulary retention of students. It was further revealed that short, easy and expository texts helped students to retain the glossed words better.

Alzeer, (2015) examines the effectiveness of Quizlet, a web- based flash card system, on academic vocabulary learning, vocabulary retention, and perceptionsof 63 fourth year female undergraduate learners at a Saudi University. The participants, who were selected based on their proficiency in the 2000 Vocabulary Level Test (Schmitt, Schmitt, and Clapham, 2001), were divided into control and experimental groups and were exposed to 240 (items from the academic

word list) over a period of six weeks. After a pre-test, immediate post-test and two-week delayed post-test was administered to both groups, the results revealed that both paper and Quizlet flashcards were effective in improving vocabulary learning and retention, however, no significant difference between the two type of flashcards was found.

Using an experimental approach, Abdal Rahim **(**2015) investigates the effectiveness of Keyword Learning (KWL) Strategy on EFL students' reading comprehension, vocabulary and its retention. The participants consists of 64 students who were divided equally into control and experimental groups consisting of 32 students each. The data for the study was collected using check list for teachers and tests: pre and post reading comprehension test, pre and post vocabulary test; delayed retention test and pre and post attitude scale test. It was revealed that the KWL strategy was effective in developing reading comprehension, vocabulary and its retention and in enhancing the attitudes of students towards English language.

Mohammed (2009) investigates the effectiveness of Total Physical Response Storytelling (TPRS) in vocabulary acquisition and retention of EFL. The 80 samples, who are EFL students in preparatory school, were randomly selected and divided into experimental and control groups. Having taught the experimental group the vocabulary items using TPRS, and the control using traditional method, the data for the study was collected from pre-andpost-tests of vocabulary achievement and attitude scales administered twice: after treatment and as follow up a month after the treatment. The same test of the vocabulary achievement was administered to both groups again as a follow up test to measure the vocabulary retention after a month from the treatment. The findings of the study showed that TPRS method was an effective way in enhancing vocabulary acquisition and retention. They also provided evidence to the effectiveness

of using TPRS method in helping the students to change students' negative attitudes into positive ones towards English language.

Min, (2008) conducts a quasi-experimental study to compare the effectiveness of reading plus vocabulary-enhancement activities (RV) and narrow reading (NR) - repeated reading thematically related articles- on vocabulary acquisition and retention among English as a foreign language (EFL) secondary school students. Twenty-five third-year male students with intermediate-level English proficiency participated in each instructional treatment 2 hours per week for five weeks. The RV group read selected texts and practiced various vocabulary exercises. The NR group read thematically related supplemental materials besides the selected texts. A Chinese version of the modified Vocabulary Knowledge Scale was employed to assess students' knowledge of 50 vocabulary items. The results showed that reading plus focused vocabulary exercises were more effective and efficient than the narrow reading approach in enhancing target vocabulary acquisition and retention among EFL secondary students.

Dmistak, (2007) examines the relationship between memory encoding techniques and working memory (WM) ability. The participant, who were college students enrolled in Introductory Psychology courses, were divided into low, medium, and high WM span groups. They studied test booklets with psychology terms and definitions, followed by a repeated definition, a mnemonic device (i.e., Keyword), or an example. It was predicted that the high WM span participants would perform better than the low WM span participants overall, that the mnemonic condition and the example condition would aide in the learning of the psychology terms more so than the repeated definition condition, that people with a low WM span would benefit more than the people with high WM span from the use of the mnemonic, and that the definition questions would be easier than the application questions on the multiple choice test. This final hypothesis

was the only one supported by the data. However, even though there were no differences between encoding conditions, the participants rated the Keyword and the example conditions as more helpful than the repeated definition condition.

Marefat & Shirazi (2003) examine the effect of teaching direct learning strategies (memory, cognitive, and compensation) and their subcategories on the vocabulary retention (short-term and long-term) of EFL learners. The participants were 60 Iranian female English Language Learners between the ages of 15 and 17. Before the treatment phase of the study, a questionnaire was given to the participants to see if they already use these strategies even before receiving any instruction, and also to raise their consciousness on the use of them. After the treatment, the participants took two equivalent tests with an interval of two weeks to find out the difference between their short- term and long - term retention of vocabulary. The results indicated that learners‟ strategy use in short-term retention far outweighed that in long-term retention. The results also portrayed the superiority of memory strategy use both in short and long term retention. The next most frequently used strategies were cognitive and compensation strategies respectively.

Al-Hadlaq, (2003) investigates the effectiveness of four vocabulary learning tasks on l04 Saudi EFL learners' retention of ten previously unencountered lexical items. These four tasks were: 1) writing original sentences (WS), 2) writing an original text (i.e. composition) (WT), 3) filling in-the-blank of single sentences (FS), and 4) filling in-the blank of a text (FT). The result of the analysis show that composition writing was the most helpful task for vocabulary retention and also for general language learning, followed by FT. Sentence fill-in was considered the least useful activity in this regard.

Hermann (2003) investigates the differential effects of reading and paired-associate learning on vocabulary acquisition and retention in adult ESL learners. The samples comprised of Thirty four (34) university students who were divided into two intact groups. Subjects in one group were asked to read the novel Animal Farm while subjects in the comparison group memorized a list of words preselected from the novel. Subjects were then administered two post-tests: one to assess initial lexical acquisition, and another three weeks later to assess lexical retention. Only subjects in the paired-associates group were apprised of the vocabulary test. Although multiple comparisons failed to produce sufficient support for the hypothesis that the reading condition would initially acquire more vocabulary than the word list condition, substantial confirmation emerged for the second hypothesis that the reading condition would exhibit superior retention rates. These findings suggest that for the purpose of encouraging long-term lexical retention, reading literature is preferable to paired associate learning.

Yoshii & Flaitz, (2002) investigate the effect of annotation type: text-only, picture-only, and a combination of the two on incidental vocabulary retention in a multimedia reading setting using 151 EFL participants at the beginning and intermediate proficiency levels. The participants read a story for comprehension purposes using the Internet and were tested using vocabulary retention assessment: Picture recognition, Word recognition, and Definition Supply tests. The results indicated that the Combination group (annotations with text and picture) outperformed the text only and Picture-only groups on the immediate tests. The Combination group also outperformed the other two groups on the delayed tests; however, the differences were smaller than those for the immediate tests. There was no significant interaction between annotation type and proficiency level for either the immediate or the delayed tests.

The importance of vocabulary retention on vocabulary learning and development has been clearly established and supported by evidences brought forward using a variety of approaches, and strategies in these studies. Based on the studies examined above, the following key areas regarding vocabulary retention are discussed below:

The use of instructional aids such as pictures, flashcards and glosses have been shown to enhance immediate and delayed retention rather than text only.Fathi & Sarkosh,(2019), Kongtawee &Sappapan, (2018), and Far, (2016) reported the positive effect of glossesand glossed target words on retention.Yoshii &Flaitz, (2002), reported the effectiveness of pictures in vocabulary retention, andAlzeer, (2015)reported the effectiveness of bothpaper and web-based flashcards. In contrast, however, the outcome of the study conducted by Al-Hadlaq, (2003) shows that that writing text helped learners in enhancing their vocabulary retention. Indeed, the role of instructional aids in facilitating both immediate and delayed recall is indisputable in vocabulary retention.The Keyword Strategyalso allows the use of pictures, however in this regard, only, as visual cues or keywords that represent the target words to be retained. It could also be a mental picture;a mental imagery representing the target word isconjured or visualized in the mind. In essence, the notion of picture in Keyword Strategy concerns both visual and mental imagery.In the present study, the latter (mental imagery)was much more employed to create linkages between the target words and their Keywords.

The use of instructionalstrategies inenhancing vocabulary retention also featured in most of the studies reviewed. The effectiveness of a number of strategies such as Memory, Cognitive, Compensation, Reading and Paired-Associate, Keyword Strategy,Total Physical Response, and Storytelling etc on vocabulary retentionhave been reported in studies by, Altalhab, (2018); AbdulRahim, (2015); Ibarra&Martinez Ortego, (2018); Muhammad, (2009); Min, (2008);

Dmistak, (2007); Alhadlaq, (2003); Hermann, (2003);and Marefat & Shirazi, (2003). Specifically, studies by Iyad, (2016); DeWitt (2010); Dmitsak (2007); Al-Jarf, (2006); Yek (2006); Issariya, (2004); and Marefat & Shirazi, (2003) have confirmed the relative advantages of memory strategies as effective means of enhancing vocabulary retention over the non-memory ones.This study also investigates the use a type of memory strategy i.e., the Keyword Strategy on vocabulary retention. However, unlike in most of these studies were these strategies are used as instructional tools, the Keyword Strategy,as used in this study, is a learning strategy employed by the learners for vocabulary retention.

The use of test technique at both pre-and post-tests levelsto investigate the immediate and delayed recall of vocabulary items is a common feature of all the studies reported. This is evident in studies by Fathi & Sarkosh, (2019); Kongtawee & Sappapan, (2018); and Far, (2016); Altalhab, (2018); AbdulRahim, (2015); Alzeer, (2015); Ibarra &Martinez Ortego, (2018); Yoshii and Flaitz, (2002), Mohammed (2009), Marefat and Shirazi (2003), Hermann, (2003) and Dmistak, (2007). The use of both pre and post-tests enables the researchers to compare performance of their subjects before and after treatment conditions are put in place. In the present study, the test technique is also used. Like most of these researchers, the present study also usesthe pre -and post-tests. Further more, like Marefat and Shirazi (2003), two equivalent tests are used for testing recall and retention of the MAP lexical items studied. In contrast to most of the studies reviewed in which both immediate and delayed recall were measured, this study only measuresdelayed recall; testsare administered everytwo weeks.

In these studies most of the samples/participants were ENL/ EFL as seen in Fathi & Sarkosh, (2019); Kongtawee & Sappapan, (2018); and Far, (2016); Altalhab, (2018); AbdulRahim, (2015); Alzeer, (2015); Ibarra & Martinez Ortego, (2018); Mohammed, (2009); Marefat and

Shirazi, (2003); Hermann, (2003) and Dmistak, (2007); except for Yoshii and Flaitz, (2002), whose samples were ESL learners. In contrast, however, the present study investigates vocabulary retention from English as Second Language (ESL) context. The differences in language learning between ESL and EFL context is an important factor that could rarely be ignored. It is on this account that in the present study, the researcher examines lexico-semantic retention from Second language context.

2.8.3. Vocabulary Learning Strategies Studies

Research on vocabulary learning strategies are concerned with investigating learners' preferences that determine the selection, adaptation and use of strategies to enhance vocabulary learning. Vocabulary learning strategy studies have been conducted in a number of contexts (ENL, EFL and sometimes in ESL) and from a number of perspectives (most and least use, gender and level of proficiency). Interestingly, evidences from such studies have contributed to our understanding ofwhat learners do to amass as well as build up their vocabulary.A review of these studies is indispensable to understanding the present studywhich also investigates learner strategy. Some of these studies are explored below:

Besthia, (2018) also examine the most and least used vocabulary strategies among EFL university students. The vocabulary strategies investigated are determination, social, memory, cognitive, and metacognitive. The 74 EFL students comprising of 18males and 56 females completed a questionnaire adopted from Vocabulary Learning Strategies (VLS) developed by Schmitt (1997). A semi structured interviews were also carried out. The findings indicated that guessing from context and dictionary use strategies were the most popular, while asking the teacher or peers for meaning were rarely used.

Hamza, Yasin and Aladdin, (2015) investigate the use of Vocabulary Learning Strategies (VLSs) among Sudanese EFL learners. The purpose of the study was to explore the vocabulary strategies used by the samples and to determine the most frequently and the least used strategies. The VLSs used in the study are based on Schmitt's (1997) taxonomy. The data was collected using a questionnaire of VLSs and the result of the study showed that the discovery strategies were the most frequently used.

Ogenyi, (2015) conducts a descriptive survey of strategy use and its effect on language performance of 1401 randomly selected Senior Secondary School (SSS) form ll students in three states of south-eastern Nigeria. The data was collected using test and questionnaire .The results of the study revealed the greatest proportion of the Igbo learners of English in SSS ll (84.3%) made use of socio-affective language learning strategy while cognitive strategy had the lowest proportion of users (50.9%). It was also revealed that there was a significant difference in the English language performance between the users and non-user of the various language learning strategies.

Seffar, (2014) examines the vocabulary learning strategies used by 124 Moroccan university EFL students comprising of 60 males and 64 females. The purpose of the study is to determine whether gender and proficiency affects the choice and use of strategies. The students were assessed through Oxford's (1990) Strategy Inventory for Language Learning (SILL), and the proficiency was determined by the subjects study level. The result of the study indicated that the frequently used generally is compensation strategies and the least use is affective strategies. It was also reported that males employ compensation and memory strategies while the females show more frequent use of all the six categories, and fourth year university students employ compensation and memory more often than year one students do. In all, it was revealed that

gender and proficiency have a significant relationship with the students' use of learning strategies.

Abadi and Baradaran, (2013) investigate the relationship between learner autonomy and vocabulary learning strategy with regards to different level of proficiency. The learners were evaluated on their level of proficiency and were made to complete a questionnaire. The outcome of the study revealed that proficiency level was highly positively correlated with learners' autonomy and vocabulary learning strategy use among learners; advanced level learners developed more autonomy with regards to VLS than intermediate learners.

Ajideh and Jafari, (2013) explore the differences in the selection of vocabulary learning strategies among Iranian EFL learners with varying levels of proficiency. Using 102 participants who were randomly selected were assessed on their levels of proficiency and also completed a questionnaire regarding the aim of the study. It was discovered that there were statistically significant differences among frequency of learners' choice for using vocabulary learning strategies in different levels of proficiency.

Amirian and Heshmatifar, (2013) investigate the most and the least common strategies use among 74 Iranian University EFL learners using Schmitt's (1997) Vocabulary Learning Strategy Questionnaires. The result of the search revealed that the determination strategies were the most use while the social strategies were the least use by the learners in the study.

Lin-fang, (2013) conducts a study of the effects of different learners' variables such as motivation, family background, and proficiency levels on the use vocabulary learning strategies using 450 students in a university. The result of the study revealed that proficient learners were better users of vocabulary learning strategies.

Barekat and Karami, (2012) examine the correlation between proficiency level of Iranian EFL learners and their vocabulary learning strategy use. The learners, who were categorized into elementary, intermediate, and advanced levels of proficiency, completed a questionnaire about their vocabulary learning strategies. Findings revealed that proficiency level highly correlates with frequency of vocabulary learning strategy use.

Pourshahian,Kalajahi and Azarfam, (2012) investigate gender differences in vocabulary learning strategies use of Turkish EFL learners. The outcome of the study revealed that the frequency of vocabulary strategy use of females was slightly higher than males in metacognitive and psycholinguistic vocabulary learning strategies. Thus, indicating that gender is a significant factor in vocabulary learning strategy use.

In another study, Arjomand and Sharififar (2011) examine the relationship between vocabulary learning strategies and gender among Iranian EFL learners. It was reported that cognitive strategy was the most commonly used strategy, while social strategy was the least frequently used one. However, with regards to gender, they claimed that cognitive/ metacognitive and social strategies were the most and the least commonly used respectively.

Asgari and Mostapha, (2011) investigate the types of vocabulary learning strategies used by Malaysian ESL students majoring in Teaching English as Second Language (TESL) in a University. Using a qualitative research design, an open ended interview was conducted on one to one basis with ten students. The result of the study indicated that memory, determination and metacognitive strategies are popular strategies used by students.

Hassanzadeh, and Khatib, (2011) examine the role of gender in vocabulary learning strategy use among 146 undergraduate EFL students. The students took a test to determine their level of

proficiency. The outcome of the assessment indicate a no significant difference between learners' gender and selection of vocabulary learning strategy.

In a comparative study, Soureshjani, (2011) examines gender-oriented vocabulary learning strategies among EFL Iranian learners. The result of this study revealed a significant difference in male and female use of vocabulary learning strategies.

Using a qualitative research design, Zhang, (2011) examine the strategies used by 35 Chinese English major students in vocabulary learning and the differences between effective and less effective learners in using vocabulary strategies. The participant took a vocabulary and also completed a questionnaire. The result indicated that there are significant differences between effective and less effective learners and that effective learners use six strategies namely listening and reading, learning words in sentences, using bilingual dictionary, reading of English book in spare time and studying the spelling.

Lachini, (2008) investigates the effect of level of proficiency in L2 on Creative Reflective, Effective, Active, and Motivated (CREAM) vocabulary learning strategies using 120 language learners. A 60 –item questionnaire was administered in a 5-point Likert scale with three different level of proficiency. The result revealed that level of proficiency has an effect on vocabulary learning strategy use; participants in the same level of proficiency use the same strategies with same frequencies.

Riankamol (2008***)*** investigates the vocabulary learning strategies adopted by EFL gifted students in a school in Bangkok.The data for the study, which was carried in the first semester, was collected using a 25-item questionnaire adopted from Schmitt'taxonomyfor the purpose of the

study. Using frequency, percentages, and means, it was reported that high proficient students used metacognitive strategies frequently while determination strategy are less frequently used.

In a study of the utilization of vocabulary learning strategies by 150 EFL University students, Marin-Marin (2005) discovers that guessing meaning from context, using dictionary to check the meaning and repeating silently were the most commonly used strategies while keeping notes on electric devices, using electric dictionaries, and recording words on audiotapes were the least commonly used strategies.

Fan, (2003) studies the vocabulary strategy use of 1067 college students in Hong Kong. It was also reported that the subjects make use of dictionary and contextual guessing while the Key word technique and management strategy were least frequently used.

In a survey of vocabulary strategy use among 600 high school college and adults learners, Schmitt, (1997) discovers that the most frequently used strategies were dictionary use, oral and written repetition, word spelling, and contextual guessing, where as semantic map, Keyword , and first language cognates were less frequently used. It was also reported that the more proficient learners tend to use more complex and meaning centered strategies than others.

In a study with 850 Chinese college students, Gu and Johnson's, (1996) results show that there was a significant relationship between vocabulary learning strategies, language proficiency, and vocabulary breadth. They also reported a positive correlation between learners' scores and use of dictionary guessing from context, and note-taking. However, they found that visually repeated words had a negative correlation with the size of vocabulary and general proficiency.

Lawson and Hogben, (1996) study 15 college students who were studying Italian vocabulary in an Australian university The aim of the study was to find out the strategy they mostly use in learning the meaning of new words. The result of the study shows that the most frequently used is the repetition strategy, meaning while grammatical or physical aspects of the words are neglected.

Studies of Vocabulary Learning Strategies and its impact on vocabulary learning as well on other language skills have also been examined in several studies such as Nosidlak,(2013); Kafipour& Naveh,(2011); Luppescus & Day, (1993); Ahmad (1989)etc.For Instance, Nosidlak, (2013) noted that the vocabulary learning strategies adopted by Eminent English learners was proof of the relation between language competence and the use of certain vocabulary strategies. Ahmad, (1989),on strategy use, reported that the subjects who were undergraduate EFLSudanese students mostly used the dictionary and note taking strategies. In their study of effect of VLS on reading comprehension, Kafipour, & Naveh, (2011) discovered that the use of certain vocabularylearning strategiesmake a difference in reading comprehension.

The scope of Vocabulary Learning Strategies studies (VLSs) is vast and comprehensive and yet researches are still ongoing. Within the limits of the present study, any attempts to further explore these areas will 'derail' the course of this study. However, from the few studies reported above, it is understood that most of these studies focused on investigating the effects of three variables (frequency of use, gender factors, and level of proficiency) on use and choice of VLSs, e.g., Besthia, (2018), Seffar, (2014), Amirian & Heshmatifar, (2013); Asgari& Mustapha, (2011), Zhang, (2011),Riankamol, (2008) etc. For example, Hogben, & Lawanson, (1996), investigated the frequency of use of VLS.Pourshahian, Kalajahi and Azarfam, (2012),Hassanzadeh & Rezaei,(2011), Soureshjani,(2011) and Siriwan,(2007) focused on gender

effects on VLSs; and last but not the least, Abadi &Baradaran,(2013), Ajideh & Jafari, (2013), Lin, (2013), Barekat & Karami, (2012) and Lachini, (2008) focused on the effects of level of profiency on use and choice of VLSs.

The main differences between researchers above lie, in fact, in their focus on these three aspects. Because, except for few studies, the samples, the design and approach to investigating the variables are nearly similar. With regards to the samples, in most of the studies, the samples were mostly EFL students in undergraduate levels of English learning, e.g., Bestia, (2018); Seffar, (2014); Yasin & Aladdin, (2015); Lin, (2013); Hassanzadeh, Khatib, and Rezaei, (2011); Asgari & Mustapha, (2011); Zhang, (2011) and others. In relation to approach and design, most studies adopted Vocabulary Learning Strategy(VLS) taxonomy as well as Vocabulary Learning Strategy (VLS) tests developed by Schmitt,(1997) to determine the frequencies of use as well as to evaluate levels of proficiency except for Seffar, (2014) who used Oxford's (1990) Strategy Inventory for Language Learning (SILL) to assess use of VLS. Finally, in most of these studies, the assessment of use, choice and levels of proficiency were conducted using qualitative approach such as questionnaires and interviews, except for Zhang, (2011) who used a vocabulary test along with a questionnaire.

From the aforementioned, it is evident that studies of vocabulary learning strategies examined have a lot to offer in understanding the present study For instance like, Besthia, (2018), Seffar, (2014), Amirian & Heshmatifar, (2013); Asgar & Mostapha, (2011), Zhang, (2011),Riankamol, (2008); and Hogben, & Lawanson, (1996), the present study also investigates the frequency of use of VLS using a survey(also a qualitative measure) which seeks to find out the samples' levels of awareness and use of lexical learning strategies. Furthermore, the VLS taxonomy as well as the survey questions used in the present study are also adopted from Schmitt (1997). As

in most of these studies, the samples in the present study are also undergraduate students but, in contrast, those in this study are ESL learners.

2.8.4. Vocabulary Learningandthe Impact of KeywordStrategy

The Keyword Strategy is a memory technique for acquisition /learning vocabulary. It involves the use of sound, visual or imagery inducing keywords associations or clues (pictures, cue words, imagery, etc.) to facilitate remembering or memory (Atkinson and Raugh, 1975; Belleza, 1983; Desrochers, Gelinas, and Wieland, 1989; Desrochers, Wieland and Cote, 1991 and Hauptmann, 2004).

Belleza, (1983); Desrochers and Begg, (1987); Nation, (2001) are of the view that the Keyword Strategy is one of the most researched strategy for vocabulary acquisition and learning because of the availability of large quantity of existing literature in the field. . Most researches have compared Keyword Strategy with other learning strategies, such as contextual and non-contextual strategies.There are several sources that give an overview of Keyword research and most of these studies regard it as a performance enhancing strategy that can be used as an alternative or supplement to currently practiced strategies (e.g. Belleza, 1983; Cohen, 1987; Desrochers, and Begg, 1987; Gruenberg and Morris, 1992; Levin, 1981; Paivio and Desrochers, 1981; Pressley, Levin, and Delaney, 1982).

The first Keyword Strategy research was carried out by Butler et al (1973) but it was Atkinson and Raugh (1975) whose experiments heightened the awareness of mnemonics for vocabulary acquisition and learning especially in the ENL and EFL contexts and, consequently, triggered a plethora of experiments to such an extent that one could see further research into the effects of the Keyword Method as superfluous (Hauptmann, 2004). In an experiment by Atkinson and

Raugh (1975), the subjects (college students) had to learn 120 Russian words, divided into three comparable 40-word sub- vocabularies or presentation in separate days (three studies-test trials). The control group, which used their own learning strategies, received the Russian word and its English equivalent on a computer screen. The Keyword group was additionally presented with a Keyword. In the test phase, the subjects were presented with the Russian word and had to produce the English equivalent within 15 seconds. A test for all 120 words was conducted on the fifth day and, as a surprise to the subjects, again on the sixth. The result of the research showed that the Keyword group scored significantly better. After the fifth day, retention was 72% compared with 46% of the control group and after the sixth day result was 43% compared to 28% (Atkinson and Raugh, 1975).Since then, there has been a multitude of experiments which confirm the beneficial influenceof theKeyword Strategy.Some of these are examined below:

Singer (1977) also reports that the Keyword Method proved very successful although the researcher did not use a control group. The experiment in 'Junior High' lasted 10 days and the researcher presented five to eight words per day. Singer's (1977) experiment also indicated that the Keyword strategy was effective on the motivation of the learners and the teacher.

