

**REPUBLIC OF TURKEY
ÇUKUROVA UNIVERSITY
THE INSTITUTE OF SOCIAL SCIENCES
DEPARTMENT OF ENGLISH LANGUAGE TEACHING**

**THE EFFECT OF ETYMOLOGICAL AND MORPHOLOGICAL VOCABULARY
INSTRUCTION ON RECEPTIVE, PRODUCTIVE VOCABULARY, AND WRITTEN
SPELLING OF ADULT NON-NATIVE ENGLISH LANGUAGE LEARNERS**

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ÖZET

ETİMOLOJİK VE MORFOLOJİK KELİME ÖĞRETİMİNİN İNGİLİZCEYİ YABANCI DİL OLARAK ÖĞRENEN YETİŞKİNLERDE PASİF, AKTİF KELİMELERİN ÖĞRENİLİP ÖZÜMLENMESİNE VE YAZIMA OLAN ETKİSİ

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Bu çalışma etimolojik ve morfolojik kelime öğretiminin İngilizceyi yabancı dil olarak öğrenen yetişkin öğrencilerde pasif ve aktif kelimelerin öğrenilip özümlemesinde ve yazıma olan etkisini ölçüp değerlendirmektedir.

48 yetişkin öğrenci rastgele seçilerek deney ve kontrol grupları (her grupta 24 katılımcı olmak üzere) oluşturulmuştur. Michigan İngilizce Seviye Tespit Sınavı (MISTS) iki gurubun katılımcılarının İngilizce seviyelerini tespit etmek için uygulanmış olup seviyeleri ölçülmüştür. Aktif ve pasif kelime öğrenimini ölçmek için Wesche ve Paribakt'ın 1996 Kelime Bilgi Ölçeği (KBÖ) ve yazımı ölçmek için ise paused dictation testleri kullanılmıştır. Ön test olarak kullanılan her üç test, iki ay süren etimolojik ve morfolojik kelime öğretimi uygulaması sonrasında da son-test olarak her iki gruba verilmiştir.

Deney grubunun katılımcıları için etimolojik ve morfolojik öğretim uygulanırken, kontrol grubundaki katılımcılara okullarının geleneksel kelime öğrenme yöntemi uygulanmıştır. Araştırmanın sonunda deney gurubu katılımcılarına açık uçlu anket verilmiş ve araştırmanın nitel verisi elde edilmiştir. Nicel ve nitel verilerden elde edilen sonuçlar, etimolojik ve morfolojik kelime öğretiminin deney grubundaki katılımcıların pasif ve aktif kelimelerin öğrenilip özümlemesine ve yazımı üzerinde anlamlı ve olumlu bir etki gösterdiğini ortaya koymuştur.

Anahtar kelimeler: Etimoloji, Morfoloji, Ekleme, Aktif Kelime, Pasif Kelime, İmla, İngilizcenin Öğretimi



ABSTRACT

THE EFFECT OF ETYMOLOGICAL AND MORPHOLOGICAL VOCABULARY INSTRUCTION ON RECEPTIVE, PRODUCTIVE VOCABULARY, AND WRITTEN SPELLING OF ADULT NON-NATIVE ENGLISH LANGUAGE LEARNERS

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Ph. D. Dissertation, English Language Teaching Department

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This study assesses and evaluates the effect of etymological and morphological vocabulary instruction on the adult non-native English language learners' receptive/productive vocabulary, and their written spelling.

48 adult non-native English language learners were randomly selected and assigned to two groups (24 participants in each), one as the experimental and the other as the control group. Michigan Test of English Language Placement Test (MTELP) was conducted to test both groups' English proficiency level. Two tests were prepared by using Wesche and Paribakt's 1996 Vocabulary Knowledge Scale (VKS) to test receptive and productive vocabulary knowledge of the participants and a paused dictation test was prepared to test both groups' written spelling. All these three tests were given to both groups before and after the treatment.

The experimental group's participants received etymological and morphological vocabulary instruction for two months whereas the participants in the control group were taught through conventional school instruction. At the end of the study an open-ended questionnaire was given to the experimental group participants and qualitative data of the study was obtained. The quantitative and qualitative data results revealed a significant and positive effect of etymological

and morphological vocabulary instruction on the experimental group members' receptive/ productive vocabulary and their written spelling.

Key Words: Etymology, Morphology, Affixation, Receptive vocabulary, Productive vocabulary, Written spelling, Teaching English



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LIST OF ABBREVIATIONS

CEFR: Common European Framework of Reference

EFL: English as a Foreign Language

ELT: English Language Teaching

LLS: Language Learning Strategies

VKS: Vocabulary Knowledge Scale

VLS: Vocabulary Learning Strategies

VTS: Vocabulary Teaching Strategies

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CHAPTER I

INTRODUCTION

1.1. Introduction

This chapter starts with a brief background to the study and is followed by the statement of the problem, the aim of the research study, research hypotheses and question, significance of the study, and finally, a section regarding limitations of the research study is presented.

1.2. Background of the Study

It is impossible to communicate in a language without vocabulary knowledge and it is postulated that first step in learning language is learning and retention of thousands of words. For learning words easily teachers and learners use a lot of strategies. One of the most important and negotiable strategies for vocabulary building is etymological and morphological instruction. Etymology is the study of the origin, historical development of words and the history of a linguistic form (as a word) by tracing its development since its earliest occurrence in the language, transmission from one language to another, analyzing words' components, its cognates in other languages or its cognates to a common ancestral form in an old language, and morphology is the study of the morphemes and affixation analysis of a language to separate roots (The New Oxford Dictionary of English, 1998). It is believed that etymological instruction facilitates vocabulary learning (Chatzisavvas, 2015; Matthews, 2001; Pierson, 1989; Weber, 2007).

As early as 1924, researchers note that the growth in reading power relies on continuous growth in word knowledge: Meaning/Oral Vocabulary, Receptive Vocabulary, and Literate Vocabulary (Pikulski & Templeton, 2004, p.1). Combining morphological elements including affixes, i.e. suffixes and prefixes along with word roots and base words, that are also known as derivational and lexical morphemes,

has been one of the most common methods of creating new words in the English language. The way this process works could be regarded one of the most useful understandings required to grow vocabulary. In case it is learned by students, they are equipped with a very powerful prerequisite to be fluent in that language (Anderson & Freebody, 1981; Pikulski & Templeton, 2004). In fact, understanding these structures in language learning comprises knowledge about etymology and morphology of a language.

Pierson in 1989 did a research study about the importance of using etymology in teaching English through a qualitative review research, Hutcheon et.al (2012) argued the importance of written spelling instruction through etymology and Chatzisavvas (2015) argued the profits of etymology in vocabulary development of Greek ESL students. Subsequent to learning phonics, phonology-orthography relationships and understanding onset/ rime awareness and syllable, it is required that students realize the essence of morphological structure, and historical linguistics owing to the fact that it is this structure that secures the connection among vocabulary, spelling, words, sentences and reading comprehension (Rothstein & Rothstein, 2009). It is also known to all that the students equipped with the proper morphological foundation are better readers and writers (Weber, 2007).

In some studies, the importance of morphology is emphasized and it is claimed that in case students lack morphological knowledge, the learning process might be impeded when they face a text in which they may find permutations and word combinations with quite the same meaning. Regarding students who lack morphological foundation, it could be said that they might not be able to get hold of the history, which enables them to collect words in order to convey the same concepts or to realize what makes English, English (Matthews, 2001).

Rothstein and Rothstein (2009) try to clarify and show the interrelation among five major aspects of language (phonology, morphology, etymology, semantics, and syntax) which is necessary to supply effective instructional model in order to improve language learner literacy as shown in Figure 1.