In a study by Levin, Shriberg, Miller, McCormick, and Levin (1980), Keyword method was used by fifth graders and fourth graders to remember the US states and their capitals. The learners who used Keyword method outperformed the learners who did not.

Griffith, (1980) conducts an experiment with soldiers of the US Army, taking (3) different levels of intelligence into account (GT-scores/ General Technical Aptitude Test, a test of intelligence). The subjects had to learn 15 Korean words. Level one and two did significantly better than the control group and level three still outperformed the control group, but to a lesser extent. This

contradicts Hall et al (1981) finding that the Keyword Strategy is suitable mainly for weak and inexperienced learners. The Keyword group also outperformed the control group in the time needed to learn these words. On average they needed 787 seconds compared with 933 seconds for the control group. It was concluded that the Keyword Strategy is highly effective, regardless of the intellectual aptitude of the subjects. It was reported that, if the SER (study efficiency ratio=number of correctly translated words divided by overall learning time x1000) is employed, the Keyword group's performance is 79% better than that of the control group. Pressley et al. (1982) conducted an experiment with 108 native English speaking students who had to learn a list of 30 one and two-syllable low frequency English nouns each. It was concluded that the Keyword strategy proved superior to every alternative considered (rote-learning and context) when the provision of the definitions in response to vocabulary words was the dependent variable.

In a study which sought to measure the students' abilities to measure mineral attributes, Scruggs, et al. (1987) found that most students with learning disabilities involved in the Keyword condition reported that they believed the strategy was helpful and rated it to be more helpful than did the non-keyword group members. It was revealed that the students did not only find the Keyword Strategy helpful in learning but also easier to use than other methods and report that they would use the strategy again.

Brown and Perry (1991) compare three learning strategies: Keyword only, Semantic (meaning through context) and Keyword-semantic (keyword plus context) and found that the Keyword - Semantic strategy worked best.

Kasper (1993) examines the effect of the Keyword Strategy on sentence combinations in Spanish and reported that the Keyword group remembered 85% of these sentences compared with 49% of the control group.

Avila and Sadoski (1996) tested the retention rate of 93 low achieving, disadvantaged, fifth grade Limited English Proficiency(LEP) Hispanic students by presenting them with 10 items of vocabulary over three days and found that the Keyword Method proved superior in recall and comprehension.

In another study, Rodriquez and Sadoski (2000) examine the Keyword Strategy with an element of context. They compared this with rote learning, learning in context and the Keyword Strategy without context. The material for the Keyword /context group consisted of the target word, the Keyword and three sentences in the target language that included the target word. The result from the experiment showed that the students in the context/keyword method were able to retain 1.5 to 4 times as many correct definitions after a week as the students in the other groups (context only and rote-learning).

Rodriguez (1999) investigates the effectiveness of Rote rehearsal, Context, Keyword, and Context/Keyword Strategies on immediate and long-term retention of EFL vocabulary in natural classroom settings. The subjects who were in their ninth grade were randomly assigned to one of four learning conditions: Rote rehearsal, Context, Keyword, and Context/Keyword condition. The results showed that the mnemonic-based methods (i.e., Keyword and Context/Keyword) proved superior to the non-mnemonic-based methods (Rote rehearsal and Context) in both immediate and delayed recall. It was also discovered that the Context/Keyword Strategy

produced superior recall compared to the other three methods both in immediate and delayed recall.

In the millennium, more studies that confirm the effectiveness of the effect of Keyword Strategy have emerged and some of these are explored below:

In a quasi-experimental design, Davoudi & Yousefi, (2016) investigate the effect of Keyword method on vocabulary retention among 38 female Iranian high school EFL learners. The learners who were randomly assigned into experimental and controlled groups were taught using the Keyword Method and the traditional method. Using paired sample t-test and independent samples t- test, it was discovered that the experimental group who were taught through the Keyword outperformed the control group in vocabulary retention. It was concluded that the Keyword method can reduce learners' problems in acquisition and retention of words.

Alakaby, (2013) studies the impact of Keyword Strategy on reading comprehension and composition among sixty eight (68) second year intermediate school female pupil. The pupils who were randomly divided into two equal groups were taught through the Keyword and the traditional methods. The result of the study shows that learners in the experimental group who were taught using the Keyword statistically performed better than the control group

In another study, Zarei, Hasani & Keysan, (2013) investigate the differences among the effects of mnemonic and mapping techniques involving the keyword method, peg word method, the loci method, argument mapping, concept mapping, and mind mapping on L2 vocabulary comprehension and production. 151 Iranian Female students from a public pre-university school in Islam Shahr participated in this study. The finding of this study indicated that the keyword

method group had the third highest mean after the peg word and loci on vocabulary comprehension, but a low mean on vocabulary production test.

In another study, Ashoori, (2012) also compares the effects of Keyword, Context, and Word List instructional strategies on long-term vocabulary recall of 65 female students from Kish Language Institution in Tehran. In the treatment which lasted for 2 sessions, the students who were randomly assigned in the treatment conditions were instructed on words in the three techniques. Using a cued-recall and word recall test of retention, the result revealed that the Keyword group was significantly better than the other groups

Marzban and Amoli, (2012) study the effect of utilizing mnemonic techniques on immediate and delayed recall of high intermediate college students. The experiment showed that mnemonic technique was significantly effective in improving recall and retention of vocabulary.

Saeedi and Mohajerian, (2012) examine the comparative effectiveness of Keyword and context methods on vocabulary retention and the rate of forgetting of EFL learners. The participants of this study were 40 learners from two intact classes. Two classes were randomly assigned to the Keyword and context group. The result revealed that learners recalled more vocabulary immediately after treatment, and also the rate of forgetting was more in the context group than the Keyword group.

Win, (2012) investigates the effect of Keyword technique on vocabulary retention ability of 40 Bangkok university students and their attitudes towards the use of the Keyword techniques. Using test and questionnaire techniques as method data collection, it was found that students obtained higher scores for the posttest than the pretest scores at the 0.05 level of significance. It was also discovered that attitude towards using the Keyword was at a high level. The result from

this study supported that using Keyword helped the students store and retrieve a new bunch of vocabulary.

Al-Zahrani, (2011) investigates the effectiveness of Keyword-based instruction in enhancing English vocabulary achievement and retention of Ninety six (96) intermediate stage pupils with different working memory capacities. The pupils were randomly selected in the two different treatment conditions: experimental and controlled. The experimental could consisted of forty seven (47) pupils were taught through the Keyword strategy while the remaining forty nine pupils in the controlled group were taught through the traditional method. The result revealed that the Keyword method had a positive effect on the learners' vocabulary achievement and retention

In collaborative study, Baleghizadeh and Ashoori (2010) compare the effect of Keyword and Word List Method on immediate vocabulary retention of Forty four (44) EFL students in a junior high school in Iran. The students who were randomly assigned to one of the learning conditions were administered a meaning recall test. The result showed that the Keyword method produced better recall compared to the Word list method.

Guey et al., (2010) explore the effect of a new Keyword Strategy on learning English vocabulary among one hundred and twenty (120) Chinese learners. The learners who were Junior college graduates with roughly eight years of learning English as a foreign language learned eighteen (18) new English words either by Keyword strategy or by direct method. An English Chinese paired association task was administered immediately or 1 week later. The result showed that both Keyword Strategy groups made superior performance on recall.

Brazley, (2008) investigates the effects of the Mnemonic Keyword and Rote methods of vocabulary instruction on immediate and delayed word recall and application. The samples were seven high school students with learning disabilities who received vocabulary instruction for 6 weeks using the Mnemonic Keyword and Rote methods of vocabulary instruction. Tests of immediate word recall and application were given as assessments at the end of each vocabulary instruction session. Tests of delayed word recall and application were given as assessments at the end of each week. The result showed that that there was no statistically significant difference between the effectiveness of the Mnemonic Keyword and Rote methods of vocabulary instruction.

Chen, (2008) studies the effect of Keyword Method on English for Specific Purposes (ESP) vocabulary instruction with the use of quasi-experimental and open-ended questionnaire. Forty participants from two intact classes in a university in Taiwan were randomly assigned as the keyword and traditional method group. The Keyword group received the post-test in two steps; cued recall and word recall were applied to evaluate the effectiveness of the techniques on retention of target vocabulary. The findings of this study showed that keyword group was better than the other groups in both cued recall test and word recall test, and there was no difference between the context and word list groups.

Ismail, (2008) investigates the effectiveness of Keyword and Context-based methods in developing Preparatory stage Pupils‟ EFL vocabulary achievement and retention. The students who were assigned into three treatment conditions: two experimental groups A &B and 1 controlled groups, The experimental group A was instructed using Keyword strategy, and the other experimental group B was instructed using the Context-based method , while the controlled group was instructed using the traditional method. Using two equivalent forms of pre-

and post-test to measure achievement and retention, the results of the study showed that there was a statically significant difference between the Keyword group and the controlled group on achievement of vocabulary in favour of the Keyword group. It was also revealed that there was no statistically significant difference between the context experimental group and the control group on both achievement and retention of vocabulary. In addition, there was a statistically significant difference between the Keyword experimental group and the context experimental group on achievement of vocabulary in favor of the Keyword experimental group. Finally, there was no statistically significant difference among the three groups on the retention of vocabulary

Fritz et al., (2007) compares the effectiveness of Retrieval practice, the Keyword mnemonic and Rote rehearsal for learning foreign language vocabulary in three experiments. In the first experiment which compared retrieval practice, the keyword mnemonic and rote rehearsal, it was revealed that Retrieval practice and Keyword mnemonic produced similar recall which was superior to Rote rehearsal. In the second experiment, participant learnt German words using the Keyword, retrieval practice or their own method. The result shows that retrieval practice and the Keyword based recall were similar and superior to self-directed study. In experiment 3, the participants learned German words using Keyword, retrieval practice and a combination or an elaboration strategy. The result shows that for receptive learning, retrieval practice and the Keywords were equally beneficial while for productive learning, retrieval practice was more effective.

Wyra, Lawson, and Hungi, (2007) implement Keyword Method to compare the experimental performance group in learning new Spanish words and their English definitions to that of a control group which used standard Keyword procedure. The findings showed that retrieval training can be a significant indicator of both backward and forward recall performance.

Sagarra and Alba, (2006) investigate the effectiveness of Rote memorization, Semantic Mapping and the Keyword strategy on vocabulary learning among 778 beginning Second language (L2) learners. The Rote memorization strategy consisted of memorizing the first language (L1) translation of a new L2 word by rehearsal while the Semantic mapping strategy displayed L1 words conceptually related to the L2 word in a diagram and the Keyword Strategy involved associating the novel L2 word with an L1 Keyword that was acoustically or orthographically similar and then connecting the L1 Keyword with the L1 translation of the L2 word. The results revealed that vocabulary learning techniques requiring deeper processing through form and meaning associations (i.e., the Keyword Strategy) yield the best retention. In addition, rote memorization of L1-L2 equivalents was more effective than creating multiple meaning associations (i.e., semantic mapping). This suggested that using the Keyword Strategy with phonological Keywords and direct L1 Keyword-translation linked in the classroom lead to better L2 vocabulary learning at early stages of acquisition.

In a study Gaul, (2004) examines the effect of Keyword Strategy on immediate and delayed recall of the vocabulary terms selected by students' The subjects were 50 sixth grade students from two regular education classrooms in a Southeastern Pennsylvania public school. The students were randomly assigned into two treatment groups: experimental and controlled groups. The experimental group received two treatment, the teacher selection/mnemonic Keyword Strategy and the student selection/Mnemonic Keyword Strategy, in a counterbalanced design. On the other hand, the students in the controlled group received a picture treatment. The results showed that when students selected their own terms for study they scored significantly higher on all measures of immediate and delayed recall. Mixed results were obtained for the mnemonic

Keyword Strategy for improving the recall of vocabulary terms because under some conditions the Keyword Strategy alone did not improve recall over the picture comparison.

Hauptmann, (2004) investigates the effect of the Keyword Strategy on vocabulary retention and motivation of EFL learners. The researcher conducted five experiments from different levels to obtain empirical evidence. The subjects were randomly assigned to treatment groups: 62 learners in the experimental groups and 23 in the controlled group. The experimental group was taught vocabulary by using the Integrated Keyword Strategy while the controlled group was taught vocabulary by context with translation. For the purpose of data collection, test were used to collect information on vocabulary retention while a questionnaire and three interviews were used for collecting data on motivation The results showed that the Keyword strategy enhanced vocabulary retention to a great extent compared with comparison groups, and it had a beneficial effect on the motivation of the learners.

Kaminska (2001; 2002) also examines the effectiveness of the Keyword Strategy when teaching phrasal verbs. Kaminska's (2001; 2002) study was conducted over three consecutive years, the experiments proper lasted three to four weeks only. In the process of this study, the researcher developed a variation of the Keyword Strategy, which she calls Literal-Keyword technique. She drew pictures to assist the learners to form an effective image, although she arrived at the conclusion that this was probably not necessary. The results of her study strongly suggest that Keyword Strategy is also suitable to teach phrasal verbs and that those learnt with the Literal-Keyword technique seem to be better retained than those acquired by more traditional discovery exercises, especially when large amounts of vocabulary are to be learnt. A side effect of Kaminska's study is that it showed the flexibility of the Keyword Strategy. It was used for an area which is normally not seen as suitable for the use of it.

While the most obvious curriculum use for the Keyword Strategy is in vocabulary acquisition of both First and Second language vocabulary, there are other adaptations to the Keyword Strategy, especially in teaching and learning science and social studies concepts and terminology, as well as prose learning tasks (Fulk, Mastropieri, and Scruggs, 1992; Mastropieri, Scruggs, and Levin, 1987; Scruggs, Mastropieri, Brigham, and Sullivan, 1992; Veit, Scruggs and Mastropieri, 1986; Scruggs, Mastropieri, and Levin, 1985).

Despite the effectiveness of Keyword Strategy/instruction, a few other studies have arrived, on the contrary, at conclusions which show that the Keyword Strategy is not superior to other learning strategies. For example, Fuentes (1976) as reported in Hauptmann, (2004) found no beneficial effect of the method, but it has to be said that the research method used is questionable. Some others like Wang and Thomas (1992); Wang, Thomas, and Ouellette (1992) reported that there is no long-term benefit of the Keyword Strategy compared to rote learning, when immediate testing is prevented. Hauptmann (2004), however, argued that in laboratory conditions, immediate testing is an indispensable task and, indeed, Gruneberg (1998) assert that it would be 'pedagogically perverse' to omit it deliberately In another study, Hall, Wilson and Patterson (1981) reported that the Keyword Strategy enhances learning when the words are presented in sequence (paced), but shows no additional benefit when the words are given together and the learners have to learn them in the same overall time (un-paced). Pressley et al. (1982) repeated Hall, Wilson and Patterson (1981) experiment using a different vocabulary list and testing the subjects individually rather than in groups. Under these conditions, they found a clear advantage of the Keyword Strategy in paced and un-paced conditions. They are of the opinion that the quality of the wordlists was one factor that prevented the Keyword Strategy from showing its superiority.

By and large, the majority of the researches reported in the literature indicated that the Keyword Strategy is superior to any other vocabulary learning strategy, although some reservations persist. Based on the review, the following conclusions in relation to the present study are highlighted:

1. The Keyword Strategy is flexible

The Keyword Strategy has been widely researched in variety of context (ENL, EFL and ESL), gender (Male & female), age (young, adolescents, adults) and learning levels (beginning, intermediate, & advanced) and aspect, (vocabulary, grammar & reading comprehension, etc).This has been reflected in Abdel-Majeed (2000); Sagarra and Alba (2006); Yaakub (2007); Fritz et al. (2007); Ismail (2008); Abdul Razak (2008); Guey, Cheng &Huang (2010) ; Sagarra & Alba (2006); DeWitt (2010); Hauptmann, 2004 and others. The Keyword Strategy is so flexible that it can be combined with other methods and strategies to enhance vocabulary learning. For instance, Rodriguez (1999) and Gaul, (2004) discovered that the Keyword Strategy in combination with any other methods work better than using it alone. This is in contrast to the present study and many others in which the Keyword Strategy has been used alone.This study examines the effect of Keyword Strategy on lexico-semantic learningamong ESL learners at an advanced levelhowever with some consideration for gender related differences in the use of the Keyword Strategy.

2. The Keyword Strategy is effective for Vocabulary Learning and Acquisition

In most of the studies examined above, it has been discovered that the Keyword Strategy has a positive influence on vocabulary learning and acquisition. The outcome of most of these studies have indicated a strong correlation between vocabulary learning and the use of the Keyword Strategy as seen in Abdel-Majeed (2000), Sagarra and Alba (2006), Yaakub (2007), Fritz et al.

(2007), Ismail (2008) , Abdul Razak (2008),Guey, Cheng and Huang, (2010); Hauptmann, (2004). In contrast, however, the result obtained by Dmitsak (2007); Wang &Thomas (1992); Wang, Thomas, and Ouellette (1992) and Fuentes (1976) in Hauptmann, (2004) showed that the Keyword Strategy was not effective. The positive impacts of the Keyword Strategy as evident in these studies provide the premises that prompt this study. The present study seeks to find out whether similar positive outcomes can be obtainedusing Second language learners.

3. The Keyword Strategy is effective for Vocabulary Retention

Research evidences from most of the studies examined above also indicated the role of Keyword Strategy on both immediate and delayed vocabulary retention. This is evident in the studies by Davoudi & Yousefi, (2016); Abdel-Majeed, (2000); Hauptmann (2004), and Abdul-Razak (2008). This is in contrast to the results obtained by Gaul, (2004); Brazley (2008) and Ismail (2008). Like Davoudi &Yousefi, (2016) and others, the present also examine the effect of Keyword Strategy on vocabulary retention. As such findings from the present study may likely confirm or reject the beneficial impact of the Keyword as reported in these related studies.

4. One for each one

Evidence from the studies have also shown that to facilitate retention and recall, the use of different kinds of Keyword clue for each new word encountered is better than sharing. In the present study, each lexical item has its own unique Keyword clue. Therefore, the total number of lexical items equals the total number of Keyword clues.

5. English Keywords for learning English words

It is practicable to use English Keywords to learn English lexical items as seen in the study by Guey et al (2010). This helps to reduce the problem of First Language (L1) or Mother Tongue (MT) interference. In the present study, however, Keyword clues for learning the English MAP

lexical items was influenced by the learners Mother Tongues because the subjects are multilingual.

6. Teacher designed versus Learner created Keywords

Based on the studies examined, it is evident that it is possible to use teacher designed or student created Keyword for vocabulary learning. For example, studies by Abdel-Majeed (2000) and Hauptmann (2004) used teacher designed Keywords, while Gaul, (2004) used learner created Keywords. In the present study, the learner created Keyword is used. The researcher selected the lexical items while the Subjects designed the Keywords.

7. Keyword Strategy and Learner Motivation

It has been discovered that there is a strong correlation between Keyword Strategy and learners' motivation. This is evident in the results obtained by Hauptmann (2004) and DeWitt (2010). In the present study, no attempt is made to investigate learners' motivation in relation to use of Keyword Strategy.

2.8.5. Vocabulary Learning and Lexico-Semantics Studies

The role of lexico-semantics studies in vocabulary learning and the development of English as a Second language can never be ignored. It has contributed to our understanding of vocabulary and meaning development, use and usage in variety of contexts. Lexico - Semantic studieshave mostly been concern with description of language use by specific people for specific purposes in specific communication contexts with a view to explaining how vocabulary items 'take on' meanings and the various meaning relations that exists therein as items are use from one context to the other and from one activity to the other. Most often in these studies, researchers painstakingly describe lexical items use as well as provided explanations as to the reasons for

their use in in such specific contexts. Therefore, an examination of these studies is relevant in the present study.

In a study, Faniran, Adetuyi and Adetuyi, (2016) examinethe grammatical and lexico semantic features of Nigeria Englishwith specific focuson its roleand intelligibility in Nigerian socio-cultural context.The study was limited to grammatical and lexico-semantic features of Nigerian English in a bilingual Speech community. The outcome of the study showed that the variety of English used in Nigeria has certain features which distinguish it from other forms of English; the features are manifested at the lexico-semantic, phonological, and grammatical and discourse levels.

Chimuanya and Awonuga, (2015) conduct a Lexico-Semantic Study of Culinary Terms in Nigerian English. Using Contextual Relativity as the theoretical framework, the study explored the use of culinary terms among the Educated Nigerian speakers of English and how it relates to intelligibility. The findings revealed that most Nigerian speakers of English do not differentiate between the uses of some of the culinary terms on the basis of their semantic properties. This was attributed to socio-cultural differences, poor knowledge of the existence of such differences and the lack of sufficient vocabulary to account for such cooking processes.

In another study, using Systemic Functional Linguistics theoreticalapproach, Okongor, (2015), conducts a lexico - semantic analysis of military language. The study was aimed at describing the language of the military as a specialized variety with distinctive features. Based on the evidences from the data collected using oral interview and observation, the findings from the study showed that the features of military language are not only distinct from all other varieties but also peculiar and relevant to those in the military profession.

Obwoge, (2014) conducts a lexico-semantic analysis ofthe language of EkeGusii circumcision social variety with particular focus on lexical choice andgender differentiaition using the Social and Constrastive Lexico-Semantic theories. The study employs participatory observation, interviews schedules, informers, questionnaire and retrospection for data collection. It was discovered that vowel lengthening and use of synonym, polysemy and antonyms play an important role in the meaning of EkeGusii circumcision social variety. Also that the lexicon comprised of nouns and verbs all of which help to define EkeGusii style and register. It was also discovered that gender is a case of socialization rather than biological.

Ehineni, (2014) examines the peculiar linguistics and stylistics element in Nigerian English print media. The data collected from some selected Nigerian English Newspaper were linguistically analysed in order to identity linguistic features. It was discovered that the features of English of Nigerian Print Media are linguistically and stylistically different from official English usage found in Nigeria educational institutions.

Robert, (2014) examines the lexico - semantic features of language of religion and advertisement and concluded that lexical and semantic features of language of religion and advertising are different from everyday use of English language.

Anna Smoliana (2013) conducts a study of semantic comprehension of lexical content of the English book jackets. The study focused on analyzing lexico-semantic properties of the language units and the relations between the lexical items. Through the application of semantic analysis, the findings showed that language on the English book dust jackets is organized in a mental lexicon with particular semantic features that were demonstrated via semantic dimensions and semantic fields.

Akinyele, (2013) examines the use of English on Lagos roads. Using lexico- semantic theoretical framework, the researcher analyzed seventy lexical items which are popularly used by commercial and private drivers, bus conductors, passengers, traffic regulation officers, okada riders, and street hawkers on Lagos roads.It was discovered that the use of English on Lagos roads varied accordingly and its lexical and semantic features are different from everyday use of English language.

In a study of lexico-semantic 'intraference' in Educated Nigerian English, Ekundayo, (2013) examines the concept and features of lexico-semantic 'intraference' in Educated Nigerian English (ENE). It was discovered that Educated Nigerians regularly impose meanings on some words, extend the meanings of words, weaken or reverse word meanings and also redeploy the lexico-semantic dynamics of the language to fabricate lexical items with new meanings or meanings already in some well established SBE words and other international varieties of English.

Emodi, (2011) examines the semantic features of language of advertisement. The researcher presented an analytical study of the language features of English advertisements at a semantic level. It was revealed that the use of connotative meaning of words, adjectives, coined words, mis-pelt words, repetition, metaphoric use of words, punning, non-existing words, and the use of ambiguous statements are semantic elements used by advertiser to achieve their persuasive ends.

Ogunleye, (2011) conducts a lexico-semantic analysis of selected speeches of Ishaq Oloyede. The study examined the use of word and sentence, word group, meaning relations and cohesive devices in five selected speeches of Is-haq. The conclusion indicated that the speeches contain

more nouns and more pronoun as word classes and different meaning relations that enhance grammatical senses.