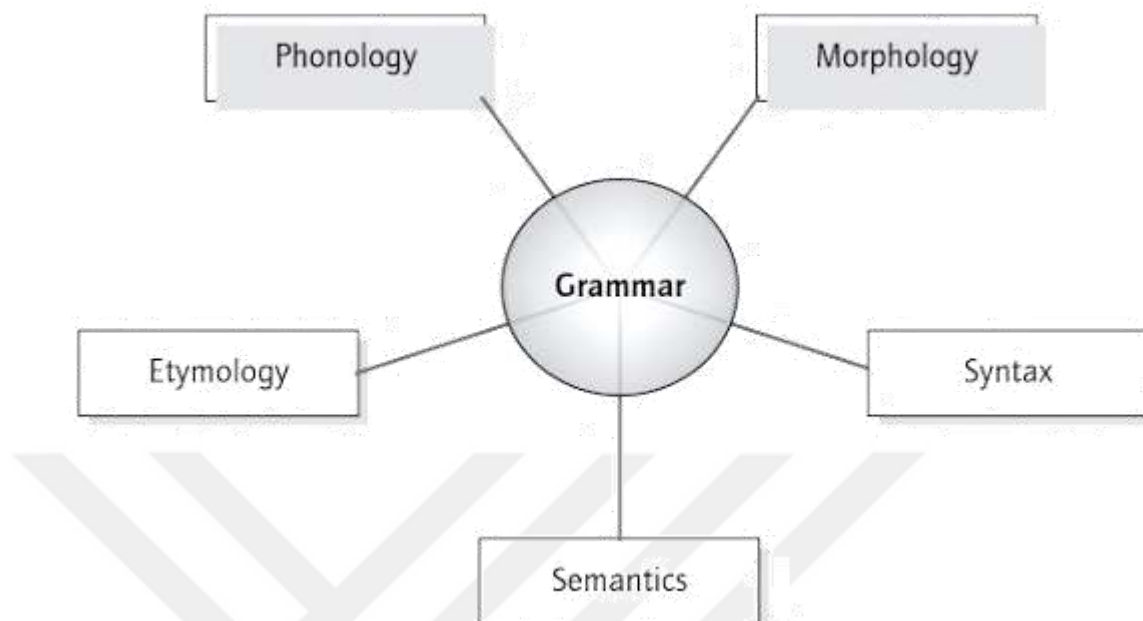


Figure 1. Interrelationship of five aspects of language (Rothstein & Rothstein, 2009, p. 20)

In regard to native English speakers, if we have an overview on studies which are related to native students, being cognizant about, morphemic structure is of paramount importance in reading and understanding texts of academic nature especially over the years of high school and almost sixty percent of unknown words that native English students face in the middle school years and beyond are complex in terms of morphology and transparent enough in terms of meaning and structure; therefore, students might be incapable of reading and inferring the meaning of words in context (Nagy et al., 1989). As it might be expected, “morphological awareness and reading derived words are significantly related to reading comprehension by the upper elementary years” (Carlisle & Stone, 2005, p. 433).

As we are going to conduct our research within the context of Turkish speakers of English as a foreign language, it is better to know that the Turkish language is categorized as an agglutinative language. So, any agglutinated morpheme maintains its positional, semantic and phonological property in the word in which it is employed. The Turkish language originates from the Turkic family. All

languages belonging to this family resemble each other with regard to linguistic structure. Verb-final word-order, vowel harmony, and agglutinative morphology are among the typological resemblances (Kenan et al., n.d). According to a study, Turkish children are capable of accurate decoding of complex pseudo-words very early (Oney & Durugunoglu, 1997) and learning to take notice of the ends of the words. They, therefore, become very cognizant of any word-end grapheme-phoneme manipulations (Durgunoglu et al., 2002).

1.3. Statement of the Problem

As a personal experience that researcher had about learning the Turkish and English languages, etymology and morphology of words helped him a lot in vocabulary learning and vocabulary expansion in the course of learning these languages. Naturally, learners are always looking for good strategies to learn a lot of words easily.

Etymological and morphological vocabulary instruction with a wide definition that was expressed in literature is not well known or applied in pedagogy or curriculum development in English classes and it is even less known among language learners. In most public schools instructions related to etymology and morphology are either deleted or given little attention in the curriculum (Rothstein & Rothstein, & Lauber 2007) and, as a result, students usually have to memorize words as if they are logograms and they cannot truly understand the deep structure of the new language or they cannot activate the prior schemata (prior knowledge) of their first language (Sampson, 1985). Therefore, in this study, we want to study the effect of such a strategy on adult B1 level English language learners in Turkish context. As aforementioned, Turkish is an agglutinative language and its users are familiar with word root and some specialties and properties of that language naturally.

In sum, in this study, we will observe and evaluate the effects after providing the possibility for the learners to become aware of the etymological background of

words (words with uncertain or unknown etymology will be mentioned, too) during their vocabulary building processes.

1.4. The Aim of the Study

We always hear complaining students who are not satisfied with their vocabulary expansion and learning new words. Vocabulary knowledge is essential because it includes all the words we must know to be able to reach our background knowledge to express our ideas and opinions in order to be able to learn about new concepts and communicate effectively. Vocabulary is like a glue that holds ideas, stories, and content together... which makes comprehension accessible for children (Rupley, Logan & Nichols, 1998/99, cited in Sedita, 2005). In this study, we are trying to use a strategy in action. Using meaningful learning in teaching seems a logical case of practice during teaching new words that do not exist in learners' schema that it will be explained later.