Sule, (2011) conducted a lexico-semantic study of viewpoint column of Punch Newspaper. The study was motivated by the need to investigate the extent to which Nigerian columnists use the lexico-semantic feature of Nigerian English for their reporting purposes. Using Adegbite, (1989)'s lexico-semantic analysis approach, the outcome of the study shows that Nigerian columnists preferred to use Nigerian English with all its local flavors.

In his study, Adeyanju, (2008) employs participatory observation for data elicitation with his focus on the lexico - semantic analyses of the use of register of extortion on the Nigerian Highway. Using the speechact theory as a basis, the study discovered thatwhile politeness strategies are employed to extort money from private vehicle owners, vile expressions are used for extortion from commercial transporters.

In another study, Alabi, (2000) examines semantics of occupational lexis in Nigerian English. The study described the forms of semantic re-investment of occupational lexical items in Nigerian English from a socio - cultural framework. Based on the study, three categories and two sub categories of reinvestment identified include: shift, generalization, narrowing, reassignment and analogy.

Bamiro, (1994) examines lexico-semantic variation in Nigerian English with references to three novels written by three Nigerian writers. He identified ten categories of lexico semantics common to all despite the writers social and educational strata common to all the writers such as (a) loan shift, (b) semantic under differentiation, (c) lexico-semantic duplication and redundancy, (d) ellipsis, (e) conversion, (f) clipping, (g) acronyms, (h) translation equivalents, (i)

analogical creation and (j) coinage. The evidence from above study shows that Nigeria English cuts across social and educational strata.

Adegbija (1989) describes some aspects of lexico-semantic variation in Nigerian English within a sociolinguistic framework. He examines the causes and types of variation. Based on the study, five major lexico-semantic variation were identified: transfer, analogy, acronyms semantic shift or extension and coinage or neologisms.

Based on the studies explored above, the following key elements, common to all studies, are discussed below:

1. Lexical items are the objects of analysis

In the lexico-semantics studies examined above, the lexical item is the focus of analysis. Lexical items are analysed based on the context in which they are used as seen in Faniran, Adetuyi and Adetuyi, (2016); Chimuanya and Awonuga, (2015); Okongor, (2015); Ehineni, (2014); Obwoge, (2014) and others. The present study also examines lexical items however in contrast,it is the competenceexihibited in the learning of these lexical items that forms the basis of analysis. To this end, tests are designed to assess how much of the lexicalitems and their meanings have beeninternalized.

2. Versatility of scope of lexico-semantics studies

Evidences from the studies above has shown that the field of lexico- semantics is flexible and versatile. The study of lexico-semantics have been conducted in order to analyse use of language in nearly all situations which involves the use of language for communication. For instance, Okongor, (2015) examined military language; Obwoge, (2014) examined EkeGusii circumcision

social group language variety; Chimuanya and Awonuga, (2015) examined culinary terms etc. Furthermore, because of its versatility, a number of lexcio-semantics studies have from examined from a wide varieties of theortical frameoworks e.g., Ehineni, (2014) use linguistic and stylistics; Bamiro, (1994), and Ogunleye, (2011) use lexico-semantics; Alabi, (2000) use semantics; while Adegbija (1989) uses sociolinguistics etc. In contrast, the present study looks at lexico-semantic from the perspectives of secondlanguage learning in which deliberate attempts (such as the Keyword Strategy) are put in place to facilitate the internalization of lexical items.

2.8.6. Vocabulary Learning and Gender Differences

The study of differences between male and female achievement in language acquisition provides insight into psycholinguistics dynamics and variations which are very important in understanding human behavior. Gender differences in several areas of Second Language Acquisition and Learning have been investigated and results have confirmed that differences do exist eventhough some studies have arrived at contradictory findings in the sense that some highlight the superiority of males over females, while others emphasize female being better language learners than male and still some others demonstrate that gender is irrelevant in Second or Foreign language acquisition. Thus, results are inconclusive as a result of variability depending on aspects examined.Evidences from research studies that examined receptive and productive vocabulary knowledge have produced different conclusions. Some os these studies are examined below:

Etim, (2017) investigates the gender differences in word size and generation of abstract words, the relationship between reading interest and word size and number of books at home and vocabulary size among 270 student sampled across Five secondary schools in Jos metropolis of

Plateau State, Nigeria, Data was collected using ''*The Vocabulary Development of Secondary School Students Questionnaire''.* It was found that female word size was significantly higher than those of male subjects, that they were also able to generate more abstract words and that school type had a significant influence on word size for all subjects.

Boyle (1987) investigates the differences in comprehension of heard vocabulary between boys and girls. The outcome of the study shows that boys are superior to girls in the comprehension of heard vocabulary.

Scarcella and Zimmerman (1998) examinethe differences between males and females vocabulary recogntion and use. It was found that males performed significantly better than women in a test of academic vocabulary recognition, understanding, and use.

In some related studies, Lin and Wu (2003), Lynn et al (2005), Edelenbos and Vinjé (2000) discover that males also outperformed females in vocabulary knowledge in the foreign language (FL). In contrast, Nyikos' (1990) study shows that women performed better than men in a memorization test of German vocabulary.

Jimenez and Terrazas, (2005-2008) discovers no significant gender differences in performance in a receptive vocabulary test, while, in their studies, Meara and Fitzpatrick (2000), Jimenez and Moreno (2004) discovers that female learners performed better than males in productive vocabulary in Lex30. Additionally, highly significant differences were found in favor of females in the mean number of words produced in response to the 15 cues of a lexical availability test (Jimenez & Ojeda, 2009). In yet another study, Jimenez (2010) also discovered mixed results on gender differences or tendencies.

On the role of gender in vocabulary learning strategies, Jimenez (2003) observes that girls are superior to boys in quantitative and qualitative terms. In other words, girls used a greater number of strategies and also a wider range of strategies than their male peers. Evidences from further related studies conducted by the researcher reveals that the differences is in favour of females especially with regards to productive vocabulary in written compositions on the one hand and in the selection of word topics related to social matters on the other.

In another study of differences in performance between male and female, Grace, (2000) also concludes that there are differences in the strategies used by members of both sexes, although she reports similar results for receptive vocabulary knowledge and retention rate.

Jimenez and Ojeda, (2007) found subtle differences in the use of conventions in letter writing with girls preferring to use conventions in openings and closings. In same study Jimenez and Ojeda, (2007; 2008) also found out that female learners produced significantly more tokens than their male counterparts, and nearly significantly more types in their written compositions. However, there were very slight differences in the most common words used by girls and boys and the semantic fields to which these belong.

In a study of gender differences in the use of semantic fields, Meunier's (1995; 1996) study showsthat males were superior to females in acquiring vocabulary related to geographical facts while females were better in vocabulary pertaining to story characters.

In a similar study, Yang (2001); Jimenez and Ojeda (2007) arrive at similar conclusions which indicated that girls tend to talk about colors and kinship whereas boys prefer topic of sports and use of numbers more frequently.

From the discussions above, the following conclusions can be drawn:

1. Complexity of gender studies

It is worth noting that the aspect of gender is a complex and nuanced issue which may be context and test type specific with other third factors such as L1, age or L2 proficiency influencing them. This provides an explanation for the many contradictory as well inconclusive results regarding the role of gender in the SLA and in particular in lexical acquisition.

Despite this, it should be understood that issues of gender differences in learning is definitely an ongoing issue and will continue to be relevant in the scheme of things. Therefore, it is in recognition of this relevance thatthe present study also examines and analyses the differences in performance between males and females in the use of Keyword Strategy for lexico-semantic learning, retention and comprehension.

2.9. Theoretical Framework

This study examines the effect of Keyword Mnemonic Strategy on Second language learners' lexico-semantic learning, comprehension and retention. The theoretical framework for this study is eclectic in the sense that it is based on two prominent theories that explain the important effect of stimulating memory for retention in language learning and acquisition: (a) Paivio's (2007, 1991, 1986, and 1971), dual coding theory and Craik and Lockhart's (1972), Depth level of processing theory. These theories provide a strong base for this study.

2.9.1. Dual Coding Theory

Paivio, (2007, 1991, 1986, and 1971) puts forward a cognitive theory to explain the important effect of mental imagery on the mind, memory and learning, popularly known as the dual coding.

It was built on the idea that the formation of mental images aid teachingas well as learning, (Reed, 2010). The theory postulates the existence of ‘’two separate, but interrelated coding systems which process and store information in the memory: verbal system and nonverbal / visual system’’ (Reed, 2010; Sternberg, 2003; Marks, 1997; and Paivio, 1971; 1986). It is posited that the verbal system stores texts and sound information in sequential units called ‘’logogens’’, while the nonverbal/ visual system processes visual information such as pictures, animation and videos which are then kept in units called ‘’imagens’’. These two systems, according to the theory, are linked together through referential connections (Ramezanali, 2017; Reed, 2010; Sternberg,2003 in Sternberg, 2006)**.**

The basic assumption of the dual coding is that the two systems (verbal and nonverbal/ visual) are processed differently; however they still interact. These interactions lead to better recall (Al Seghayer, 2001; Paivio, 1991). Based on what is known about these interactions, there are three different processing levels that take place within or between verbal and nonverbal/ visual systems: representational, referential and associative processing(Paivio, (1986) and Clark and Paivio (1991). With Representational processing, verbal and visual representation are activated by a stimulus such as words and pictures; in which case words activate verbal representation while pictures activate visual representation. On the other hand, referential processing is the activation of either system by the other one, that means that images or objects activate words, and word activate images or objects. Finally, associative processing is the activation of additional information and or connection between words and sounds in the verbal system and images in the visual system.

Whatever type of processing is involved, studies have shown that words which are associated or presented with actual objects or images (that is in dual mode) are more easily and more

effectively acquired and retained than those which are presented alone because, as Paivio (1971) observed, the effectiveness of verbal stimuli is directly related to their imagery value or concreteness (Sternberg, 2006; Reiber, 1994; Clark & Paivio, 1991; Paivio, 1991; 1986; 1971).

The Keyword Strategy works on the principles of the dual coding as it provides information through two channels: verbal and non verbal/visual. With the Keyword Strategy, a strong referential association/connection between the target word and its equivalent Keyword cueis constructed so that learners, when seeing or hearing the word (verbal) are immediately reminded of the Keyword and vice versa. Furthermore, a visual/ mental image is constructed combining the referents of the Keyword and the target word, in a salient, odd, or bizarre manner in order to increase retention, (Clark & Paivio, 1991; Paivio, 1991; 1986; 1971).

In this study, the Dual Coding Theory (DCT) therefore offers a solid framework for investigating the effect of Keyword Strategy on Lexico-Semantic learning, retention and comprehension in the English as Second Language context of the present study.

2.9.2.Depth (levels) of Processing Theory

Craik and Lockhart's (1972) Depth Level of Processing Theory (DLPT) refers to ways and intensity with which information is organized, analysed and manipulated (Craik and Lockhart, (1972). According to the proponents of this theory, it is the 'depth' at which information is processed that determines its storage in the long-term memory. By 'depth' it is meant the usefulness derived/extracted from a stimulus rather than the amount of time spent on analyzing it.

The depth of processing affects memory function in the sense that information that is deeply processed leads to longer lasting memories while shallow processing, on the other hand, leads to

decay in memories. The shallow and deep level of processing therefore, represent the two levels at which information is processed.

The shallow also known as sensory processing level is the first and the lowest. It is the processing and thinking about meaning of something at the surface. For example encoding of the physical qualities of written or forms of words in terms of their looks, sound, shape and arrangement (i.e., structural, phonemic, and orthographic processing). One major issue with this level is that information can decay and hence be easily forgotten. However, in order to ensure some levels of retention at the shallow depth of processing, maintenance rehearsal, that is the use of repetition to aid retention of words, objects or information in the short memory, is employed.

On the other hand, the deep processing level is the highest and it involves thinking deeply about something which causes the memory of it to be easily accessed. It is concerned with semantic processing which entails encoding the meaning of a word and relating it to similar words, objects or situation with similar meaning, thinking about and processing the meaning of a word, or object and processing the importance of a word, object or something (Craick & Lockhart,1972; Craick&Tulving,1975). The deep processing level involves elaboration rehearsal which is a more meaningful and deeper analysis of information and leads to better recall and long term memory. For example, processing the meaning of a word, object or situation and linking or associating it to words, objects or situation with similar meaning or previous knowledge.

The depth level of processing theory provides strong bases for the study of the effect of Keyword Strategy on lexico-semantic learning, comprehension and retention in the context of this study because as much as it is accepted that committing learning materials to deeper levels enhances

retention, then it can be said that the use of mnemonics in general and the Keyword strategy in particular facilitates the achievement of this, (Craick & Lockhart, 1972; Craick&Tulving, 1975).

The Keyword Strategy facilitates deep processing as a result of the additional meaning generated by verbal and non verbal or visual clues constantly in association with the lexical items been studied. Therefore it provides the learner with additional and different processing levels. For example, the learners' brain recognizes the information to be learnt (in this case the lexical items) from different angles; they link the familiar information with the new (in this case, the Keyword clues/ association linked with the lexical items). Through this process, the learner engages in deep processing thus making the learnt material easily stored in the memory.

In addition, the Keyword Strategy also the uses maintenance and elaboration rehearsals. For instance, at the learning and retention levels, the learners engage in several activities such as repetition, matching lexical items to their Keyword clues etc which helped them to retain, recall the lexical items. At the comprehension level, on the other hand, the elaboration rehearsal facilitates their abilities to understand and complete the cloze. The learners process the meanings of the lexical items as well as link them to meaningful context in the comprehension passages.

The Keyword Strategy as used in this study facilitates shallow processing (the sensory, structural, phonemic, and orthographic) on the one hand; and the semantic deep processing on the other. First, at the shallow level, through constant repetition, the learners read, recognize, sort, organize as well as associate each Keyword clues with its appropriate to - be - learnt MAP lexical and by way of matching items based on their phonemic, sensory and orthographic

similarities. Secondly, at the semantic processing level, the learners further engage in deep processing of the meaning of the lexical items in context of cloze comprehension passages.

Both the Dual Code Theory and the Depth Level of Processing Theory have been widely used as theoretical frameworks in investigating the effects of Keyword Strategy on learning, retention and comprehension in several related studies such as, Ramezanali, (2017); Alghamdi, (2014); Hauptman, (2004); Wyra, Lawson, and Hungi, (2007); Ashoori, (2012); Saeedi and Mohajerian, (2012); Marzban and Amoli, (2012); Zarei, Hasani & Keysan, (2013); Al-Zahrani, (2011), and others. The above evidence has further validate the choice of the two theories as the framework for the present study.

Paivio's, (1963, 1971, 1986) Dual Coding Theory (DCT) is adopted as basis for analysis and interpretation of the positive effects of the Keyword Strategy on lexico-semantic learning, retention and comprehension because it involves the use of verbal connections between a lexical item and its stimulus Keyword clue. The verbal connection between a lexical item and its equivalent Keyword is made possible because of their acoustic/phonic similarities. These connections create a powerful imagery, mental or visual that interacts and also establishes a meaning connection between them. It is this process that subsequently facilitates retention and recall of lexical items learnt. These arguments have been substantiated by Ellis and Beaton (1993) and Pressley, Levin, Kupper, Bryant, and Michener (1982). For instance, Ellis and Beaton (1993) posit that ''the Keyword method makes it possible for learners to make an association between the foreign word and the Keyword through an interactive image''. On the other hand, Pressley, Levin, Kupper, Bryant, and Michener (1982), posit that in the Keyword method, a phonetic link is made between the target item and the Keyword and an interactive image makes

the meaning connection between them and due to the imagery linkage, learners' retention of definitions.

As a tool for analysis, test items design, scoring and analysis are designed in such a way to reflect the dual code. For instance, the WRLRT test items used in this study is built on the dual code because, it requires the subjects not only to recognize, retain and recall the meaning of each item in the test by choosing an option from lists of option provided but also be able give the Keyword association/clue that identifies the word. In scoring the test, therefore, a mark is awarded for recognition, retention and recall of definitions and equivalent Keyword clues. In the analysis, items in which the definitional meaning and the Keyword clues correspond are considered in the analysis as representing correct instances of effective learning and retention. In essence, the Keyword clues/associations are constantly in connection/ interaction with their equivalent lexical items on the one hand and likewise with the meaning of lexical items as well on the other. These association/interactions are very effective for learning, retention and recall in the sense that one mode triggers the memory of the other. In other words, when a lexical item is forgotten, the Keyword clue/association will aid instant recall and retention and vice versa. It is therefore true to say that because the Keyword Strategy enables the learners to connect lexical items to acoustically similar Keyword equivalents and the resultant visual or mental imagery created (dual code), retention and recall is facilitated.

The analysis of the results obtained on test of Lexico-Semantic comprehension using the cloze passage test is, however,based on the Depth Levelsof Processing Theory (Craick & Lockhart, 1972; Craik & Tulving, 1975). The Depth of processing theory posits that the more information is deeply processed, the more the information becomes stable, retained, and understood. According, to the Depth of processing, information is processed at the sensory, phonological and

semantic levels. The Cloze comprehension passages test used in this study allow for deep level of processing at the sensory, phonological, and semantic levels. These three levels of processing are not only implied in the Cloze comprehension passages but also are the basis for the analysis of what entails lexico-semantic comprehension which is an important variable being investigated in this study. It is therefore true to say that because the cloze comprehension passage test provides the learners with opportunity to deeply process lexical items already retained

CHAPTER THREE

METHODOLOGY

3.0. Preamble

The chapter focuses on the research methodology. It explains and describes the research design, research paradigm, samples, data collection techniques, and methods of data analysis used in the study.

3.1. Research Design

This study adopts the experimental research design whichinvolves a systematic procedure for testing a hypothesis by setting up a situation in which the strength of the relationship between variables can be tested. In its strict sense, most often, experimentation is associated with the laboratory in which the strength of a chemical solution is compared with that of another. However, when dealing with human beings, such experimentation is not often very easy, hence a quasi-experiment design which uses intact group of students as sample is adopted for this study.

3.1.1. Validity of Research Design

In the present study, in order to ensure validity of the research design the researcher used multiple testing at two levels or stages, i.e. pre-test and post-test. At each of these levels, a variety of test items were designed to measure the learning, comprehension and retention of lexico-semantic items using the discrete test and integrative test formats respectively.

3.1.2.Reliability of Research Design

To ensure reliability in the design of the study, the researcher provided detailed account of actions and procedures taken during the quasi experimental research which include details about

research methodology, sample and sampling technique, research procedures, test techniques and so on.

3.1.3. Transferability or Generalizability of Research Design

In the present study, the aim of the researcher is to investigate the effect of Keyword Strategy on the learning, comprehension and retention of words and their meanings so as to improve vocabulary development and as well as improve existing practices in language learning. It is possible to generalize and transfer the findings to similar settings in the Nigerian context because the subjects are representative of undergraduate ESL learners in Nigeria.

3.2. The Subjects

The subjects are selected from the 2015/2016 academic year undergraduate programmeThe samples consisted of three hundred second year undergraduate ESL learners in the Department of English, Federal College of Education Kano which is a degree-awarding institution affiliated to Ahmadu Bello University, Zaria.. The subjects are multilingual and share similar characteristics with regards to the position, role of English and learning experiences i.e., similar context, language content, methods and techniques and share a similar socio-cultural background. The undergraduate ESL were selected using purposive sampling. They were divided into six groups of fifty students each for the purpose of convenience using random raffle draw.

3.3.Research Variables

The term ‘’variable’’ may refer to a logical set of attribute-dependent and independent variables in statistics. The independent variable is typically the variable representing the value being manipulated or changed and the dependent variable is the observed result of the independent

variable being manipulated. In this study, the independent variable is the Keyword Strategy used while the dependent variable is the observed change in students' learning, comprehension and retention abilities.There are, however, a number of unforeseen /uncontrollable variables outside the classroom that are beyond the control of the researcher; for example, the teacher has little or no control on what the students do outside the classroom in terms of how much time they spend on their study and the kind of effort they put into their study. Some students learn during the study period conscientiously while some do less and others nothing at all.Therefore, some controls have to be sacrificed because of the real-world constraints (McDonough & McDonough, 2001). These uncontrollable variables are an accepted part of the research. **(mcdonough, j& mcdonough, s(2001) Resaerch methods for English language teachers.londonAnorld)**

3.4. Instrument for Data Collection

3.4.1. Survey

A questionnaire titled ''Survey of Awareness and Use of Lexical Learning Strategies''(SAULLS) seeks to find out about awareness, types and frequency of use of lexical learning strategies by the undergraduate ESL subjects. It contains 15 item questions drawn based on Schmitt's (1997) taxonomy of vocabulary learning strategies that include: Cognitive, Social, Metacognitive, Memory, Compensation and Determination strategies. The responses were rated according to a scale of five choices on a likert-scale where: never is 0 point; seldom is 1 point; sometimes is 2 points; often is 3 points; and always is 4 points.

3.4.2. Test

. As a measuring device, the tests provide a means of finding out the changes brought as a result of experimentation. The two types of test used in this study for the purpose of data collection are discrete point and integrative tests. The two are discussed below.

a. **Integrative Test**

The integrative test used in this study is the Cloze Comprehension Test Procedure (CCPT) which is used to measure comprehension of MAP lexical items. In the cloze comprehension passage every fifth, ninth or eleventh word is deleted and the test, which was administered at both the pre-test 2 and post-test 2, measures the comprehension of about twenty (25) to thirty (30) lexical items each selected from all the Medicine, Agriculture and Photography (MAP) word lists. These lexical items are contextualized in cloze comprehension passages that were designed to test comprehension. The subjects were asked to show their comprehension by completing the missing blanks or 'cloze' with the appropriate lexical items as demanded by the task by choosing from options lettered A to D / E.

b. Discrete-Point Test

A discrete-pointprocedure tests language skill or component discreetly as an independent construct (Read, 2000). The Word Learning, Retention and Recall Test (WLRRT) use in this study is a discrete test designed to assess word recognitionlearning, and retention of the MAP lexical field items. The WLRRT, which was administered at both the pre-test1 and post-test1, consists ofone hundred (100) lexical items per each lexical field. These lexical items are contextualized in sentences as test of definition recall using the multiple-choice testformat. The target lexical items were scripted in bold font in each sentence and the students were asked to provide the equivalent Keyword clues for the item in a space and then to choose the answer that best represents the definition of the word from the options A to E provided.

3.5. Relationship of Test Items Used in the Study

The test items contained in the WLRRT and the CCPT used at the pre-tests and post-tests are tests of similar and equivalent forms. Therefore, pre-test 1 and post-test 1 are tests of lexico-semantic learning and retention, while pre-test 2 and post-test 2 are tests of lexico-semantic comprehension. The relationship between the test items is complementary such that success in learning and retention of MAP lexical items tasks is a requisite for successful completion of the cloze comprehension tasks. The lexical items used in this study were randomly selected by the subjects from various English language dictionaries of registers of Medicine, Agriculture and Photography. There are fifty lexical items in each lexical field (MAP),while the fifty lexical items were tested at WLRRT, only twenty five and above items were tested each in CCPT.

3.6. Scoring and Grading of Tests

The answers elicited on the learning, retention and comprehension tests were scored, graded and evaluated by the researcher. The criteria used for determining acceptability of answers include:

i. The WLRRT, which is multiple choice test, requires the undergraduate subjects in this study to provide, in the spaces provided after each lexical items, the Keyword clue for the MAP lexical items whose meaning learning and recognition and retention is sought.

ii. The target lexical item meaning being tested in the WLRRT must be its denotative meaning not connotative.

iii. The CCPT, which is a cloze comprehension passage, requires the undergraduate subjects to fill-in-the gaps with the appropriate MAP words that best complete the cloze.

iv. In scoring the WLRRT test, a mark is awarded for both recall of definition and recallof Keyword association only. Items in which only one of the two is recalled are rated as fail. Furthermore, guessing, is also penalized.

3.7. Research Procedures

For the purpose of this study, lexical items were randomly drawn from the Medicine, Agriculture and Photography lexical fields respectively. The choice of these lexical items was informed by the desire to facilitate the use of lexical items for specific purposes and in a variety of contexts that cuts across disciplines and genres.

In order to develop the subjects' independent thinking abilities, the word list as well as their Keyword clues used in each of the field were compiled by the subjects, i.e., the student- created design approach was adopted. The approach was favoured because the subjects are deemed mature enough to take responsibility for their learning. Moreover, the fact that the subjects are going to use the Keyword clues/associations for lexico-semantic learning made the choice of the approach appropriate.

There were a total number of 300 undergraduate ESLlearnerswho participated in the study. The subjects were purposefully selected because, at the time of the study, they were offering a Reading and Writing course in Language Art. The subjects were randomly grouped into six groups consisting of fiftyparticipants each using a raffledraw. The keyword associations/clues for learning the lexical items of MAP were design by the undergraduate learners at the group level. Each group was made to design 50 (fifty)Keyword association/clues for learning fiftywords in each of thethree lexical fields. An initial one hundred and fifty (150) Keyword associations/cues were created in each group for the three MAP lexical fields based on the criteria of Fifty Keywords per lexical field. The total amount for all groups equals nine hundred (900) Keywords clues.

The initial Keywords clues/associations created by the undergraduate ESL subjects were interestingly influenced by the phenomenon of code mixing (see appendices I for detailed lists of Keywords). However, because there were some forms of overlapping, reduplication and similarities in the Keyword clues, a systematic process of selection, analysis, elimination, substitution was applied to solve the problem. Using this system, Keyword clues that were considered 'weak' were substituted with 'strong' ones. The determination of 'weak' and 'strong' or 'effective' Keyword clues were based on what is known about the characteristic of effective and successful keyword clues such as phonemic similarity, bizarreness, interactivity, simplicity, exaggeration, uniqueness, creativity, involvement and sensory appeal (Levin, 1996; Hauptmann, 2004). Through this process, effective keyword clues were selected for the one hundred lexical items in each MAP lexical fields.

The treatment involves the use of the Keyword associations in learning the MAP lexical items during lecture hours. The undergraduate subjects practiced their MAP and their equivalent keyword clues using rehearsals through elaboration, repetition, matching of lexical items with their Keyword association,

As part of the research procedure, tests were administered fortnightly to the subjects in their various groups. They were tested on lexico-semantic learning and retention of MAP lexical items with their associated Keywords clues through the WLRRT multiple choice test items that measuresrecall of definition. On the other hand, the test of lexico-semantic comprehension was measured using the CCPT which is a cloze test. Several cloze comprehension passages on English for a specific purpose i.e., registers of Medicine, Agriculture and Photography (MAP) are used. The choice of these lexical items was informed by the desire to facilitate the use of

lexical items for specific purposes and in a variety of contexts that cuts across disciplines and genres.

The test items included in the test of learning, retention and recall are designed by the researcher, while the cloze comprehension items are mostly adopted from the West African Examination Council (WAEC) past question papers. The test items are marked by the researcher and research assistants who were given training on scoring procedures. The results obtained from both the pre-test and the post-test are discussed in chapter four of this study

3.8. Testing Levels

3.8.1. The Pre-Tests

To determine the effect of the Keyword Strategy on lexico-semantic learning, comprehension and retention, a pre-test consisting of items from the WLRRT and CCPT was administered at the beginning of the study. The pre-tests were administered to all the subjects in their various groups. The objective of the pre-tests (1&2) was to measure the subjects' entry behaviour as it relates to their level of learning, comprehension and retention of the MAP lexical items prior to the use of the Keyword Strategy.

3.8.2. The Post-Tests

The post-tests carried out after the experimentation were equivalent forms of the pre-tests. But unlike the pre-tests, the post-tests were designed to assess the impact of Keyword Strategy on lexico-semantic learning, comprehension and retention. The post-test of WLRRT also assessed definitionlearning,retention and recall while the post-test of CCPTmeasured comprehension of words and their meanings in context.

3.9. Method of Data Analysis

The analysis of data from the study was conducted in two parts using qualitative and quantitativestatistical measures.

The first part is the analysis of the result of the data collected from the Survey of the extent of Awareness and Use of Lexical Learning Strategies (SAULLS) which is an adaptation of Schmitt's (1997) Vocabulary Learning Strategy (VLS). The responses to the survey questionnaires on awareness of lexical strategies are rated on a scale of two choices on the Likert scale that is Aware (+AW) and Not Aware (- NA) while responses on use of lexical strategies were rated on scale of five choices on a Likert-scale where: never is 0 point; seldom is 1 point; sometimes is 2 points; often is 3 points; and always is 4 points.

Furthermore, for ease of collation, the responses for Lexical Strategy Awareness weregrouped under the following major headings: Aware (AW) and Not Aware (NA), while those related to Use of Strategies were grouped as Frequently Used Strategies (FUS) and Not Frequently Used Strategies (NFUS). As used in this study, the Frequently Used Strategies (FUS) responses were represented by the following choices: Sometimes (2 points); Often (3points) and Always (4 points), while Not Frequently Used Strategies (NFUS) are represented by choices: Never (0 point) and Seldom (1 point). Similarly, AW choices were regarded as positive responses while NA were regarded as negative responses. The number of occurrences of each choice was counted and the total percentages were calculated so as to provide answer to Research Question 1. The analysis of the result of survey was conducted under two headings: (i) Analysis of survey of Awareness of Lexical Learning Strategies and (ii), Analysis of the Use of Lexical Strategies.

The second part is the analysis of test results obtained from the WLRRT and CCPT tests which were administered at pre-tests (1&2) and the post-tests (1&2) respectively.

The pre-tests and thepost-tests answer scripts on test of lexico-semantic learning, comprehension and retention of MAP lexical items for each undergraduate ESL subject in each group were marked and graded. The correct responses were allocated one (1) mark, while the wrong responses were allocated zero (0) mark. The total number of correct responses for each subject on MAP was recorded under each group. These scores were added up to provided the cumulative total scores for each group. The cumulative scores for each group were analysed using both qualitative and quantitative measures. Finally, for each test level of analysis, samples of raw scores obtained by the subjects on MAP in each group were randomly selected and presented as evidence. The selection is random on the basis of first five (5) raw scores in each for each. The test results were used to answer Research Questions 2, 3.4 and 5 respectively. In response to Research Question 2 therefore, the analysis was carried out under the following sub headings:

i) The analysis of the differences in students' lexico-semantic learning and retention of MAP lexical items between pre-test 1 and post-test 1,

ii) The analysis of the differences in students' lexico-semantic comprehension of MAP lexical items between Pre-test 2 and Post-test 2.

iii) The analysis of the MAP lexical items in which the subjects scored the highest was done under sub heading below:

   a. Analysis within pre-tests 1 & 2;

   b. Analysis within post-tests 1&2;

   c. Analysis between pre-test 1& post-test 1; and

   d. Analysis between pre-test 2 & post-tests 2 respectively.

iv) Analysis of percentage number of subjects who passed some lexical items in each of the MAP lexical field.

v) The analysis of the differences in scores between males and females in the study group. In order to determine these differences, a random sampling of scores obtained on WLRRT and CCPT by 50 males and 50 females was conducted. These scores were summed up and their means calculated. The differences in scores were reflected in the mean.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.0. Preamble

This chapter presents the analysis of the results collected from the survey of awareness and frequency of use lexical strategies and the results obtained from tests of Word learning, Retention and Recall Test (WLRRT) as well as test of comprehension using the Cloze Comprehension Passage Test (CCPT). The analysis of results is divided into two parts: analysis of survey results; and analysis of test results. All calculations were done using Simple Percentages and Mean statistics.

4.1. Analysis of Survey Results

This level of analysis highlights the extent of awareness and use of lexical strategies by the the students. Therefore, a survey was conducted and the results are presented in Tables 4.1 and 4.2 respectively below.

Table 4.1:Results of the Survey of Lexical Strategies Awareness (SLSA), N=300

Lexical strategies types	Num. of Subjects	AW	%	N AW	%
Dictionary Strategy	300	300	100	-	-
Translation Strategy	300	300	100	-	-
Context Strategy	300	300	100	-	-
Word Cards Strategy	300	300	100	-	-
Interaction Strategy	300	300	100	-	-
Acronym Strategy	300	300	100	-	-
Keyword Strategy	300	300	100	-	-
Bilingual Dictionary Strategy	300	300	100	-	-
Word Analysis Strategy	300	300	100	-	-
Synonymy/Antonyms Strategy	300	300	100	-	-

Key: AW= Aware of lexical strategy type listed; NAW=Not Aware of lexical strategy type listed

The results of the Survey of Lexical Strategy Awareness in Table 4.1 above shows that for all strategy types surveyed, that is dictionary, translation, context, word card, interaction, acronym, keyword, bilingual dictionary, word analysis, and synonyms/antonyms strategies, there is 100% level of awareness of each, which implies that the undergraduate ESL subjects know about all the strategies surveyed.

Table 4.2:Results of the Survey of the Frequency of Use of Lexical Strategies N=300

Strategy description	Items	Category	Frequently used	%	Not Frequently	%

			choices N=300		used. N=300	
I skip or pass the new word	1	MET	-	-	10	3.33
I try to make a sentence with the word.	2	COG	-	-	40	13.33
I use word cards	3	MET	-	-	100	33.3
I use translation	4	SOC	-		50	16.7
I use acronyms	5	MEM	74	24.7	-	
I use keyword clues	6	MEM	24	8	-	
I use the dictionary.	7	DET	100	33.3	-	
I use labels	8	COG	-		38	12.7
I use context clues	9	DET	70	23.33	-	
I ask my friends	10	SOC	-	-	62	20.7
I use synonyms and antonyms	11	MEM	10	3.33	-	-
I make list of words and memorize them.	12	MEM	10	3.33	-	-
I use bilingual dictionary.	13	DET	5	1.7	-	-
I analysed the word verbally	14	DET	1	0.33	-	-
I study the sound of words.	15	MEM	6	2	-	-

Keys: MEM=Memory Strategy; DET=Determination Strategy; SOC=Social Strategy; COG=Cognitive Strategy; MET=MetaCognitive Strategy

To analyse the results obtained from the survey of lexical strategy use, the strategy descriptions in the 15 item questionnaire grouped according to the five main categories proposed by Schmitt (1997) namely Determination (DET), Social (SOC), Cognitive (COG), Memory (MM), and Metacognitive (MET) Strategies.Basedon these categorizations therefore, the result of the analysis of the use of strategies for lexical learning presented in Table 4. 2 above shows that with individual items the Most Frequently Used Strategies fall under two major categories, namely Memory (MEM) and Determination (DET) strategies.

Table 4.2 also shows that the highest percentage (33.3%) on individual item basis is recorded for Item 7: 'I use the dictionary' which is a Determination Strategy. This is followed by another DET Strategy Item 9: 'I use context clues' (25.33%). Item 5: 'I use acronyms' (24.7%) which is a MEM Strategy follows.

Other results for MEM Strategies are: Item 6:'I use Keyword clues (8%); Item 11:'I use synonyms and antonyms' (3.33%); Item12: 'I make list of words and memorize them' (3.33%) and Item 15:'I study the sound of words' (2%).

However, the Not Frequently Used Strategies are: Metacognitive (MET)Strategies as seen in the reponses on:Item3: 'I use word cards' (33.3%) and, Item 1: 'I skip or pass new word (3.33%); Cognitive (COG) Strategies e.g., 'I try to make sentence' (13.33%) and 'I use label' (12. 7%); Social (SOC) Strategies e.g. 'I ask my friends/teacher, (20.7%) and 'I use translation' (16.7%) etc.

In response to Research Question 1, therefore, the result of the analysis of the survey shows that the undergraduate ESL subjects frequently use the Memory and the Determination Strategies.

4.2. Analysis of Test Results

The analyses of the significant differences in scores obtained on Word Learning,Retention and Recall Test (WLRRT) and Cloze Comprehension Passage Test (CCPT) at the pre-tests and the post-tests are presented in the tables below. The results from the two tests types were analysed separately. In addition, each test analysis is followedby a preliminary table which contains samples of randomly selected raw scores obtained by the subjects on the test tasks.

4.2.1. Analysis of Test Results Obtained at Pre-test 1 and Post-test 1 of WLRRT

The analyses presented in 4.2.1 and 4.2.2 provided answers to Research Question 1.

Table 4.3:Samples of Raw Scores Obtained at Pre-Test 1 and Post-Test 1 of WLRRT

Subj., numb	PRT1 SCORES out of 25			PST1 SCORES out of 25		
	M	A	P	M	A	P
1037	9	7	6	24	12	21
2094	8	7	9	19	21	20
2032	8	11	7	12	18	21
2017	6	03	7	17	24	15
2081	8	09	7	21	17	22
1003	9	07	10	20	19	18
1014	8	09	10	21	24	21
2049	10.5	05	6.5	24	21	23
1033	6.5	10	10	20	21	24
2008	10	11	11	19	22	23
2001	9.5	09	08	23	23	25
1057	10	12	10	23	23	24
2047	11	14	10	22	24	22
2077	10	10	11	21	22	24

1034	09	10	09	19	24	24

Keys: PRT1= Pre-test 1; PST1= Post-test1

Table 4.3 above shows the scores obtained by the undergraduate ESL subjects on test of retention and recall of MAP lexical items using the Word learning,Retention and Recall Test(WLRRT) multiple choice definition recall type test. Looking at the table on its face value, it is evident that at pre-test 1 of WLRRT of Medicine lexical items, the following undergraduate ESL subjects in the study group (i.e., S1037, S2094, S2032, 52017, S2081, S1025, S1003, S1014, S2049, S1033, S2008 and S2001) obtained the following scores 9; 8; 8; 6; 8; 9; 8; 10.5; 6; 10; and 9.5 respectively. Generally, at pre-test 1, the scores were not only lower but were also limited to the following ' not so technical' and common' words of Medicine namely: *Nutrition, Disease, Patient, Pharmacy, Thermometer, Blood, Victim, Doctor, Nurse, X-ray, Discharge, Syringe; Vaccines, Stethoscope, Fever, Symptoms, Dosage, Drugs, and Stretcher.*

In comparison, the scores obtained by the same undergraduate ESL subjects on the same item at post-test 1 are 24;19;12;17;21;20;21;24; 20; 19 and 23. It is evident that thesubjects performed much betterat the post-test, in comparison to thepre-test. This implies that more lexical items were learnt as a result of the treatment. Generally, it is evident that at post-test 1, because of the treatment condition, the scores were not only higher but were also evenly spread across all the fifty lexical items of Medicine learnt irrespective of their complexities. Some examples of complex Medicine lexical items whose meanings and their equivalent keyword clues were successful learnt as indicated from the scores obtained at post-test 1 include:

Tranquilizer, (tankoliza); Ophthalmology,(Up tamo ji); Influenza, (in flew zem) ; Radiology, (radio); Enema,(Ene my); Hemorrhage, (hamoraj); Prognosis, (furaganose); Antibiotics,(anty

bayo thicks); Antidote,(anti doti); Amnesia, (am esha); Convulsion (Kam bal sho) ; Surgery,(sir jir); Surgeon, (sir G.O) etc.

The results of test of WLRRT of Agriculture lexical items at the pre-test 1 show that the same undergraduate ESL subjects (i.e., S1037, S2094, S2032, 52017, S2081, S1025, S1003, S1014, S2049, S1033, S2008 and S2001) obtained the following marks: 7;7;11;03;09;07;09;05;10;11; and 09. Generally, at pre-test 1, the scores were not only lower but were also limited to the following 'not so technical' and 'common' words of Agriculture namely: *Nursery, Acre, Cultivation, Soil, , Subsistence, Squatter, Agriculture, Rake, Forestry Fertilizer, Beekeeping, Arable crop, Tractor,Pests, Drought, Manure, Irrigation,*

In comparison, the scores obtained by the same undergraduate ESL subjects on the same item at post-test 1 were:12;21;18;24;17;19;24;21;21;22; and 23. It is evident that the scores obtained at the post-test, in comparison to those obtained on the pre-test, were relatively higher. This implies that more lexical items were learnt as a result of the treatment. Generally, it is evident that at post-test 1, because of the treatment condition, the scores were not only higher but were also evenly spread across all the fifty lexical items of Agriculture learnt irrespective of their complexities. Some examples of complex Agriculture lexical items whose meanings and their equivalent keyword clues were successful learnt as indicated from the subjects' performances atthe post-test 1 include:

Brucellosis, (burus loses); Quarantine, (karanti); Hacienda, (haciyanda); Horticulture, (hot it kalcha); Lumbering, (lambari); Grange,(garanji); Stumping,(sit on P); Mulching,(munchi); Hectare,(heycar); Salinity,(sa'ilati); Hybridization,(ibidizashun); Terrain,(taraini); Plough,(fulawu); Agronomist,(agara know miss); Sapling, (sapalis); Agrarian,(agarariya);

Grafting,(garafiti);Shrubs,(sherobs); Heterozygous,(itazogos); Homozygous,(hamazagos); Pollination,(polina sho); Compost,(come pos); Weeding,(we thee); Harrower,(harawa) breeding,(biridi); seedling,(see the li); fallow,(palo), Husbandry,(Us been dri) and so on.

The results of WLRRT of Photography lexical items at the pre-test 1, also shows that the following undergraduate ESL subjects (S1037, S2094, S2032, 52017, S2081, S1025, S1003, S1014, S2049, S1033, S2008 and S2001) obtained the following marks: 6;9;1;7;7;10;10;6,5;10;11 and 08. Generally, at pre-test 1, the scores were not only lower but were also limited to the following 'not so technical' and 'common' words of Photography such as:

Enlargement, Picture, Reprint, Camera, Album, Studio, Black and White, Photograph Photographer, Frame, Say cheese, Photo, Film, Snapshot, Snap, Pin-up, Image, and Photogenic,

In comparison, the scores obtained by the same undergraduate subjects on the same item at post-test 1 were : 21;20;21;15;22;18;21;25;24;25; and 25. It is evident that the scores obtained at the post-test, in comparison to those obtained on the pre-test, are relatively higher. This implies that more lexical items were learnt as a result of the treatment. Generally, it is evident that at post-test 1, because of the treatment condition, the scores were not only higher but were also evenly spread across all the fifty lexical items of Photography learnt irrespective of their complexities. Some examples of complex Photography lexical items whose meanings and their equivalent keyword clues were successful learnt as indicated from the scores obtained at post-test1 include:

Flare,(filaya);Toning,(tony);Wetting,(wetin);Anti-flicker,(antifilika);Grainy,(garini); Telephoto,(tell foto); Panorama,(fanrama); Aperture,(apache); Viewfinder,(vipanda); Half tone,(habto); Positive image,(fouzttif imaj); Megapixel,(mega PZL) Underexposure,(unda is for sure) Camera shy,(can my shai); Extender, (Ikztanda); Shutter, (shata); Developer,(the velopa); Focus,(4 cars) Candid photo,(kandi foto); Composition,(kampozee) Photo bomb,(futobom) Fixer,(pikza.); Opaque ,(opek); Lens,(lins) Red eye,(ridi I); Exposure,(isposha); Tripod,(tree pud); and Darkroom,(dakarum).

Table 4.4 below shows the summary of the differences in scores on test of WLRRT between pre-test 1 and post-test 1. The Mean of scores at the pre-test is 17.3200, while the post-test is 43.4333.

Table 4.4: Mean Differences on WLRRT between Pre-test 1 and Post-test 1

Variables	Test	N	Mean
MAP	Pre-test 1 of WLRRT	300	17.3200
MAP	Post-test 1 of WLRRT	300	43.4333

Based on the above, it is concluded that there are significant differences in the performance of the undergraduate subjects on test of WLRRT at pre-test 1 and post-test. The scores at the post-test1 scores are higher which implied the subjects' performances at the post-test is better in which case more lexical items, their meanings and their equivalent keyword clues have been successfully internalized by the subjects. Therefore, the study concludes that there is a significant Mean differences in the pre-test and post-test scores obtained by the undergraduate ESL subjects in this study which implies that more words have been learnt at the post-test.

4.2.2. Analysis of Test Scores Obtained on CCPT Test at Pre-test 2 and Post-test 2

This is the analysis of the scores on test of comprehension (CCPT) of the MAP lexical items. Table 4.5 below presents the samples of randomly selected scores obtained by the undergraduate ESL subjects on test of CCPT at pre-test 2 and post-test 2

Table 4.5:Samples of Raw Scores Obtained on CCPT at Pre-test 2 and Post-test 2

SUBJ., NUMB	PRT Score M			PRT Scores A			PRT Scores P			PST Score M			PST Scores A			PST Scores P		
	CP1	CP2	CP4	CP4	CP5	CP6	CP1	C3	CP4	CP1	CP2	CP4	CP4	CP5	CP6	CP1	CP3	CP4
S2094	3/13	4/8	3.5/8/	2/8	6.5/15	5/8	5.5/15	3.5/9	6/12	8/13	6/8	8/8	7.5/8	15/15	8/8	14.5/15	9/9	8/12
S2032	3.5/13	3/8	2.5/8	4/8	3/15	3/8	1/15	3.5/9	7/12	10/13	8/8	7.5/8	8/8	13.5/15	8/8	15/15	7/9	8/12
S2017	5/13	4.5/8	2.5/8	2.5/8	6.5/15	3/8	7/15	3/9	7/12	11.5/13	8/8	8/8	6/8	14.5/15	8/8	14/15	8.5/9	12/12
S2015	3/13	1.5/8	3/8	1/8	4/15	2/8	5/15	3/9	3/12	12/13	7.5/8	8/8	7/8	12/15	7/8	14/15	8/9	12/12
S1025	2.5/13	4/8	3/8	2.5/8	5/15	2.5/8	5/15	4/9	3/12	9/13	8/8	8/8	8/8	11.5/15	6.5/8	14/15	7.5/9	12/12
S2081	4/13	2.5/8	3/8	I/8	3.5/15	4/8	4/15	2.5/9	4/12	12/13	8/8	7/8	8/8	12/15	7.5/8	10/15	8.5/9	7/12
S1037	5/13	3/8	1/8	0.5/8	2.5/15	3/8	5.5/15	3.5/9	6/12	13/13	7/8	8/8	7.5/8	12/15	8/8	14.5/15	8.5/9	7/12
S1033	6.5/1	3/8	2/8	1.5/	3/15	2/8	6/15	2/9	5/12	11.5	6/8	8/8	8/8	14/1	7.5/	14.5	8.5/	12/1

	3			**8**						**/13**				**5**	**8**	**/15**	**9**	**2**
S1014	**3.5/13**	**3.5/8**	**1.5/8**	**2/8**	**5/15**	**3/8**	**5.5/15**	**3.5/9**	**6.5/12**	**8/13**	**8/8**	**8/8**	**8/8**	**15/15**	**8/8**	**14/15**	**9/9**	**10.5/12**
S2008	**2.5/13**	**3/8**	**2/8**	**3/8**	**4/15**	**3/8**	**5/15**	**2/9**	**7/12**	**12/13**	**8/8**	**7.5/8**	**7/8**	**12/15**	**7.5/8**	**13/15**	**7/9**	**10/12**
S2001	**5/13**	**2/8**	**3.5/8**	**3.5/8**	**5/15**	**2/8**	**3/15**	**3/9**	**4/12**	**9.5/13**	**7.5/8**	**8/8**	**7.5/8**	**11.5/15**	**6.5/8**	**12/15**	**9/9**	**11.5/12**
S1057	**3/13**	**1.5/8**	**1.5/8**	**2/8**	**4/15**	**2/8**	**6/15**	**2.5/9**	**3/12**	**10/13**	**8/8**	**8/8**	**7/8**	**12/15**	**7/8**	**13/15**	**8.5/9**	
S2047	**4/13**	**3.5/8**	**2.5/8**	**2/8**	**5/15**	**2.5/8**	**4/15**	**3.5/9**	**3.5/12**	**10/13**	**8/8**	**7/8**	**6.5/8**	**15/15**	**8/8**	**12.5/15**	**7.5/9**	**12/12**
S2077	**2//13**	**2/8**	**4/8**	**2.5/8**	**3/15**	**3/8**	**5/15**	**2/9**	**2.5/12**	**12/13**	**7/8**	**7.5/8**	**7/8**	**14.5/15**	**7.5/8**	**13/15**	**8/9**	**11/12**
S1034	**5/13**	**6/8**	**1.5/8**	**1/8**	**4.5/15**	**3/8**	**5.5/15**	**2/9**	**8/12**	**13/13**	**8/8**	**8/8**	**8/8**	**14.5/15**	**8/8**	**13/15**	**8.5/9**	**12/12**

Keys: S=Subject; CP= Comprehension Passage; PRT2=Pre-test 2; PST2=Post-test2

Table 4.5 above shows the scores obtained by undergraduate ESL subjects on test of comprehension of MAP lexical using the Cloze Comprehension Passage Test (CCPT).

At pre-test 2 of Medicine lexical items , for example, the following undergraduate ESL subjects in the study group (S2094, S2032, 52017, S2015 and S1025) obtained these scores ; 3/13; 3.5/13; 5/13; 3/13; and 2.5/13 respectively on CP1 of Medicine lexical items. These scores are relatively lower compared to the scores on the post-test. This phenomena is evident across all Medicine lexical items tested in the other comprehension passages (e.g., CP2 and CP4). Generally, at pre-test 2, the scores on comprehension of MAP are not only lower but are also

limited to the following 'not too technical' and 'common' words of Medicine such as: *Headaches, Sick, Laboratory, Tablet, Pharmacist, Casualty, Victim, Nurse, Stretcher, Nutrition, Disease, Patient, Pharmacy, Thermometer, Blood, Doctor, Nurse, X-ray, Discharge, Syringe; Vaccines, Stethoscope, Fever, Symptoms, Dosage, Drugs, and Stretcher.*

In contrast, the scores obtained by the same undergraduate ESL subjects on the same item at post-test 2 are: 8/13;11.5/13;9/13;10/13 and 12/13. The post-test scores are generally higher and this is evident across all Medicine lexical item tested in the other comprehension passages at this level. (e.g., CP2 and CP4). This signifies that the meanings of more lexical items have been understood as a result of the treatment. Generally, it is evident that at post-test 2, because of the treatment condition, the scores are not only higher but the comprehension of these lexical items are also evenly spread across all the twenty five or more lexical items of Medicine treated in the passages irrespective of their complexities. Some examples of complex Medicine lexical items treated in the passages and for which more scores were obtained include: *Tranquilizer, Ophthalmology, Influenza, Radiology, Enema, Hemorrhage, Prognosis, Antibiotics, Antidote, Amnesia, Convulsion, Surgery, Surgeon, Bacterial, Influenza, Inflammations, Antibiotics, Mortality, Microscope, Sterilizing, Prescription, Casualty, Clinical, Anti tetanus, Vaccines, Immunize, Organism, Diagnose, etc.*

The results of Agriculture lexical items tested showsthat at pre-test 2, the following undergraduate ESL subjects (S2094, S2032, 52017, S2015, S1025, S2081, S1037 and S1033) obtained these scores: 2/8; 4/8; 2.5/8; 1/8; 2.5/8;1/8; 0.5/8 and1.5/8 on CP4 of Agriculture lexical items These scores are relatively lower compared to the scores on the post-test. This phenomena is evident across all Agriculture lexical items tested in the other comprehension passages (e.g., CP5 and CP6). Generally, at pre-test 2, the scores on comprehension of Agriculture lexical item

are not only lower but are also limited to the following 'not too technical' and 'common' words of Agriculture such as: *Nursery, Acre, Cultivation, Soil, Squatter, Agriculture, Rake, Forestry, Fertilizer, Beekeeping, Arable crop, Tractor,Pests, Drought, Manure, Irrigation, Pests, Labourers, Plants, Food, Farming and others*

In contrast, the scores obtained by the same undergraduate ESL subjects on the same item at post-test 2 are: 8/8'8/8; 6/8; 7/8; 8/8;8/8;7.5/8 and 8/8. The post-test scores are generally higher and this is evident across all Agriculture lexical item tested in the other comprehension passages (e.g., CP5 and CP6). This signifies that the meanings of more lexical items have been understood as a result of the treatment. Generally, it is evident that at post-test 2, because of the treatment condition, the scores are not only higher but the comprehension of these lexical items are also evenly spread across all the twenty five or more lexical items of Agriculture treated in the passages irrespective of their complexities. Some examples of complex Agriculture lexical items treated in the passages and for which more scores were obtained include: *Brucellosis, Quarantine, Hacienda, Horticulture, Lumbering, Grange, Stumping, Mulching, Hectare, Salinity, Hybridization, Terrain, Plough, Agronomist,, Sapling, Agrarian, Grafting, Shrubs, Heterozygous, Homozygous, Pollination, Compost, Weeding, Harrower, breeding, Seedling, Fallow, Vegetation, rotational Pesticides, tilling, Livelihood, Plough, Invasion, Swarm, Weed, Herbicides, Insecticides, Arable, Manure, husbandry, Compost, Tenure, Husbandry, and Subsistence*

The results of Photography lexical items tested shows that at pre-test 2, the following undergraduate ESL subjects (S2094, S2032, 52017, S2015, S1025, S2081, S1037 and S1033) obtained these scores: 3.5/15;1/15;7/15;5/15;5/15;4/15;5.5/15 and 6.15 respectively on CP1 of Photography lexical items. These scores are relatively lower compared to the scores on the post-

test. This phenomena is evident across all Photography lexical items tested in the other comprehension passages (e.g., CP3 and CP4). Generally, at pre-test 2, the scores on comprehension of MAP are not only lower but are also limited to the following 'not too technical' and 'common' words of Photography such as: *Enlargement, Picture, Reprint, Camera, Album, Studio, Black and White, Photograph Photographer, Frame, Say cheese, Photo, Film, Snapshot, Snap, Pin-up, Image, and Photogenic, flash, memory card, computer and others.*

In contrast, the scores obtained by the same undergraduate ESL subjects on the same item at post-test 2 are: 14.5/15;15/15;14/15;14/15;14/15;10/15;14.5/15 and 14.5/15. The post-test scores are generally higher and this is evident across all Photography lexical item tested in the other comprehension passages (e.g., CP3 and CP4). This signifies that the meanings of more lexical items have been understood as a result of the treatment. Generally, it is evident that at post-test 2, because of the treatment condition, the scores are not only higher but the comprehension of these lexical items are also evenly spread across all the twenty five or more lexical items of Photography treated in the passages irrespective of their complexities. Some examples of complex Photography lexical items treated in the passages and for which more scores were obtained include: Blurry, *Flare, Toning, Wetting, Anti-flicker, Grainy, Telephoto, Panorama, Aperture, Viewfinder, Half tone, Positive image, Megapixel, Underexposure, Camera shy, Extender, Shutter, Developer, Focus, Candid photo, Composition, Photo bomb, Fixer, Opaque, Lens, Red eye, Exposure, Tripod, and Darkroom, Exposed, Beam, Lens and others*

Based on the above, it is concluded that there are significant differences in the scores obtained on test of CCPT at pre-test 2 and post-test 2. The scores on comprehension test at post-test 2 scores are higher because of the effect of Keyword Strategy which allows for deeper level of processing that aids comprehension.

Table 4.6 below shows the summary of the differences in scores on test of CCPT between pre-test 2 and post-test 2. The Mean of scores at the pre-test 2 is 17.6233 while the post-test2 is 52.5084.

Table 4.6: Mean Differences on CCPT between Pre-test 2 and Post-test 2

Variables	Test	N	Mean
MAP	Pre-test 2 of test of comprehension	300	17.6233
MAP	Post-test 2 of test of comprehension	300	52.5084

It can be concluded that the subjects significantly differ in the mean performance on comprehension in favour of the post-test scores. This implies that at post-test2, the undergraduate ESL subjects performed significantly better on test of comprehension at the post-test than they did at the pre-test.

In conclusion, in response to Research Question 2 therefore, it is concluded that the scores obtained on test of WLRRT and CCPT OF MAP lexical items at the pre-test and post-test significantly differs; the differences is in favour of the post-test.

4.2.3. Analysis of Test Results for MAP Lexical Items with the Highest Mean Score within Pre-test 1 and Post-test 1

The following analyses in 4.2.3, 4.2.4 and 4.2.5 are in respect of Research Question Three. The MAP lexical field item in which the undergraduate ESL subjects scored highest marks, was determine through the statistical Mean.In Table 4.7 below, randomly selected samples of scores obtained at the Pre-test 1 and Post-test 1 are compared:

Table 4.7:Samples of Raw Scores Obtained on WLRRT of Pre-test1 and Post-test 1

Subj., numb	PRT1 SCORES out of 25			PST1 SCORES out of 25		
	M	A	P	M	A	P
1037	9	7	6	24	12	21
2094	8	7	9	19	21	20
2032	8	11	7	12	18	21
2017	6	03	7	17	24	15
2081	8	09	7	21	17	22
1003	9	07	10	20	19	18
1014	8	09	10	21	24	21
2049	10.5	05	6.5	24	21	23
1033	6.5	10	10	20	21	24
2008	10	11	11	19	22	23
2001	09.5	09	08	23	23	25
1057	10	12	10	23	23	24
2047	11	14	10	22	24	22
2077	10	10	11	21	22	24

1034	09	10	09	19	24	24

Keys: PRT1=Pre-test1; PST1=Post-test1

The scores in the above table are samples taken from the raw scores obtained by the undergraduate ESL subjects on WLRRT test administered at the Pre-test1 and Post-test1. For the analysis of MAP lexical items in which the undergraduate ESL subjects scored highest mark, the sum of all the scores obtained by the subjects in each group was calculated and the mean was taken. The table below presents the analysis in this respect.

Table 4.8:MAP Lexical Item with Highest Mean Score at Pre-test 1 and Post-test 1

Test levels	Test types	M		A		P	
		c/total	Mean	c/total	Mean	c/total	Mean
Pre-test 1	WLRRT	1480	246.67	1599	266.5	1346	224.33
Post-test 1	WLRRT	4877	812.83	4871	811.83	4862	810.33

Keys: WLRRT=Word Learning, Retention and Recall Test

On Table 4.8 above, it can be seen that the total sum of scores and their equivalent mean as obtained by the undergraduate ESL subjects on test of learning, retention and recall of MAP at Pre-test 1 for groups (1- 6) are given as: M (1480; 246.67), A (1599;266.5) and P (1346; 224.33) respectively, while the total sum of scores and their equivalent means obtained on the same test of MAP at Post-test 1 for groups (1-6) are: M (4877;812.83) A (4871;811.83) and P (4862;810.33) respectively. Looking at these clearly the conclusion here is that between pre-test1 and post-test1, the highest scores were obtainedat the post-test on Medicine lexical items. This implies that between the Pre-test1 and Post-test 1 levels, the subjects performed better on recall of definition of Medicinelexical items followed by Agriculture and Photography lexical items.

4.2.4. Analysis of Test Results for MAP Lexical Items with the Highest Mean Score betweenPre-test 2 and Post-test 2

The MAP lexical field items in which the undergraduate ESLsubjects score highest marksbetween Pre-test 2 and Post-test 2 areanalysed using the statistical mean. Table 4. 9 contains some examples of randomly selected samples of raw score obtained in each of the test level.

Table 4.9:Samples of Raw Scores Obtained on MAP Itemsat Pre-test2& Post-test 2

SUBJ., NUMB	PRT 2 Score of M			PRT Scores of A			PRT 2 Scores of P			PST 2 Scores of M			PST 2 Scores A			PST 2 Scores of P		
	CP1 CP4		CP2	CP4 CP6		CP5	CP1 CP4		C3	CP1 CP4		CP2	CP4 CP6		CP5	CP1 CP4		CP3
S2094	3/13	4/8	3.5/8/	2/8	6.5/15	5/8	5.5/15	3.5/9	6/12	8/13	6/8	8/8	7.5/8	15/15	8/8	14.5/15	9/9	8/12
S2032	3.5/13	3/8	2.5/8	4/8	3/15	3/8	1/15	3.5/9	7/12	10/13	8/8	7.5/8	8/8	13.5/15	8/8	15/15	7/9	8/12
S2017	5/13	4.5/8	2.5/8	2.5/8	6.5/15	3/8	7/15	3/9	7/12	11.5/13	8/8	8/8	6/8	14.5/15	8/8	14/15	8.5/9	12/12
S2015	3/13	1.5/8	3/8	1/8	4/15	2/8	5/15	3/9	3/12	12/13	7.5/8	8/8	7/8	12/15	7/8	14/15	8/9	12/12
S1025	2.5/13	4/8	3/8	2.5/8	5/15	2.5/8	5/15	4/9	3/12	9/13	8/8	8/8	8/8	11.5/15	6.5/8	14/15	7.5/9	12/12
S2081	4/13	2.5/8	3/8	I/8	3.5/15	4/8	4/15	2.5/9	4/12	12/13	8/8	7/8	8/8	12/15	7.5/8	10/15	8.5/9	7/12

Keys: PRT2=Pre-test2; PST2-Post-test2

The scores in the above table only represent samples taken from the raw scores obtained by the subjects on CCPT test administered at the Pre-test 2 and Post- test 2. Table 4.10 below show the highest scores obtained based on mean differences between the two levels.

Table 4.10:MAP Lexical Item with Highest Scoresat Pre-test 2 & Post-test 2

Test levels	Test types	M		A		P	
		c/total	Mean	c/total	Mean	c/total	Mean
Pre- test 2	CCPT	1536	256.00	1671	278.5	1376	229.33
Post-test 2	CCPT	5160	860.00	5381	896.83	5423	903.83

Table 4.10, shows total sum of scores and their mean equivalents as obtained by the undergraduate ESL subjects on Pre-test 2 are as follows: M (1536;256.00); A (1671;278.5) and P (1376; 229.33),while scores and mean equivalent at Post-test 2 are: M (5160; 860.00) A (5381; 896.83) P (5423; 903.83) respectively. It is evident that the Mean of scores obtained at Post-test 2 are higher in comparison to those obtained at Pre-test 2. Specifically, the mean of scores obtained at Post-test 2 on Photography lexical items (903.83) is greater than mean scores on Agriculture and Medicine lexical itemsrespectively. This implies that the Subjects scored higher marks on Photography lexical items. The study concludes thatbetween Pre-test 2and Post-test 2, the scores of post-test 2 are higher and the subjectsobtained higher mean scores Photography lexical items. This implies that more subjects performed much better at the post-test2

The analyses above show that between Pre-test 1; Post test 1 and Pre-test 2; Post-test 2, the subjects' highest scores were recorded for Medicine lexical items (in the former) and Photography lexical items (in the latter).

The results of the between test levels analyses of MAP lexical items with the highest scores show divergence in performance on lexical items. For instance, between Pre-test 1 and Post-test 1 the highest scores were obtained on Medicine lexical items while between Pre-test 2 and Post-test 2, the highest scores were obtained on Photography lexical items. Further analysis, in this regard, also show that within each test level, there are differences in items with highest scores. For example, within Pre-test 1, the highest score was obtained on Agriculture, while within Post-test 1, the highest score was obtained on Medicine lexical items. Similarly, within Pre-test 2, highest scores were obtained on Agriculture items, while within the Post-test 2, the highest score was obtained on Photography.

Some plausible explanation for this phenomenon could be that perhaps the Subjects' increase in interest and motivation resulting from the use of Keyword Strategy may have contributed to this performance. Also, it could have been as a result of other uncontrollable variables which are beyond the researcher's control.

Whatever the case may be, the result of the analysis of MAP lexical items with highest score shows that the highest scores were obtained at the Post-tests although on separate lexical field items. The study concludes that the highest scores were obtained at the Post tests which is indicative of the effectiveness of the Keyword Strategy.

4.2.5. Analyses of Percentage Number of Subjects'Passeson Each of The Lexical Items Tested in WLRRT and CCPT.

The analysis presented below provide answers to research question four. For this analysis; the number of correct responses obtained by the undergraduate ESL subjects on each items tested in WLRRT and CCPT are counted and their percentages calculated.

Table 4.11:Percentage Number ofCorrect Responses on WLRRT of Medicine Lexical Items between Pre-test 1 and Post-test 1 (No of items=50; Number of students =300).

S/N	M=50	Percentages of Correct Responses on WLRRT OF M., ITEMs per STDs (N=300).			
		PRT1	%	PST1	%
1	Nutrition	50	16.7%	250	83.3%
2	Disease	64	21.3%	290	96.7%
3	Virus	39	13%	267	89%
4	Diagnosis	78	26%	159	53%
5	Thermometer	100	33.3%	286	95%
6	Stethoscope	96	32%	209	69.7%
7	Pharmacy	76	24%	200	66.7%
8	Drug	90	30%	278	92. 7%
9	Patient	100	33.3%	257	85.7%
10	Surgery	40	13.3%	203	67.7%
11	Dosage	80	26.6%	268	89.3%
12	X-ray	38	12.7%	237	79%
13	Discharge	129	43%	254	84.7%
14	Symptoms	70	23%	256	85.3%
15	Antiseptic	34	11.3%	199	66.3%
16	Surgeon	50	16.7%	226	75.3%
17	Typhoid	39	13%	150	50%
18	Syringe	129	43%	289	96.3%
19	Blood	200	66.7%	300	100%
20	Victim	101	33.7%	277	92.3%
21	Bedsore	38	12.7%	198	66%
22	Fever	108	36%	288	96%
23	Intensive unit	50	16.7%	199	66.3%
24	Infections	60	20%	213	71%
25	Stretcher	76	25.3%	199	66.3%
26	Vaccines	114	38%	209	69.7%
27	Immunization	49	16.3%	205	68.3%
28	Tranquilizer	35	11.7%	220	73.3%
29	Prognosis	29	9. 7%	114	38%
30	Amnesia	50	16.7%	176	58.7%
31	Paralysis	56	18.7%	228	76%
32	Asthma	30	10%	201	67%
33	Disorder	27	9%	198	66%
34	Hemorrhage	20	6.7%	114	38%
35	Enema	20	6.7%	191	63.7%
36	Antidote	47	15.7%	105	35%
37	Radiology	21	7%	170	56.7%
38	Optician	90	30%	211	70.3%
39	Dispensary	100	33.3%	275	91.7%

40	Convulsion	56	18.7%	201	67%
41	Allergy	40	13.3%	114	38%
42	Anopheles Mosquito	100	33.3%	208	69.3%
43	Bacterial	100	33.3%	246	82%
44	Inflammation	45	15%	201	67%
45	Prescription	95	31.7%	223	74.3%
46	Sterilization	100	33.3%	207	69%
47	Antibiotics	100	33.3%	208	69.3%
48	Organism	108	36%	221	73.7%
49	Influenza	20	6.7%	261	87%
50	Ophthalmology	29	9.7%	120	40%

Based on the Table4.11 presented above, it is evident that the number of undergraduate ESL subjects who obtained correct answers on each of the lexical items of Medicine tested via the WLRRT between the pre-test1 and post-test 1 differ as seen in the following example taken from the table above: ***Nutrition***, (PRT1=50subjs=16.7%; PST1=250subjs=83.3%)

Surgery, (PRT1=40subjs=13.3%; PST1=203 subjs=67.7%);

Virus, (PRT1= 39subjs=13%; PST1=267subjs=89%);

Diagnosis (PRT1=78subjs=26%; PST1=159subjs=53.6%),

Influenza (PRT1= 20subjs=6.7%; PST1=261subjs= 87%).

Immunization, (PRT=49subjs=16.3%; PST1=205subjs=68.3%);

Tranquilizer, (PRT1=35subj=11.7%; PST1= 220subjs=73.3%)

Prognosis, (PRT1=29subjs=9.7%; PST1=114subjs=38%);

Amnesia, (PRT1=50subjs=16.7%; PST1=176subjs=58.7%);

Hemorrhage, (PRT1=20subjs=6.7%; PST1= 114subjs=38%);

Enema, (PRT1=20subjs=6.7%; PST1= 191subjs=63.7%);

Disease, (PRT1=64subjs=21.3%; PST1=290subjs=96.7%),

Thermometre, (PRT1=100subjs=33.3%; PST1=286subjs=95%

Stethoscope, (PRT1=96subjs=32%; PST1=209subjs=69.7%) etc

A closer look at within post test 1 performance shows that the numbers of subjects who got the correct answers on the Medicine lexical items tested through the WLRRT are higher for all items. In almost all items, there are generally above hundred (100) subjects who got each of the item right. The examples below further show the effect of the Keyword Strategy:

Nutrition, (PST=250subjs=83.3 %,);

Disease, (PST=290subjs=96.7%)

Virus, (PST=267subjs=89%);

Diagnosis, (PST=159subjs=53%)

Thermometer, (PST=286sujs=95%);

Stethoscope, (PST=209subjs=69.7%);

Pharmacy, (PST=200subjs=66.7%) etc

These performances is attributed to the Keyword Strategy because it provided the subjects with more practice, deeper level of semantic processing and elaboration that enabled successful retention which was thus manifest in increase number of subjects who obtain the items correct at the post-test. However, evidences from the analysis of within pre-test 1 performance on the table above, shows that certain lexical items of Medicine in comparison to others tested, have higher numbers of subjects who passed the items than others. Some examples of lexical items of Medicine with higher number of respondents and correct responses within pre-test 1 include:

Blood, **(PRT1=**200subjs=66.7%);

Bacterial, (PRT1=100subjs=33.3%);

Fever, (PRT1=108subjs=36%);

Vaccines, **(PRT1=**114subjs=38%);

***Victims*, (PRT1=**101subjs=33.7%);

Discharge, (PRT1=129subjs=43%);

***Patients*, (PRT1=**100subjs=33.3%);

Thermometer, (PRT1=100subjs=33.3%);

Dispensary ;(PRT1=100subjs=33.3%)

Sterilization, (PRT1=100subjs=33.3%);

Stethoscope, (PRT1=96subjs=32%);

Drug, (PRT1=90subjs=30%);

Antibiotics, (PRT1=100subjs=33.3%);

Organisms, (PRT1=108subjs=36%);

Disease, (PRT1=150subjs=50%);

A*nopheles Mosquito*, (PRT1=100subjs=33.3%);

Dispensary, (PRT1=100subjs=33.3%); and

Syringe, (PRT1=129subjs=43%) etc

On the other and in comparison to the above, the following lexical items of Medicine have lower number of Subjects who got their definitions correct within pre-test 1. Examples include:

Ophthalmology, (PRT1=29subjs=9.7%);

X-ray, (PRT1=38subjs=12.7%);

Typhoid, (PRT1=39subjs=13%);

Tranquilizer, (PRT1=35 subjs=11.7%);

Prognosis, (PRT1=29subjs=9.7%);

Hemorrhage (PRT1=20subjs=6.7%);

Enema, (PRT1=20subjs=6.7%);

Antidote, (PRT1=47subjs=15.7%);

Radiology, (PRT1=21subjs=7%);

Influenza, (PRT1=20subjs=6.7%);

Inflammations, (PRT1=45subjs=15%);

Convulsion, (PRT1=56subjs=15%);

Allergy, (PRT1=40 subjs=13.3%);

Bedsore, (PRT1=38subjs=12.7%) etc

In summary, based on the results of the analysis, the study concludes that between pre-test 1 and post-test 1 of WLRRT of Medicine lexical items, more subjects obtained correct responses on the items tested at post-test 1. This implies that more scores were obtained at the post-test as a result of Keyword Strategy employed.

Table 14: **Number and percentages of correct responses obtained on test of WLRRT of Agriculture lexical items between Pre-test 1 and Post – test 1 (No of items =50; Number of students =300)**

Table 4.12: Percentage Number of Correct Responses on WLRRT of Agriculture Lexical Items between Pre-test 1 and Post - test 1 (No of items =50; Number of students =300)

S/N	A= 50	Percentage of Correct Responses on WLRRT OF A., LEX ITEMs per STDs .N=300			
		PRT1	%	PST1	%
1	Acre	96	32%	281	93.7%
2	Livestock	100	33.3%	259	86.3%
3	Cultivation	100	33.3%	211	70.3%
4	Soil	114	38%	300	100%
5	Husbandry	90	30%	250	83.3%
6	Homozygous	70	23.3%	176	58.7%
7	Pests	108	36%	281	93.7%
8	Pollination	50	16.7%	255	85%
9	Drought	100	33.3%	208	69.3%
10	Manure	124	41.3%	276	92%
11	Irrigation	129	43%	288	96%
12	Compost	80	26.7%	211	70.3%
13	Weeding	80	26.7%	109	36.3%
14	Agriculture	202	67.3%	300	100%
15	Nutrient	58	19.3%	189	63%
16	Forestry	78	26%	204	68%
17	Bee Keeping	40	13.3%	146	48.7%
18	Swarm	30	10%	180	60%
19	Fertilizer	103	34.3%	290	96.7%
20	Arable crop	67	22.3%	210	70%
21	Tractor	90	30%	146	48.7%
22	Bulldozer	69	23%	202	67.3%
23	Heterozygous	40	13.3%	170	56.7%
24	Nursery	59	19.7%	200	66.7%
25	Agronomist	48	16%	108	36%
26	Sapling	40	13.3%	100	33.3%
27	Agrarian	78	26%	202	67.3%
28	Plough	45	15%	209	69.7%
29	Shrubs	43	14.3	131	43.7%
30	Grafting	20	6.7%	160	53.3%
31	Hatchery	57	19%	190	63.3%
32	Hybridization	30	10%	179	59.7%
33	Harrower	29	9.7%	100	33.3%

34	Breeding	45	15%	168	56%
35	Salinity	20	6.7%	198	66%
36	Biennial	43	14.3%	176	58.7%
37	Brucellosis	20	6.7%	170	56.7%
38	Quarantine	23	7.7%	121	40.3%
39	Mulching	20	6.7%	98	32.7%
40	Hectare	45	15%	187	62.3%
41	Terrain	30	10%	165	55%
42	Lumbering	25	8.3%	144	48%
43	Squatter	28	9.3%	201	67%
44	Subsistence	60	20%	207	69%
45	Grange	21	7%	101	33.7%
46	Horticulture	45	15%	211	70.3%
47	Lease	30	10%	197	65.7%
48	Rake	77	25.7%	156	52%
49	Hacienda	14	4.7%	178	59.3%
50	Stumping	19	6.3%	181	60.3%

From the analysis on Table 4.12 above, it is evident that the number of subjects who obtained correct answers on each of the lexical items of Agriculture tested via the WLRRT between the pre-test1 and post-test 1 differ in favour of the post-test. This implies that more students got the answers correct at the post-test than at the pre-test. Some examples are randomly selected from the table above for comparative purposes:

Stumping, (PRT1=19subjs=6.3%; PST1=181subjs=60.3%);

Hacienda, (PRT1=14subjs=4.7%; PST1=178subjs=59.3%);

Grange, (PRT1=21subjs=7%; PST1=101subjs=33.7%);

Acre, (PRT1=96subjs=32%; PST1=281=93.7%);

Livestock, (PRT1=100subjs=33.3%; PST1=259subjs=86.3%);

Cultivation, (PRT1=100subjs=33.3%; PST1=211subjs=70.3%);

Soil, (PRT1=114subjs=38%; PST1=300subjs=100%);

Husbandry, (PRT1=90subjs=30%; PST1=250=83.3%);

Homozygous, (PRT1=70subjs=23.3%; PST1=176=58.7%);

Pests, (PRT1=108subjs=36%; PST1=281=93.7%);

Pollination, (PRT1=50subjs=16.7%; PST1=255=85%);

Drought, (PRT1=100subjs=33.3%; PST1=208subjs=69.3%);

Manure, (PRT1=124subjs=41.3%; PST1=276=92%)

This trend is evident in all the lexical items tested in the Agriculture lexical category. This implies that performance at the post -test is much better and enhanced. This is attributable to the Keyword Strategy. Using the Keyword strategy provided the subjects with the opportunity for conscious and repetitive practice of associating words to their Keyword clues which, therefore, fosters retention.

A closer look at within post-test 1 performance shows that the numbers of subjects who got the correct answers on the Agriculture lexical items tested through the WLRRT are higher for all items. In almost all items, there are generally above hundred (100) subjects who got each of the item right. The examples below further show the effect of the Keyword Strategy:

Agriculture, (PST1=300subjs=100%);

Forestry, (PST1=204=68%);

Nutrient, (PST=189subjs=63%);

Fertilizer, (PST1=290subjs=96.7%);

Arable crop, (PST1=210subjs=70%);

Swarm, (PST1=180subjs-60%);

Lumbering, (PST1=144subjs=48%)***;***

Squatter, (PST1=201subjs=67%) etc

The performances are attributable to the Keyword Strategy because it provided the subjects with more practice, deeper level of semantic processing and elaboration that enabled successful retention which was thus manifest in increase number of subjects who obtain the items correct at the post-test. However, evidences from the analysis of within pre-test 1 performance on the table above, shows that certain lexical items of Agriculture, in comparison to others tested, have higher numbers of subjects who passed the items than other. Some examples of lexical items of Agriculture with higher number of respondent and correct response within pre-test 1 include:

Manure, (PRT1=124subjs=41.3%);

Drought, (PRT1=100subjs=33.3%)

Pests, (PRT1=108subjs=36%);

Soil, (PRT1=114subjs=38%);

Cultivation, (PRT1=100subjs=33.3%);

Livestock, (PRT1=100subjs=33.3%);

Irrigation, (PRT1=129subjs=43%);

Agriculture, (PRT1=202subjs=67.3%);

Fertilizer, (PRT1=103subjs=34.3%);

Tractor, (PRT1=90subjs=30%);

Rake, (PRT177subjs=25.7%) etc

On the other and in comparison to the above, the following lexical items of Agriculture have lower number of Subjects who got their definitions correct within pre-test 1. Some examples include:

Grange, (PRT1=21subjs=7%);

Hacienda, (PRT1=14subjs=4.7%);

Stumping, (PRT1=19subjs=6.3);

Lumbering, (PRT1=25subjs=8.3%);

Horticulture, (PRT1=45subjs=15%);

Squatter, (PRT1=28subjs=9.3%);

Lease, (PRT1=30subjs=10%);

Terrain, (PRT1=30subjs=10%);

Brucellosis, (PRT1=20subjs=6.7%);

Quarantine, (PRT1=23subjs=7.7%);

Mulching, (PRT1=20subjs=6.7%); etc

The study concludes that at the pre-test prior to the experiment, performance on individual lexical item of Agriculture tested is uneven. In summary, based on the results of the analysis, it can be concluded that between pre-test 1 and post-test 1 of WRLRT of Agriculture lexical items, there are more number of subjects who obtained correct answers on the items tested in favour of the post-test 1. This implies that more scores were obtained at the post-test subjects as a result of Keyword Strategy employed.

Table 4.13:Percentages of Correct Responses on WLRRT of Photography lexical items at Pre-test 1 and Post – test 1 (No of items =50; Number of students =300).

S/N	P=50	Percentages of Correct Responses on WLRRT OF P., LEX ITEMs per STDs .N=300			
		PRT1	%	PST1	%
1	Tripod	28	9.3%	289	96.3%
2	Darkroom	90	30%	211	70.3%
3	Enlargement	107	35.7%	300	100%
4	Picture	134	44.7%	278	92.7%
5	Studio	100	33.3%	288	96%
6	Reprint	167	55.7%	300	100%
7	Album	129	43%	289	96.3%
8	Camera	178	59.3%	300	100%
9	Red eye	40	13.3%	270	90%
10	Exposure	56	18.7%	167	55.7%
11	Black &white	166	55.3%	300	100%
12	Photograph	126	42%	300	100%
13	Photographer	102	34%	300	100%
14	Frame	89	29.7%	179	59.7%
15	Say cheese	109	36.3%	300	100%
16	Candid photo	20	6.7%	190	63.3%
17	Kodak	35	11.7%	200	66.7%
18	Photogenic	50	16.7%	100	33.3%
19	Composition	45	15%	160	53.3%
20	Flash	90	30%	189	63%
21	Photo bomb	45	15%	136	45.3%
22	Fixer	37	12.3%	100	33.3%
23	Opaque	25	8.3%	122	40.7%
24	Lens	76	25.3%	109	36.3%
25	Telephoto	30	10%	103	34.3%
26	Shutter	34	11.3%	115	38.3%
27	Background	39	13%	100	33.3%
28	Dark cloth	56	18.7%	148	49.3%
29	Panorama	35	11.7%	121	40.3%
30	View finder	26	8.7%	189	63%
31	Half tone	20	6.7%	175	58.3%
32	Aperture	19	6.3%	197	65.7%
33	Mega fixel	15	5%	101	33.7%
34	Developer	20	6.7%	200	66.7%
35	Snap shot	68	22.7%	110	36.7%
36	Extender	28	9.3%	112	37.3%
37	Positive Image	44	14.7%	109	36.3%
38	Focus	45	15%	110	36.7%
39	Camera shy	56	18.7%	123	41%
40	Underexposure	62	20.7%	100	33.3
41	Snap	70	23.3%	209	69.7%

42	Pinup	23	7.7%	118	39.3%
43	Grainy	21	7%	90	30%
44	Photo	112	37.3%	300	100
45	Image	38	12.7%	124	41.3%
46	Film	93	31%	250	83.3%
47	Flare	30	10%	170	56.7%
48	Toning	17	5.7%	89	29.7%
49	Wetting	12	4%	69	235
50	Anti flicker	27	9%	102	34%

From the analysis on Table 4.13above, it is evident that the number of subjects who obtained correct answers on each of the lexical items of Photography tested via the WLRRT between the pre-test1 and post-test 1 differ in favour of the post-test. This implies that more students got the answers correct at the post-test than at the pre-test. Some examples are randomly selected from the table above for comparative purposes:

Film, (PRT=93subjs=31%; PST=250subjs=83.3%);

Flare, (PRT=30subjs=10%; PST=170subjs=56.7%);

Panorama, (PRT=35subjs=11.7%; PST=121subjs=40.3%);

Viewfinder, (PRT=26subjs=8.7%; PST=189subjs=635);

Halftone, (PRT=20subjs=6.75; PST=175subjs-58.3%);

Aperture, (PRT=19subjs=6.35; PST=197subjs=65.75);

Megapixel, (PRT=15subjs=5%; PST=101=33.7%);

Developer, (PRT=20subjs=6.75; PST=200subjs=66.7%);

Black white, (PRT=166subjs=55.3%; PST=300subjs=100%);

Photograph, (PRT=126subjs=42%; PST=300subjs=100%);

Photographer, (PRT=102subjs=34%; PST=300subjs=100%);

Frame, (PRT=89subjs=29.7%; PST=179subjs=59.7%);

Say cheese, (PRT=109subjs=36.3%; PST=300subjs=100%

This trend is evident in all the lexical items tested in the Photography lexical category. This implies that performance at the post -test is much better and enhanced. This is attributable to the Keyword Strategy. Using the Keyword Strategy provided the subjects with the opportunity for conscious and repetitive practice of associating words to their Keyword clues which, therefore, fosters retention.

A closer look at within post-test 1 performance shows that the number of subjects who got correct answers on the Photography lexical items tested through the WLRRT is higher for all items. In almost all items, there are generally above hundred (100) subjects who got each of the item right. The examples below further show the effect of the Keyword Strategy:

Telephoto, (PST=103subjs=34.3%).

Shutter, (PST=115subjs=38.3%

Background, (PST=100subjs=33.3%)),

Dark cloth, (PST=148subjs=49.3%);

Panorama, (PST=121subjs=40. 3%),

View finder, (PST=189subjs=63%);

Half tone, (PST=175subjs=58.3%);

Aperture, (PST=197subjs=65.7%) etc

Black&white, (PST=300subjs=100%);

Photograph, (PST=300subjs=100%);

Say-cheese, (PST=300subjs=100%);

Photographer, (PST=300subjs=100%);

Film, (PST=250subjs=83.3%);

Developer, (PST=200subjs=66.7%);

Kodak, (PST=200subjs=66.7%);

Picture, (PST=278subjs=92.7%);

Studio, (PST= 288subjs=96%);

Reprint, (PST=300subjs=100%);

Album, (PST=289subjs=96.3%);

Camera, (PST=300subjs=100%) etc

These performances is attributed to the Keyword Strategy because it provided the subjects with more practice, deeper level of semantic processing and elaboration that enabled successful retention which was thus manifest in increase number of subjects who obtain the items correct at the post-test

However, evidences from the analysis of within pre-test 1 performance on the table above, shows that certain lexical items of Photography in comparison to others tested, have higher numbers of subjects who passed the items than other. Some examples of lexical items of Photography with relatively higher number of respondent and correct responses within pre-test 1 include:

Enlargement, (PRT1=107subjs=35%);

Picture, (PRT1=134subjs=447%);

Studio, (PRT1=100subjs=33.3%);

Reprint, (PRT1=167subjs=55.7%);

Album, (PRT1=129subjs=43%);

Camera, (PRT1=178subjs= 59.3%);

Black &white, (PRT1=166subjs=55.3%);

Photograph, (PRT1=126subjs=42%);

Photographer, (PRT1=102subjs=34%);

Say cheese, (PRT1=109subjs=36.3%) etc

On the other and in comparison to the above, the following lexical items of Photography have lower number of Subjects who got their definitions correct within the pre-test 1. Some examples include:

Toning, (PRT1=17subjs=5.7%);

Wetting, (PRT1=12subjs=4%);

Antiflicker, (PRT1=27subjs-9%);

Pinup, (PRT1=23subjs=7.7%);

Grainy, (PRT1=21subjs=7%);

Halftone, (PRT1=20subjs=6.7%);

Aperture, (PRT1=19subjs=6.3%);

Mega fixel, (PRT1=15subjs=5%);

Opaque, (PRT1=/925subjs=8.3%);

Telephoto, (PRT1=30subjs=10%);

Panorama, (PRT1=35subjs=11.7%);

Viewfinder, (PRT1=26subjs=8.7%);

Background, (PRT1=39subjs=13%);

Fixer, (PRT1=37subjs=12.3%) etc.

The analyses revealed that at the pre-test prior to the experiment, performance on individual lexical item of Photography tested is unstable. In summary, based on the results of the analysis, the study concludes that between pre-test 1 and post-test 1 of WLRRT of Photography lexical items, there are more number of subjects who obtained correct answers on the items tested in favour of the post-test 1. This implies that as a result of the Keyword Strategy employed for lexico semantic leaning and retention, more scores were obtained at the post-test.

In summary, an important finding based on the overall analysis on Tables 4.13, 4.14 and 4.15 is that the Keyword Strategy has positively impact the learning, and retention of the MAP lexical items investigated in this study.

4.2.6. Analyses of Percentage Number of Subjects'Responses on each of the Lexical Items Tested in CCPT

The second part of the analyses relates to the performances of subjects on each of the items tested in MAP through the Cloze Comprehension Passage Test (CCPT).For this purpose, the number of subjects who got each item correct in each lexical field category was counted and the percentages were also calculated. The tables are presented below:

Table 4.14:Percentage Number of Correct Responses on CCPT of M.,Lexical Items between Pre-test 2 and Post-test 2 (No of items =50; Number of students =300).

	M=50	Percentages of Correct Responses on CCPT OF M., LEX per ITEM s per STDs .N=300			
		PRT2	%	PST2	%
1	Bacterial	67	22.3%	193	64.3%
2	Influenza	26	8.6%	179	59.7%
3	Infections	78	26%	211	70.3%
4	Symptoms	132	44%	257	85.7%
5	Diagnosed	159	53%	278	92.7%
6	Immunize	57	19%	165	55%
7	Vaccines	60	20%	123	41%
8	Diseases	120	40%	286	95.3%
9	Blood	37	12.3%	277	92.3%
10	Headaches	25	8.3%	189	63%
11	Treatment	40	13.3%	212	70.7%
12	Sick	159	53%	300	100%
13	Doctor	213	71%	300	100%
14	Laboratory	48	16%	201	67%
15	Drug	102	34%	278	92.7%
16	Inflammations	65	21.7%	101	33.7%
17	Antibiotics	105	35%	267	89%
18	Mortality	24	8%	198	66%
19	Health	43	14.3%	209	69.7%
20	Fever	46	15.3%	221	73.7%
21	Virus	32	10.7%	245	81.7%
22	Microscopes	128	42.7%	289	96.3%
23	Organism	49	16.3%	102	34%
24	Sterilizing	73	24.3%	211	70.3%
25	Tablet	65	21.7%	294	98%
26	Vitamins	48	16%	217	72.3%
27	Prescription	77	25.7%	289	96.3%
28	Pharmacists	101	33.7%	209	69.7%
29	Cure	84	28%	272	90.7%
30	Condition	40	13,3%	206	68.7%
31	Casualty	89	29.7%	297	99%
32	Victims	66	22%	223	74.3%
33	Accident	74	24.7%	300	100%s
34	Clinical	46	15.3%	123	41%
35	Thermometre	219	73%	300	100%
36	X-ray	97	32.3%	200	66.7%
37	Anti Tetanus	75	25%s	116	38.7%
38	Nurse	86	28.7%	288	96%
39	Stretcher	57	19%	213	71%
40	Ward	49	16.3%	300	100%

41	Intensive Unit	100	33.3%	297	99%
42	Patient	97	32.3%	300	100%
43	Attacks	64	21.3%	197	65.7%
44	Relapse	53	17.7%	122	40.7%
45	Treatment	75	25%	227	75.7%
46	Potent	43	14.3%s	143	47.7%
47	Health	58	19.35	207	69%
48	Condition	62	20.7%s	200	66.7%s
49	Observation	55	18.3%	117	39%
50	Examine	41	13.7%	211	70.3%

On Table 4.14 above, the result of the analysis shows major differences in performance between the pre-test 2 and post-test 2 of CCPT of MAP lexical items tested. The major difference referred to here is in terms of the numbers of subjects who got correct answers on each item in each of the field lexical tested. In examples given below the differences between pre-test 2 and post 2 in this regards are presented for comparative purposes. Some examples from CCPT of Medicine lexical items are given below:

Bacterial, (PRT=67subjs=22.3%; PST=193subjs=64.3%);

Influenza, (PRT=26subjs=8.7%; PST= 179subjs= 59.7%);

Infections, (PRT=78subjs=26%; PST= 211subjs=70.3%);

Symptoms, (PRT=132subjs=445; PST= 257subjs= 85.7%);

Diagnosed, (PRT=159subjs=535; PST=278subjs= 92.7%);

Immunize, (PRT=57subjs=19%; PST=165subjs=55%);

Vaccines, (PRT=60subjs=20%; PST=123subjs=41%);

Diseases, (PRT=120subjs=40%; PST=286subjs=95.3%) etc

The analysis on theTable above shows that within post- test 2, the numbers of subjects who got the answers to the Medicine (M) lexical items tested through the CCPT are higher. In almost all

items, there are generally above hundred (100) subjects who got the item right as seen on the table. This performance is attributable to the use of the Keyword Strategy that provided the subjects with more practice, imagery association, deeper level of semantic processing and elaboration that enabled successful learning and retention. The learning and retention of the lexical items contributed immensely to the level of performance recorded in the test of comprehension as seen on the table above. The study was designed in such a way that the three variables: learning, retention and comprehension, complement one another. This is the reason why success on test of learning and retention has positive impact on results obtained on test of comprehension at the post – test as seen on the table above.

In contrast, however, the same analyses on the table show that within pre-test 2, there are obvious differences in terms of numbers of students who passed the items tested. In other words some lexical items of Medicine have higher numbers of subjects who got their definitions right while some have lower numbers. In this regard, the following lexical items of Medicine are provided as examples. Some of the items that more number of subjects passed within pre-test 2 include:

Symptoms, (PRT2=132subjs= 44%);

Diagnosed, (PRT2=159subjs=53%)

Diseases, (PRT2=120subjs=40%);

Sick, (PRT2=159subjs= 53%);

Doctor, (PRT2=213subjs= 71%);

Drug, (PRT2=102subjs=34%) etc.

On the other hand, the following items have lower number of subjects who obtained correct answers to the items tested within the same test level:

Immunize, (PRT2=57subjs=19%);

Vaccines, (PRT2=60subjs=20%);

Blood, (PRT2=37subjs= 12.3%)

Headaches, (PRT2=25subjs=8.3%);

Treatment, (PRT2=40subjs-13.3%)

Stretcher, (PRT2= 57subjs=19%);

Ward, (PRT2=49subjs=16.3%);

Potent, (PRT2=43subjs=14.3%);

Health, (PRT2=58subjs=19.3%);

Condition, (PRT2=62subjs=20.7%);

Observation, (PRT2=55=18.3%) etc

These differences in performance in terms of number of students who passed certain items within pre-test 2 can be accounted for in terms of the dichotomy between what constitute the subjects' productive and receptive vocabulary (as discussed in analysis of results of pre-test1 and post-test 1 in previous pages). This is one probable explanation since the pre-tests were conducted prior to the experiment with the Keyword Strategy. Others could perhaps be related to fossilization, issues of bilingualism, poor learning, lack of interest and attitudes.

To sum up, the conclusion is that between pre-test 2 and post-test 2 of CCPT of Medicine lexical items, there are higher percentage number of subjects who passed almost all the items tested in favour of the post-test. Therefore, this implies that the use of the Keyword Strategy has positive effect not only on retention but has also enhanced comprehension.

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Table 4.15:Percentages Nuimber of Correct Responses on CCPT of A., Lexical Items at Pre-test 2 and Post-test 2 (No of items =50; Number of students =300)

S/N	A=50	Percentages of Correct Responses on CCPT OF A., LEX per ITEM s per STDs .N=300			
		PRT2	%	PST2	%
1	Devastation	50	16.7%	123	41%
2	Swarms	74	24.7%	278	92.7%
3	Vegetation	100	33.3%	289	96.3%
4	Seasonal	86	28.7%	234	78%
5	Pests	78	26%	290	96.7%
6	Invasion	86	28.7%	211	70.3%
7	Plants	155	51.7%	300	100%
8	Labourers	156	52%	279	93%
9	Predict	59	19.7%	123	41%
10	0utbreak	48	16%	208	69.3%
11	Spraying	71	23.7%	243	81%
12	Maggots	42	14%	149	49.7%
13	Food	143	47.7%	286	95.3%
14	Rotational	76	25.3%	200	66.7%
15	Pesticides	87	29%	257	85.7%
16	Agriculture	205	68.3%	300	100%
17	Farming	202	67.3%	300	100%
18	Tilling	58	19.3%	201	67%
19	Soil	109	36.3%	297	99%
20	Ploughs	78	26%	204	68%
21	Subsistence	104	34.7%	201	67%
22	Livelihood	57	19%	165	55%
23	Garden	121	40.3%	279	93%
24	Farm pets	60	20%	178	59.3%
25	Reap	77	25.7%	200	66.7%
26	Animal	189	63%	290	96.7%
27	Fertilizers	123	41^%	295	98.3%
28	Farmers	198	66%	290	96.7%
29	Herbicides	64	21.3%	176	58.7
30	Insecticides	68	22.7%	201	67%
31	Crop Pests	104	34.7%	208	69.3%
32	Disease	106	35.3%	289	96.3%
33	Weeds	101	33.7%	278	92.7%

34	Cultivate	136	45.3%	264	88%
35	Land	198	66%	278	92.7%
36	Arable	107	35.7%	263	87.7%
37	Raw	113	37.7%	219	73%
38	Crops	118	39.3%	245	81.7%
39	Rake	78	26%	212	70.7%
40	Manure	103	34.3%	278	92.7%
41	Seedlings	96	32%	234	78%
42	Tractors	127	42.3%	250	83.3%
43	Husbandry	68	22.7%	207	69%
44	Tenure	47	15.7%	201	67%
45	Compost	62	20.7%	234	78%
46	Cultivation	128	42.7%	256	85.3%
47	Yield	58	19.3%	206	68.7%
48	Farmlands	91	30.3%	204	68%
49	Staple	78	26%	218	72.7%
50	Produce	59	19.7%	209	69.7%

On Table 4.15 above, the analysis shows major differences in performance between the pre-test 2 and post-test 2 of CCPT of MAP lexical items tested. The major difference referred to here is in terms of the numbers of subjects who got correct answers on each item in each of the field tested. In examples given below the differences between pre-test 2 and post-test 2 in this regards are presented for comparative purposes. Some examples from CCPT of Agriculture Lexical items are given below:

Staple, (PRT=78subjs= 26%; PST= 218subjs=72.7%);

Produce, (PRT=59subjs=19.7%; PST= 209subjs= 69.7%);

Crop(s), (PRT=118subjs=39.3%; PST=245subjs=81. 7%);

Rake, (PRT=78subjs=26%; PST=212 subjs= 70.7%);

Manure, (PRT=103 subjs= 34.3%; PST=278=92.7%) etc

Further evidence on the table above shows that within post- test 2, the numbers of subjects who got the answers to the Agriculture (A) lexical items tested through the CCPT are higher for all items. In almost all items, there are generally above hundred (100) subjects who got the item

right as seen on the table. This performance is attributable to the use of the Keyword Strategy that provided the subjects with more practice, imagery association, deeper level of semantic processing and elaboration that enabled successful learning and retention. The learning and retention of the lexical items contributed immensely to the level of performance recorded in the test of comprehension as seen on the table above. The study was designed in such a way that the three variables: learning, retention and comprehension, complement one another. This is the reason why success on test of learning and retention has positive impact on results obtained on test of comprehension at the post - test as seen on the table above.

In contrast, however, the same analyses on the table show that within pre-test 2, there are obvious differences in terms of numbers of students who passed the items tested. In other words some lexical items of Agriculture have higher numbers of subjects who got their definitions right while some have lower numbers. In this regard, the following lexical items of Agriculture are provided as examples. Some of the items that have relatively more number of subjects who passed within the pre-test 2 include:

Cultivation, (PRT=128subjs= 42.7%);

Weeds, (PRT2=101subjs=33.7%);

Land, (PRT2=198subjs=66%);

Arable, (PRT2=107subjs=35.7%);

Raw, (PRT2=113subjs=37.7%);

Crops, (PRT2=118subjs=39.3%);

Manure, (PRT2=103subjs=34.3%);

Tractors, (PRT2=127subjs=42.3%);

Animal, (PRT2=189subjs=63%);

Fertilizers, (PPRT2=123subjs=41%);

Farmers, (PRT=198 subjs= 66%) etc

On the other hand, some lexical items with lower number of subjects who passed certain items within the same test level as above include:

Rake, (PRT2=78subj=26%);

Tilling, (PRT2=58subjs=19.3%);

Herbicides, (PRT2=64subjs=22.7%);

Insecticides, (PRT2=68subjs=22.7%) etc

These differences in performance in terms of number of student who passed certain items within pre-test 2 can be accounted for in terms of the dichotomy between what constitute the subjects' productive and receptive vocabulary (as discussed in analysis of results of pre-test1 and post-test 1 in previous pages). This is one probable explanation since the pre-tests were conducted prior to the experiment with the Keyword Strategy. Others could perhaps be related to fossilization, issues of bilingualism, poor learning, lack of interest and attitudes.

The conclusion is that between pre-test 2 and post-test 2 of CCPT of Agriculture lexical items, there are higher percentage number of subjects who passed almost all the items tested in favour of the post-test. Therefore, this implies that the use of the Keyword Strategy has positive effect not only on retention but has also enhanced comprehension.

Table 4.16:Percentage Number of Correct Responses on CCPT of P., Lexical Items at Pre-test 2 and Post-test 2 (No of items =50; Number of students =300)

S/N	P=50	Percentages of Correct Responses on CCPT OF P., LEX per ITEM s per STDs .N=300			
		PRT2	%	PST2	%
1	Camera	121	40.3%	300	100%
2	Photograph	146	48.7%	278	92.7%
3	Snap	80	26.7%	277	92.3%
4	Aim	56	18.7%	178	59.3%
5	Image	78	26%	203	67.7%
6	Picture	89	29.7%	289	96.3%
7	Exposed	56	18.7%	198	66%
8	Blurry	45	15%	202	67.3%
9	Film	57	19%	258	86%
10	Beam	45	15%	218	72.7%
11	Lens	57	19%	206	68.7%
12	Flash	65	21.7%	278	92.7%
13	Photography	98	32.7%	289	96.3%
14	Memory card	100	33.3%	288	96%
15	Computer	123	41%	295	98.3%
16	Photographer	116	38.7%	300	100%
17	Black &White	180	60%	300	100%
18	Enlargement	133	44.3%	300	100%
19	Envelop	100	33.3%	300	100%
20	Frame	92	30.7%	289	96.3%
21	Panorama	36	12%	169	56.3%
22	Zoom	57	19%	188	62.7%
23	Camera Shy	70	23.3%	218	72.7%
24	Darkroom	101	33.7%	234	78%
25	Studio	110	36.7%	278	92.7%
26	Snap shot	65	21.7%	267	89%
27	Lighting	40	13.3%	207	69%
28	View finder	30	10%	147	49%
29	Lamination	102	34%	300	100%
30	Shutter	56	18.7%	175	58.3%
31	Bridge	45	15%	198	66%
32	Lens focus	70	23.3%	203	67.7%
33	Washroom	86	28.7%	186	62%
34	Stage	76	25.3%	300	100%
35	Equipment	58	19.3%	205	68.3%
36	Exposing	42	14%	189	63%
37	Speed	47	15,7%	100	33.3%
38	Transparent	39	13%	108	36%
39	Glow	60	20%	200	66.7%
40	Photo	148	49.3%	300	100%
41	Snapping	100	33.3%	204	68%

42	Flasher	109	36.3%	300	100%
43	Focus	54	18%	210	70%
44	Composition	42	14%	150	50%
45	Snapped	102	34%	234	78%
46	Negative	116	38.7%	300	100%
47	Opaque	51	17%	287	95.7%
48	Coloured	191	63%	300	100%
49	Aperture	20	6.7%	105	35%
50	Tripod	68	22.7%	201	67%

On Table 4.16 above, the result of the analysis shows major differences in performance between the pre-test and post-test of CCPT of MAP lexical items tested. The major difference referred to here is in terms of the numbers of subjects who got correct answers on each item in each of the field lexical tested. In examples given below, the differences between pre-test 2 and post 2 in his regards are presented for comparative purposes. Some examples from CCPT of Photography Lexical items are given below:

Snapping, (PRT=100subjs=33.3%; PST=204subjs= 685);

Flasher, (PRT=109subjs=36.3%; PST=300subjs=100%)

Focus, (PRT=54subjs=18%; PST=210 subjs= 70%);

Composition, (PRT=42subjs=14%; PST=150subjs=50%)

Snapped, (PRT=102subjs=34%; PST=254subjs=78%);

Negative, (PRT=116subjs=38.7%; PST=300subjs=100%);

Opaque, (PRT=51subjs=17%; PST= 287subjs= 95.7%

Further evidence on the table above show that within post- test 2, the numbers of subjects who got the answers to the Photography (P) lexical items tested through the CCPT are higher for all items. In almost all items, there are generally above hundred (100) subjects who got the item right as seen on the table. This performance is attributable to the use of the Keyword Strategy that provided the subjects with more practice, imagery association, deeper level of semantic

processing and elaboration that enabled successful learning and retention. The learning and retention of the lexical items contributed immensely to the level of performance recorded in the test of comprehension as seen on the table above. The study was designed in such a way that the three variables: learning, retention and comprehension, complement one another. This is the reason why success on test of learning and retention has positive impact on results obtained on test of comprehension at the post – test as seen on the table above.

In contrast, however, the same analyses on the table show that within pre-test 2, there are obvious differences in terms of numbers of students who passed the items tested. In other words, while some items recorded relatively more (i.e., above 100subiects) others within the said test level recorded below hundred (100). The following lexical items tested under Photography lexical field that have relatively more number of subjects who passed within pre-test 2 include:

Flasher, (PRT2=109subjs=36.3%);

Snapped, (PRT2=102subjs=34%);

Negative, (PRT2=116subjs=38.7%);

Colour, (PRT2=191subjs=63%);

Photo, (PRT2=148subjs=49.3%);

S***napping***, (PRT=100subjs=33.3%);

Darkroom, (PRT=101subjs=33.7%);

Studio, (PRT2=110subjs=36.7%) etc

On the other hand, the following are examples of lexical items with lower number of subjects who passed within the same test level:

Aperture, (PRT2= 51subjs=17%),

Tripod, (PRT2=68subjs=22.7%);

Focus, (PRT2=54subjs=18%),

Composition, (PRT2=42subjs=14%);

Camera Shy, (PRT2=; 70subjs=23.3%) etc.

The differences in performance in terms of number of student who passed certain items within pre-test 2 can be accounted for in terms of the dichotomy between what constitute the subjects' productive and receptive vocabulary (as discussed in analysis of results of pre-test 1 and post-test 1 in previous pages). This is one probable explanation since the pre-tests were conducted prior to the experiment with the Keyword Strategy. Others could perhaps be related to fossilization, issues of bilingualism, poor learning, lack of interest, attitudes and so on.

The conclusion is that between pre-test 2 and post-test 2 of CCPT of Photography lexical items, there are higher percentage number of subjects who passed almost all the items tested in favour of the post-test. Therefore, this implies that the use of the Keyword Strategy has positive effect not only on retention but has also enhanced comprehension.

4.2.7. Analysis of Test Results for Differences in Scores Obtained on MAP between Males and Females

This analysis provides answer to research question 5 which seeks to find out whether the results obtained from the use of the Keyword Strategy for lexico-semantic learning, retention and comprehension differ between genders. To determine this, the scores obtained by males and females subjects across all the tests conducted at the two levels are statistically treated. As with all analysis, a sample of randomly selected scores obtained by the subjects are presented in table below:

Table 4.17:Samples of Raw Scores Obtained by Males and Female at Pre-test1& Post-tests 1

Subj., numb & gender		PRT1 SCORES out of 25			PST1 SCORES out of 25		
		M	A	P	M	A	P
1037	M	9	7	6	24	12	21
2094	F	8	7	9	19	21	20
2032	F	8	11	7	12	18	21
2017	F	6	03	7	17	24	15
2081	M	8	09	7	21	17	22
1003	F	9	07	10	20	19	18
1014	M	8	09	10	21	24	21
2049	M	10.5	05	6.5	24	21	23
1033	M	6.5	10	10	20	21	24
2008	F	10	11	11	19	22	23
2001	F	09.5	09	08	23	23	25
1057	M	10	12	10	23	23	24
2047	M	11	14	10	22	24	22

2077	M	10	10	11	21	22	24
1034	M	09	10	09	19	24	24

Table 4.17 shows the samples of raw scores obtained by males and females on test of WLRRT and CCPT. Table4.18 below shows descriptive analysis showing the differences in scores between males and females in the study group.The analyses were conducted using scores of 50 subjects in the ratio25males:25females

Table 4.18: Differences in Scores Obtained on WLRRT between Males and Female at Pre-test 1 and Post-test 1 N=50

Gender	Pre-test1						Post-test 1					
	M		A		P		M		A		P	
	sum	Mean	Sum	Mean	Sum	Mean	sum	mean	sum	Mean	Sum	Mean
M	220	4.4	259	5.18	204	4.08	734	14.68	742	14.84	675	13.5
F	210	4.2	263	5.26	207	4.14	761	15.22	809	16.18	722	14.44

Table 4.18, shows that at Pre-test 1 the mean of scores obtained by female subjects on Agriculture lexical items (5.26) and Photography lexical items (4.14) are higher than those obtained by males subjects (A 5.18; and P 4.08) on the same lexical field items, while the mean of scores of male subjects on Medicine lexical items (4.4) is higher than females (4.2). Similarly, at Post-test 1, the mean of scores obtained by female subjects on Agriculture, Medicineand Photography lexicalitems are higher than the mean scores obtained by malesubjects on the same lexical item fields. The study concludesthat betweenPre-test1 and Post-test 1, the scores obtained

on WLRRT by female subjects are higher and different from those of males on Medicine, Agriculture and Photography lexical items. Further analysis of differences in scores of male and females are presented in Table 19 below.

Table 4.19: Differences in Scores Obtained on CCPT between Males and Females at Pre-test 2 and Post-test 2

Gender	Pre-test2						Post-test2					
	M		A		P		M		A		p	
	sum	Mean	sum	Mean	Sum	Mean	sum	mean	sum	Mean	Sum	Mean
M	231	4.62	245	4.90	196	3.92	830	16.6	850	17.00	748	14.96
F	238	4.76	232	4.64	242	4.84	810	16.2	832	16.64	851	17.02

Table 4.19 shows that atPre-test 2 the mean of scores obtained by female subjects on Medicine (238;4.76) and Photography lexical items (242;4.84) respectively are higher than those obtained by males subjectson the same lexical field items while the mean of scores of male subjects on Agriculture at pre-test 2 is higher than those of the females. However, at Post-test 2, the scores obtained by male subjects on Medicine (16.6) and Agriculture (17.00) are higher than the mean of scores obtained on the same lexical by female subjects (M= 16.2; A16.64) except for Photography lexical items where the mean score of female subjects (17.02) is higher than male's (14.96). The study concludes therefore that at the post-test1, female subjects' scores are higher on all three MAP lexical items. However, at Post-test 2, males' scores are higher on Medical (M) and Agriculture (A) lexical items only.

The analysis in tables 4.18 and 4.19 above shows that there are differences in scores obtained by males and females on test of WLRRT and CCPT at the Pre-tests and the Post-tests. The

differences in scores however varies between lexical items. In other words, the differences in performance is contradictory and thus inconclusive

4.3. Discussion

The data collected from the survey and WLRRT and CCPT tests which were designed to help to determine the effects of the Keyword Strategy on lexico-semantic learning, comprehension and retention are analysed in the last section. The survey questions sought to find out the extent of awareness of lexical learning strategies on the one hand and to determine the most frequently use lexical strategies on the other.

The analysis of the extent of awareness of lexical learning strategies in this study shows that the undergraduate subjects are aware of all the lexical learning strategies surveyed. This finding corroborates similar results reported in studies of English as Native Language(ENL), English as Foreign Language (EFL) and English as Second Language (ESL) students such as: Amirian and Heshmatifar, (2013); Lin, (2008); Marin- Marin, (2005); Fan, (2003); Kafipour, (2010); Lawson and Hogben, (1998); Schmitt, (1997); Gu and Johnson (1996); Ahmed, (1989) and others. Therefore, on the whole, it is evident that like most language learners from ENL and EFL contexts, the ESL learners in this study are not only aware of lexical learning strategies but they also use them.

With regards to the use of the lexical strategies, the results from the survey indicated that Memory (MEM) and Determination (DET) strategies are the most frequently used Strategies by undergraduate ESL subjectsin the present study. Between these two frequently used strategies, on individual item basis, the Determination Strategies (use of dictionary, and use of context clues) record the highest percentage of 33.3% and 25.33% respectively,while the Memory strategies (use of Keyword and use of acronyms) recorded 8% and 24.7% respectively. On the

whole, Determination Strategies responses are 58.7%, while Memory strategies responses are 41.3%. The not frequently used strategies are Metacognitve (e.g., word cards), Cognitive (e.g., making sentences with words) and Social strategies (asking friends / teachers, interaction). Based on the survey of awareness and use of lexical strategies, the finding is that the subjects in this study are aware of all lexical strategies and also frequently use Determination strategies (i.e. context clues and the dictionary etc) and Memory strategies (Acronyms and Keyword etc).

Research analysis of vocabulary strategy use has yielded a number of converging and diverging results because of the differences in the nature of subjects and the context of study. The findings from the present study regarding the frequent use of determination strategies by ESL subjects used in this study corroborates similar results reported by, Besthia, (2018), Amirian and Heshmatifar, (2013), Marin-Marin, (2005); Fan, (2003) Schmitt, (1997); Gu and Johnson (1996) and Ahmed, (1989). For instance, in a study with Indonesian EFL students, Besthia, (2018) reported that the determination strategies are most frequently used.In their study also, Amirian and Heshmatifar (2013) revealed that determination strategies such ascontext clues and dictionary strategies are the most preferred and used by 80 % and 90% of Iranian EFL students use in the study. Ahmed, (1989) reports that proficient learners use more context and dictionary strategies than any other type.

In the present study also, the analysis of the survey shows that Memory Strategies are the second frequently used. This agrees with the result of Kafipour' s (2010) in which the use of memory strategies were reported as first frequently used among Iranian EFL students used in the study; however, this is in contrast to findings by Besthia, (2018) and Amirian and Heshmatifar, (2013) whose findings indicates that Memory Strategies are the third most frequently used. In contrast, Behbahani (2016) shows that Metacognitive Strategies are the most frequently used by

his EFL students while the Social Strategies are least used. In another study which surveyed the vocabulary learning strategies of students in Kurdistan University, Ali, (2016) discovered that the Cognitive Strategies are the most popular strategies among the learners while the Social Strategies are found to be the least preferred strategies. This is in contrast to the findings from this study in which Metacognitive and Social Strategies are not frequently used.

The resulting divergent outcomes regarding choice of frequently and not frequently use strategies does not come as a surprise owing to the differences in the nature of the subjects and the contexts of language learning. For instance, while Amirian and Heshmatifar's (2013) subjects were a combination of postgraduate and undergraduate students studying English in EFL context, Kafipour's (2010) subjects consisted of only undergraduate of English in EFL context as well and for the present study, the subjects are undergraduate students of English in ESL context. Furthermore, vocabulary learning and retention in EFL context by natureis more personal and individualistic than social while it is both personal and social in the ESL context. Again, unlike, the ESL context, perhaps it may be that in EFL contexts, teachers mainly focus on the main four skills such as writing, reading, listening, and speaking and do not have time for teaching vocabulary separately while in ESL contexts vocabulary items are taught both implicitly and explicitly. Whatever the case maybe, research is still ongoing and hopefully may be in the near future, a consensus may be agreed upon.

The present study also analyses the significant level of differences in performance on test of WLRRT and CCPT in order to highlight the effect of Keyword Strategy on lexico-semantic learning, retention and comprehension. The finding, based on the data analyses reveals that the subjects differ in mean performance in favour of the post-tests which implies that the use of Keyword Strategy had a positive effect on the Subjects' lexico-semantic learning,

comprehension and retention of MAP lexical items. This is evident in the higher means scores obtained at post-tests 1&2. The outcome of this study agrees with similar results reported from studies of Keyword Strategy by Ali, (2015); Alakaby, (2013); Tavakoli & Gerami, (2012); Zarei & Salimi, (2012); Win, (2012); Alzahrani, (2011), Gue, et al. (2010); Baleghizadeh & Ashori (2010); Abdul Razak, (2008); Ismail, (2008); Brazley, (2008); Richmond, et al, (2008); Fritz et al, (2007) ; Hsu, (2007); Yaakub, (2007); Chen, (2006); Sagarra and Alba, (2006); Gual, (2004); Hauptmann, (2004).These and many other related studies have reported the powerful impact as well as the effectiveness of the Keyword Strategy on improving learners' retention, and recall of definitions of vocabulary/lexical items. The success of the Keyword Strategy as recorded in the present study could be attributed to many reasons as discussed below:

One very important reason for the success at the post-test level is that the Keyword Strategy provides information through two channels: visual/imagery and verbal; it thus yields superior retention compared to any other technique that provides information just through the verbal channel. The subjects processed the information at these two levels. Thus, it allows them to learn, retain, and recall vocabulary items by creating links between the new information and the subjects' schemata.

Furthermore, the subjects' positive attitude and the determination to improve their vocabulary skill was another reason for better performance at the post-tests. Finally, the fact that the Keyword Strategy itself was built on the principles of self consciousness and remembering in learning has helped in no small way to strengthened the ability to recall vocabulary items through deliberate, intentional and explicit learning actions that lead to success.

In the researcher's effort to further highlight the effect of Keyword Strategy on lexico -semantic retention, data collected from tests conducted were analysed to find out the MAP lexical field item in which the subjects scored highest marks. This analysis provides the researcher with an overview of the subjects' performances in general on MAP. The results of the analysis so far on Tables 4.8, 4.10, 4.11 and 4.12 show that within the pre-tests, the highest Mean scores were obtained on Agriculture lexical item at both pre-test 1 and pre-test 2. While on the other hand, within the post-tests, the highest mean scores were obtained on two different lexical field items, that is Medicine (812.83) and Photography (903.83) lexical items respectively. Further analysis, shows that between pre-test 1 and post-test 1, the highest mean scores were recorded for Agriculture lexical items (266.5) at pre-test 1 and Medicine lexical items (812.83) at post-test 1, while between pre-test 2 and post-test 2, the highest mean (278.50) is recorded for Agriculture lexical at pre-test 2; and Photography (903.83) at the post-test 2. It can be concluded therefore that the highest scores obtained by the Subjects are spread across the MAP lexical field items.

The analyses of within test levels highest scores on MAP lexical item show some formof contradiction in the outcomes. For instance, while theresults of withinlevel analyses for pre-test 1 and pre-test 2 shows that the highest scores were obtained on Agriculture (A).It shows that there is a direct relationship between scores obtained within this level i.e., learning and retention complements comprehension. It implies that at the pre-tests, the Subjects are on the same level of competence which is indicative of the absence of treatment. However, within post-test 1 (test of lexico-semantic learning and retention) and Post-test 2 (test of lexico-semantic comprehension) there are differences between lexical items with the highest scores. For instance, while at the post-test 1, the highest score was obtained on Medicine (M) lexical items, however, at the post-test 2 the highest score was recorded for Photography (P) lexical items.

The diversity in terms of MAP lexical category with highest mean scores as presented above is attributed to increased interest and motivation experienced by the subjects as a result of the use of the Keyword Strategy. By its nature, the Keyword clues generated for learning the lexical items are in themselves the source of the increased interests because they can be funny, nonsensical, bizarre, etc. Specifically, the highest scores obtained on Photography lexical items can be attributed to the influence of Global System of Mobile communication (GSM) gadgets that uses digital technology such as Android mobile phones. The availability of digital mobile phones have taken the concept of photography to another level so much so that many lexicalitems have been internalized.

The subjects' performances on discrete items tested in each MAP lexical field category also formed the basis for highlighting the effect of Keyword Strategy. This analysis shows that a higher percentage number of subjects obtained more correct responses on items tested in each of the MAP at the post-tests. This is indicative of the positive effect of the Keyword Strategy employed for learning which enabled more subjects to obtain more correct responses at the post-tests. In general, this analysis shows that higher numbers of correct responses were obtained by more subjects at the post-tests.

Despite that more correct responses to the WLRRT and CCPT test items were gererally obtained by higher number of subjects at the post-tests, yet,at the same times,the number of subjects who passed each lexical item at this level vary on items to items items. For some lexical items, the numbers of subjects who obtained correct responses equal or nearly 100%, while for others, it is generally below.

The following MAP lexical items tested in WLRRT and CCPT at the post-tests have higher number of respondents who obtained correct responses on them:

Syringe, Blood, Victim, Fever, Patient, Surgery, Dosage, X-ray, Disease, Thermometer, Stethoscope, Nutrition, Virus, Paralysis, Bacterial, Symptoms, Diagnosed, Sick, Diseases, Symptoms, Doctor (Medicine) etc; Fertilizer, Pollination, Manure, Drought, Irrigation, Compost, Agriculture, Arable crop, Plough, (Agriculture) etc; Album, Camera, Black & white, Photograph, Photographer, Say cheese, Red eye, Kodak (Photography)etc.

In contrast to the above, the following lexical items have relatively low number (below 100) of subjects who obtained correct responses on them:

Mortality, Inflammations, Headaches, Vaccines, Immunize, Bedsore, Antiseptic Typhoid, Diagnosis Influenza (Medicine)etc; Weeding, Nutrient, Bee Keeping, Swarm, Heterozygous, Agronomist, Tractor, Sapling, Shrubs, Grafting, Hatchery, Hybridization, Breeding, Biennial, Brucellosis, Quarantine, Harrower, Salinity, (Agriculture)etc ; Candid photo, Frame, Exposure, Photogenic, Composition, Flash, Photo bomb, Fixer, Opaque, Lens, Telephoto, Aperture (Photography) etc

One possible explanation relates to the differences in the nature of type of vocabulary knowledge being tested. The two types of vocabulary knowledge being measured in vocabulary learning are receptive and productive (Laufer, 1998; Laufer & Paribakht, 1998; Henriksen, 1999; Nation, 2001; Read, 2000; and Schmitt, 2014). The differences between the two is that receptive knowledge has to do with the ability to recall the meaning of a word when one is presented with its form while productive knowledge has to do with the ability to use and produce the correct form to express required meaning (Laufer et al., 2004; Laufer and Goldstein, 2004; Nation, 2001;

Schmitt, 2010). Unlike the productive vocabulary which consists of words that are used for self expression in speech or writing, receptive vocabulary are most often understood when heard or read, but for a variety of reasons they are rarely used in conversation as such their meanings may possibly be unaccounted for by students. The lexical items tested in Word Learning, Retention and Recall (WLRRT) measures receptive vocabulary knowledge.

In general, therefore, those lexical items with higher number of subjects at the post-tests identified above represent the most frequently use. They have been, more likely, receptively and productively learned .On the other hand, the items with lower number of subjects at the post-tests are the less frequent words receptively known by the subjects but are often not productively used by them. This implies that the subjects have some partial productive knowledge of some words they knew receptively but were unable to demonstrate productive knowledge to the same degree as receptive knowledge of the less frequently used words.

In support of the above result, research evidence from studies investigating the differences between receptive and productive vocabulary knowledge by Tschirner (2004), Fan (2000), Laufer (1998), Laufer and Paribakht (1998),) and Waring (1997a; 1998) have shown that the relationship between receptive and productive vocabulary knowledge is rather complicated. It is complicated to the extent that there is no consistent ratio between words known receptively or productively (Fan, 2000 and Laufer and Paribakht, 1998). The results of these studies show that receptive vocabulary is generally larger than productive vocabulary and also precedes it i.e. knowledge about a word precedes it, that is, knowledge about a word precedes its use. In another study conducted by Webb (2008) it was discovered that the learners demonstrated partial productive knowledge of almost all the words they know receptively but are not able to

demonstrate productive knowledge to the same degree as receptive knowledge, especially with the less-frequently used words.

The analysis of differences in performance between male and females as carried out in this study provides information about gender differences in the use of Keyword Strategy for lexico-semantic learning, comprehensionand retention. The results of the analysis on tables 4. 18 and 4.19 show that there are differences in scores obtained by male and female subjects whose test results were analysed. However, the differences in scores are inconclusive across the lexical field items. For instance, while the females' mean scores are higher for all the lexical items at the post-test1, at post-test 2, only scores obtained by males' on Medicineand Agriculture lexical items are higher. The female subjects can be said to have perform higher thantheir male counterparts in this respect.

The inconclusive nature of the results could be attributed to nature of the test administered, that is, the fact that WLRRT is multiple choice item that test learning, recognition, retention and recall of definition that may thus be easier, while the CCPT tests comprehension require deep levels of processing. In the long run, it boils down to the issue of individual differences in learning and comprehension which is definitely beyond the control of all.

The study of differences between male and female achievement in language acquisition and learning provides insight into psycholinguistics dynamics and variations which are very important in understanding human behaviour. A great number of research findings on gender differences in Second language vocabulary acquisition and learning have been inconclusive in the sense that some outcomes highlight the superiority of males over females, while someshow females being better language learners than male and still some others demonstrate that gender is

irrelevant in Second or Foreign language acquisition and learning as seen in the studies by Boyle, (1987); Scarcella and Zimmerman (1998); Lin and Wu, (2003); Lynn et al. (2005); Edelenbos and Vinjé (2000); Nyikos, (1990); Jimenez and Terrazas.(2005-2008) Jimenez, Meara and Fitzpatrick, (2000); Jimenez and Moreno, (2004) ; Jimenez & Ojeda,(2007,2008, 2009); Jimenez, (2003); Jimenez (2010); Meunier (1995); 1996; Yang, (2001).

Aslong asthere are scholars, researches into gender differences will be an ongoing investigation and hopefully, in the near future more studies will produce results that clearly and unambiquouslyestablish gender differences in learning

CHAPTER FIVE

SUMMARY AND CONCLUSION

5.0. Preamble

This chapter presents the summary of the study, conclusions, and as well the contributions to knowledge.

5.1. Summary

With the aim of investigating the effect of Keyword Strategy on learning, retention and comprehension of lexical items, the present study was situated within two theoretical frameworks of the Dual Code Theory, (Paivio, 1986) and the Depth Levels of Processing, (Craick and Lockhart, 1972, 1973, 1975).

The study sought to respond to five research questions which were derived from five research objectivesrelating to the effects of Keyword Strategy on vocabulary learning, retention and comprehension.Research question 1 sought to find out awareness and frequency of use of lexical learning strategies; research questions 2, 3, and 4 sought to find out the effects of the Keyword Strategy; and research question 5 sought to find out gender differences in performance resulting from the use of the Keyword Strategy.

The data were collected using the survey and test techniques. The 300 undergraduate ESL subjects used in the study were made to complete a Vocabulary Learning Strategies questionnaires used for the survey. They were given a pre-test of WRLRT and CCPT at the beginning and later assessed on delayed recall of MAP lexical items through the post-test of WLRRT and CCPT.

The subjects' responses on the survey questionnaires as well as their scores from the two tests were analysed using percentages and mean descriptive statistics.The finding of the study which

reveals the effectiveness of the Keyword Strategy has been supported in a number of related studies conducted in both first and foreign language learning contexts as discussed in the literature review.

5.2.Summary of Findings

The purpose of this study is to investigate the effect of Keyword Strategy on lexico-semantic learning, comprehension and retention among undergraduate ESL learners in FCE Kano. To this end, five research questions guided this study.

To address the first survey research question, two sub-questions were designed from this. The first sub-question asked for the extent of awareness of some specified lexical strategies and the second sub question asked for frequency of use of lexical strategies. In order to analyse the results, for both the first and the second sub-questions, the subjects' responses were counted and their percentages calculated.

The findings of the sub-questions for research question one shows that the undergraduate ESL subjects are aware of varieties of lexical strategies and frequently use the determination and memory strategies.

The above finding addresses the first research question of the study that seeks to examine the extent of awareness and use lexical learning strategies by the subjects. These findings are in line with previous research findings reported by Besthia, (2018); Amirian & Heshmatifar, (2013) and others.

The second, third and fourth research questions are the main concern of this study because they seek to establish the effects of Keyword Strategy on learning, comprehension and retention. The scores obtained by the undergraduate ESL subjects on test of WLRRTand CCPT at the pre-tests and the post-tests were analysed using mean statistics and percentages to determine

significant differences in scores, the lexical field with highest scores, and percentage number of correct response on words in each of the MAP field.

The result of the analyses of the second research question shows that that there are significant differences in performance on the test administered to the subjects as seen in the scores difference in the scores obtained by the subjects at pre-tests and the post-tests where the scores obtained at the post-tests are significantly higher than those obtained at the pre-tests. This is observable in the mean difference as seen on table 4(where Prt 1 Mean = 17.3200 and Pst 1 Mean = 43.4333) and table 6 (where Prt 2 Mean = 17.6233 and Pst 2 Mean =52.5084)

The third research question also contributes in the overall determination of the effects of the Keyword Strategy. It seeks to identify the MAP lexical field items on which highest scores were obtained by undergraduate ESL subjects at the pre-tests and the post-tests. The result of the analyses of the third research question shows that, between pre-tests1&2 and post-test1&2 levels, the highest mean scores were obtained at the post-tests. Specifically hese highests scores were obtained on Medicine lexical field (Mean=812. 83) and Photography lexical field (Mean=903.83).

The fourth research question seeks to identify the subjects' performances on each of the items tested in WLRRT and CCPT at both pre-tests and the post-tests. For the purpose of analyses, the number of correct responses on each lexical items tested in WLRRT and CCPT were counted in a systematic order and the percentages were calculated. The result showed that on individual item basis, more subjects obtained more correct responses at the post-test than at the pre-test. The findings indicate that higher a higher percentage number of subjects obtained correct responses on lexical items tested in WLRRT and CCPT at the post-tests.

In summary, the result of the analyses of second, third and fourth research questions on the effects of Keyword Strategy shows the strategy has positive effect on learning, comprehension and retention of the MAP lexical field items studied. These findings are in line with previous research findings reported by Ali, (2015); Alakaby, (2013); Tavakoli & Gerami, (2012); Zarei & Salimi, (2012); Win, (2012); Alzahrani, (2011), Gue, et al. (2010); Baleghizadeh & Ashori (2010); Abdul Razak, (2008); Ismail, (2008); Brazley, (2008); Richmond, et al, (2008); Fritz et al, (2007) ; Hsu, (2007) and many others ;

The fifth research question seeks to identify gender differences in performance on test of learning, comprehension and retention of MAP lexical field items. To arrive at this finding, randomly selected test scores of fifty males and fifty females were analysed and compared. It is observed that males and females each performed better than the other on different aspects of the MAP. The finding is that the differences in males and females is inconclusive, This has also been reported in studies by: Boyle, (1987); Scarcella and Zimmerman (1998); Lin and Wu, (2003); Lynn et al. (2005); Edelenbos and Vinjé (2000); Nyikos, (1990); Jimenez and Terrazas.(2005-2008) Jimenez, Meara and Fitzpatrick, (2000); Jimenez and Moreno, (2004) ; Jimenez & Ojeda,(2007,2008, 2009); Jimenez, (2003); Jimenez (2010); Meunier (1995); 1996; Yang, (2001).

5.3. Conclusion

This study investigates the effect of Keyword Strategy on the vocabulary learning, comprehension and retention. The focusof the study is on lexico-semantics in the sense of lexical items and their meanings.

One of the findings reveals that theundergraduate ESL learners in the study group are aware of the various lexical learning strategies and frequently use memory strategiesand determination strategies. The study concludes that like most first, and foreign language learners, the ESL subjects in this study not only use different types of strategies but are also selective in terms of the types they use. The subjects' frequent use of the memory and the determination strategies shows that they are aware of their own preferences and feel responsible for their own learning. This is true considering that the subjects are undergraduates. This knowledge provides language teachers, and researchers with a better understanding of how the ESL learner operates when using lexical strategies.

A significant conclusion relates to the effectiveness of the Keyword Strategy as a vocabulary learning strategy. The outcome of the study reveals that the Keyword Strategy is effective for lexico-semantic learning, comprehension and retention. This is based on the results obtained on tests of word, retentionlearning, and recall (WRLRT) and tests passage comprehension (CCPT) which reveals a significant difference in performance between subjects in favour of the post-tests.

Further findings reveals that the positive effect of Keyword Strategy has bearing on the highest scores obtained on Medicine and Photography lexical field items at the post-tests and the higher number of correct responses obtained on specific lexical items by a large number of subjects at the post-test as well.

The study concludes that the use of Keyword Strategy has a positive impact on the learning of the targeted MAP lexical items. Similar conclusions about the positive effects of the Keyword Strategy have also been reported in both earlier and recent studies by Ali, (2015); Alakaby,

(2013); Tavakoli & Gerami, (2012); Zarei & Salimi, (2012); Win, (2012); Alzahrani, (2011), Gue, et al. (2010); Baleghizadeh & Ashori (2010); Abdul Razak, (2008); Ismail, (2008); Brazley, (2008); Richmond, et al, (2008); Fritz et al, (2007) and others as discussed in the review of empirical studies.

Regarding the differences in performance between males and females resulting from the use of the Keyword Strategy, the findings from the study reveals that males and female performed better on different aspects of MAP Lexical fields investigated. A plausible explanation is that may be some MAP lexical items are more 'user friendly' to certain gender type than to others; and or at best, it may be individual differences in learning. The study, therefore, concludes that results are contradictory, and hence, are inconclusive. This conclusion has also been arrived at in studies by as Boyle, (1987); Scarcella and Zimmerman (1998); Lin and Wu ,(2003); Lynn et al. (2005); Edelenbos and Vinjé (2000); Nyikos, (1990); Jimenez and Terrazas.(2005-2008) Jimenez, Meara and Fitzpatrick, (2000); Jimenez and Moreno, (2004) ; Jimenez & Ojeda,(2007,2008, 2009); Jimenez, (2003); Jimenez (2010); Meunier (1995); 1996; and Yang, (2001).

5.4. Pedagogical Implication

The present study has pedagogical implications for the students, teachers, syllabus designers, and materials developers. As shown, the findings revealed that the Keyword Strategy was very effective in enhancing English as second language (L2) undergraduate learners' word learning comprehension and retention. In general, the Keyword strategy enhanced lexical learning more effectively as seen in the significant differences in the scores between the pre-test and the post-

tests, the highest scores obtained at post-tests and the fact that more correct responses to the meaning of lexical items were obtained at the post-test as well.

To English as Second Language teachers, the significance of this study is that it exposes them to an alternative pedagogical approach that works effectively with all learners as well as produce desired result. It will create awareness as well as direct attention of ESL teachers and learners towards exploring the use of Keyword Strategy as a result of its proven effectiveness as a means of enhancing vocabulary retention and comprehension which will further enrich teaching and learning. For ESL teachers, using the Keyword Strategy in language teaching, depending on the level of learning, requires facilitating, familiarizing and training the learners on the workings of the strategy. The undergraduate ESL subjects in this study received facilitation because they are advanced learners. It is, however, suggested that for beginning and intermediate learners, the ESL teachers should provide some training on how to use the strategy.

To the ESL learners, the objective of vocabulary learning is to encourage the learners to expand as well as enhance their vocabulary knowledge, retention and their long-term recall. The Keyword Strategy exposes learner to target lexical items in an intentional and explicit manner and provides the learners with enough word-focus and form- meaning relationship (Laufer & Rozovski-Roitblat, 2015; Schmitt, 2008, &Yoshii, 2014). This enables the learners not only to learn/acquire the words, but also to retain and recall them for long-term use.

In designing vocabulary courses/lessons, Second language syllabus designers and material developers should keep in mind that the Keyword strategy is flexible and adaptable. It can be successfully incorporated in almost all content areas of the syllabus. For example, it can be used to teach and learn words, concrete and abstract nouns, and other parts of speech.

5.5. Contributions to Knowledge

The study has contributed to knowledge and filled the gap in the current literature in the following number of ways:

The study addressed the insufficient evidence of research on the effects of Keyword Strategy on vocabulary learning especially in multilingual second language context. On the contrary, a large number of studies that investigate the Keyword Strategy are available in First and Foreign language context using monolingual and bilingual learners only. By conducting this study in a multilingual context as well as using multilingual undergraduate ESL learners, the scope of Keyword Strategy research has been widened. This work has thus added to existing literature in terms of the extension of the sample to include multilingual from a second language context.

In addition, the present study examined the effect of the Keyword Strategy on lexico-semantic learmimg, comprehension and retention. Thus, the study looked at three cognitive areas: learning, comprehension and retention.This is also another contribution becausein contrast, most studies conducted as cited in this work were limited to one or two areas only.

This study has also filled the gap in the literature in terms of the choice and nature of the lexical items for learning. In this study, more abstract and complex items were successfully internalized using the Keyword Strategy. Generally, most studies have tended to use the Keyword Strategy for acquiring concrete ideas. In fact, most researchers, such as Sagarra and Alba, (2006); Gual, (2004); Hauptmann, (2004); have posited that the Keyword Strategy works better with concrete and pictureable lexical items. However, in this study, while some of the lexical items fall in the above category, majority are abstract with no such pictureable referents and yet the subjects were

able to internalize the lexical items. This may due to several factors of which include age, interest, motivation and attitude to learning.

Despite the availability of large number of studies on gender and language learning in Second Language Learning(SLL), most studies that relate to investigating the effect of the Keyword Strategy did not look at the aspect of gender differences resulting from its use. Thus by adding aspect on gender, this study has contributed to knowledge.

5.6. Suggestions for Further Study

The present study investigates the effect of the Keyword Strategy on the learning, comprehension and retention oflexical items of Medicine, Agriculture and Photography (MAP). The MAP lexical items were of the type known as registers or specialized words. Therefore, further studies can be conducted on the effect of the strategy on the more generalized lexical items.

This study was conducted with undergraduate ESL learners at an advanced level.It is suggested that further studies can consider learners at the beginning and intermediate level of proficiency in English as a second language.

Again, it suggested that further studies of the effect of Keyword Strategy in developing any of the four language skills could be conducted as well for example Investigating the effects of Keyword Strategy on enhancing reading comprehension among English as Second language learners.

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APPENDICES

APPENDICESAppendices

APPENDIX I: Students' Designed Keyword for MAP LEXICAL ITEMS

Medicine	Keyword clue	Agriculture	Keyword clue	Photography	Keyword clue
Antibiotics	anti bayo thick	Arable	Are able	Composition	Kampozee
Pharmacy	fama see	grange	Garanji	Exposure	Isposha
Blood	Buludi	transplant	Taransflan	Telephoto	Telefot
Bacteria	back to ria	weeding	We thee	Extender	Xtanda
Syndrome	Seein drum	mulching	Mun chi	black and white	Bulawai
Radiology	Radio	compost	come pos	enlargement	Elajime
Stethoscope	sat as cope	grafting	Garafiti	Picture	Piicha
Thermometer	tamo miita	lease	Lizzy	Retouch	riitosh
Asthma	asma	Swarms	su wan	positive image	Fourzi tif imaj
Dosage	Doosa j	furrow	Furo	candid photo	Kandifoto
Virus	varus	livestock	liar be talk	Photographer	Futugarafa

Laboratory	labotore	Fertilizer	Fataliza	Frame	Firem
Laboratory technician	laboretek	plough	Fulawu	darkroom	Dakarum
Surgery	Sir Jir	Manure	Manuwa	Focus	Pocus
Fever	fiba	forage	4 raji	Lens	Lins
Paralysis	faralis	hay	Hei	camera shy	can my shai
Malnutrition	Man nut tree	Produce sorter	Pudusota	Camera	Kamara
Enema	Ene ma	Subsistence	Subsister	half tone	Habto
Doctor	DOK	Agriculture	agree to cult	say cheese	Sai chiiizzz
Vaccine	vasin	Farm	Pam	underexposure	unda expo
Nurse	Nas	Farmer	pama	Snap	See nafs
Dispensary	this pence	Seedling	see the li	Pin up	Peenop
Therapy	tirapi	Husbandry	haus been dri	Blur	Bulur
Symptoms	seeing toms	Animal	Ai nima	image	ima ji
Diagnose	die go nose	Feed	Fiidii	Flash	Filasha
Depressant	this press ant	erosion	iro shan	Fixer	Pikza
Intramuscular	intamusukule	Nursery	Naa za re	Flare	Filaya
Prognosis	furagonoses	climate	cry mate	Kodak	Kodaki
Tranquilizer	tankoliza	fiber	Fayiba	Toning	Tony
Patient	pay eatence	Tractor	Tarakta	wetting	Wetin
Optician	up tea sha	Horticulture	Hot it kulcha	0paque	Opek
Dental	dantalle	land tenure	lan tanuwa	film	Fim
Surgeon	Sir Geo	Cultivation	kar ta bishi	anti flicker	anti filika
Drug	kwaya	swarms	su wan	Filter	Filinta
Influenza	in flew zem	Pests	Pess	Tint	Tiniti
Disease	this is	insecticides	in sai tasad	photograph	Fotogaraf
Discharge	Dis chaji	trough	Tarawuf	snap shot	See nafshot
Ambulance	an bulas	Irrigation	Inrigashin	focusing ring	Pokuseerin
Spasm	see pazim	harrower	Harawa	Ferrotype	Perotaif
Seizure	See zuwa	dairy	deri	reprint	Ripirit
X-ray	esry	fallow	Palo	Aberration	abba reshin
Victim	vikti	water	wata	Stain	Sitaini
Anatomy	Anne to me	fungicides	pungisads	Engraving	n girevi
Chronic	kuro nick	breed	Biridi	jumbo size	Jumbosaiz
Bed sore	Bed saw	wheelbarrow	wil baro	Diffuser	die for sir
Fracture	furacha	shrubs	shi rob	studio	Sutudiyo
Palpation	Fal pashon	saplings	Sapalis	Background	Bakagarandi
Complication	kopilikashon	livestock	Libasitok	auto focus	hautopokas
Amnesia	Am ashia	soil	Soyals	Album	Alumba

Appointment	her fort men	acre	A car	photogenic	Foto je nick
Nutrition	nut tree shon	Agrarian	agara riya	panorama	Fanrama
Resuscitation	risusite	germination	ja muneshi	view finder	Vipanda
Dehydrate	The aidarat	bulldozer	baldaza	Blurry	Bulori
mortality	motal	Hybridization	ibidizashun	Developer	The velopa
Bile	bille	salinity	sa'i lati	photo bomb	Futobom
Immunization	E munaze	homozygous	hamazogos	red eye	ridi I
Specialist	Sipensalis	Heterozygous	Itazogos	Noise	No is
Hypertension	I patanshan	Pollination	Polina sho	Tripod	Tree pud
Infection	In fekshon	cassava	kasaba	dark cloth	Dakulot
Iodine	I o d	agronomist	agara know miss	transparent	taransiparan
Aches	eki	brucellosis	Burusilis	shutter	Shata
Pre-natal	Free natali	drought	duraut	Aperture	Apache
Flu	fulu	Quarantine	karanti	fill flash	Fili filasha
Waiting room	Wetin rum	terrain	Tarai ni	Canvas	Kavas
Capsules	kafiisul	Hatchery	haashar i	Selfie	Sell fee
.hospital	asibiti	Biennal	bai aniyal	contact print	Kanta pirit
Heredity	here the it	squatter	su qaa taa	over exposure	Oba is 4shuwa
Visual purple	bipupul	lumbering	lam bari	Graphic	Girafik
Blood donor	buluduna	vegetation	vegitashun	bellow	Bello
White matter	wai mata	perennial	paran niya	print	Firint
Ward	wad	spraying	sapareyi	Grainy	gairi rine
Palpation	pal pal shin	predators	firi datas	Portrait	pot tray
Sterilization	Sitarrealiz	outbreak	auta barka	Ambient	Am biyat
Cardiopulmonary	kadufumona	seedling	Siidiili	Foreground	4girand
Anopheles mosquito	ano filamas Q	Invasion	imbashun	Emulsion	Imulsho
Antacid	anta sidi	parasites	Farisats	Contrast	Kontaras
Inflammations	in falama sho	subsistence	subusisters	Montage	mantaj
Stretcher	sitirecha	land	Landio	ground glass	Garandagalas
Organisms	oh gams	labor	Labo	Bracket	Barakat
Typhoid	Taye 4id	mechanization	makanizasho	wallet photo	Walitfoto
Convulsion	kanbulsho	foodstuff	Fudstap	landscape	Ladisikap
Syringe	See rinji	plot	Fuloti	glossy	Gulusi
Allergy	al laji	orchard	Ocha	highlight	hi lie
Antidote	anty doti	crops	Kurups	Polaroid	paula rod
Antiseptics	anty safi t	yields	Yeed	Daguerreotype	Dear grutaip

Optician	aptishin	farmlands	Pamalad	zoom	Zazuum
Disorder	dassoda	hectare	heccar	lens hood	lansahudu
Hemorrhage	hamoraji	peasant	pee zant	Croppings	Kurupins
Physiotherapy	fisitarafi	incubator	in kubatta	Fog	Fogi
Heal	h ill	beekeeping	B kipy	flash light	Filashlai
Virologists	biroloji	aviary	abiari	Parallaxes	Faralaksis
Dermatologist	dama taloji	forestry	4 rest tree	Thin	Tini
Prescription	piriskshon	Rake	Rek	Cartridge	Katrinji
Reaction	riyakshon	stumping	Sit on P	camera stand	Kamarasita
Pneumonia	namoniya	sprayer	Sipireya	Hologram	Hulogara
Radioscopy	radiyosiko	planter	Palanta	Vignette	Vnet
fungi	punji	insects	in sait	photo call	Futukal
Ophthalmology	opatamoji	Hacienda	Hacida	Catoptrice	katof trees
Pathology	patloG	Nutrients	Nut rian	Mega pixel	Mega PZL