The main purpose of this study is to observe the impact of using etymological and morphological vocabulary instruction on non-native adult EFL learners' receptive/productive vocabulary knowledge and their written spelling skill. The students with Turkish language background (native or non-native). In fact, this study tries to provide answers to these questions after applying etymological and morphological vocabulary instruction of newly learned words to the experimental group.

1.5. Hypotheses

Hypothesis 1

H1. There is a significant difference between the pre-test and post-test scores of the control and experimental groups in regard with their receptive vocabulary knowledge after etymological and morphological vocabulary instruction.

Hypothesis 2

H1. There is a significant difference between the pre-test and post-test scores of the control and experimental groups' participants in regard with their productive vocabulary knowledge after etymological and morphological vocabulary instruction.

Hypothesis 3

H1. There is a significant difference between the pre-test and post-test scores of the control and experimental groups in regard with their written spelling skill after etymological and morphological vocabulary instruction.

1.6. Research Questions

1. What are the views of experimental group members about the etymological and morphological vocabulary instruction after the treatment?

1.7. Significance of the Study

Meara (1996, p. 37) claims that “learners with big words are more proficient in a wide range of language skills than learners with smaller words”. This study, we believe, may make teachers more aware of the effective vocabulary instruction. Learners may be able to learn and expand their receptive and productive vocabulary through this strategy more effectively and this strategy may improve their written spelling. The familiarity of learners with etymology and its subsets consisting morphology, affixation and other forms of a word would be effective in learning and remembering of unknown new words and this strategy may even improve their productive vocabulary size and written spelling skills.

In other words, results gathered from this study may put emphasis on the pedagogical significance of etymological and morphological vocabulary instruction which can be applied in curriculum design and syllabus design of a class during reading instruction sessions. Moreover, the results may give us some hints to

rewrite our reading books or to add etymology and morphology dictionaries to the books or devote some time to teaching this strategy in order to help students learn and expand their vocabulary more quickly and enhance the learning vocabulary in a more interesting and meaningful manner. As a result, while this strategy of learning new words might keep language learners away from temporary and volatile rote learning, it may enable them to build and retain vocabulary more rooted and permanent in their minds. This study tries to help learners to improve their skills in vocabulary (receptive), productive vocabulary learning, written spelling quality and getting quick results.

1.8. Limitations of the study

Restriction of this study was the limited number of participants in the English preparatory classes at Adana Science and Technology University. Therefore, this made us have a limited sample for carrying out the research. Because of this drawback, the results may not necessarily indicate a general picture, and be universally generalized.

The presence of both experimental and control group members in the same department was one of the external factors in our study. The connection between both groups and knowing this fact that the experimental group members are taking etymological and morphological vocabulary instruction in the class, for helping them to learn words, may have negatively affected control group members and vice versa this may have positively affected the experimental group members and caused them to feel themselves more important and unique than the other group members. And it may have affected the results of study in favour of the experimental group members. For ethical compensation of the shortage of the etymological and morphological vocabulary instruction for control group the handouts were shared with this group's participants at the end of the research study.

Questionnaires regarding social demographic background, placement test, three pre-tests, three post-test and an open-ended questionnaire were given in

order to gather more data about the participants. Collecting the data through various tools helped to interpret the results in more comprehensively but it was time-consuming and boring for some students.



CHAPTER II

REVIEW OF LITERATURE

2.1. Introduction

This chapter covers background information about the relevant literature as the skeleton of this research study. The first subheading, theoretical frameworks, including its subheadings; schema theory and meaningful learning are discussed. Then, memory system is explained with its subheadings covering explanations about sensory, working, long-term memory and its relevant subheadings. Later on vocabulary learning techniques with its subheadings, language and vocabulary learning strategies (VLS) with its subheadings as mnemonic, etymological, morphological affixational instruction are explained. Finally, review of literature related to receptive vocabulary learning, productive vocabulary learning and written spelling are presented.

2.2. Theoretical frameworks

The theoretical framework is the structure supporting a research theory of a study. Two theoretical frameworks that support our research study are as follows: Schema theory and meaningful learning.

2.2.1. Schema theory

Reading comprehension occurs after understanding the vocabulary in the context, and it is impossible to understand a text without vocabulary knowledge. There are a lot of recommendations, strategies and teaching methods proposed by teachers and researchers for vocabulary building which have their base in logician and cognitive approaches because learning process is mainly related to brain and memory.

Knowledge sources employed in lexical inference have been categorized by Haastrup (1991). He categorized them into contextual, intra-lingual and inter-lingual ones. The intra-lingual knowledge includes knowledge about the syntax of the target language and the target word orthography/ phonology, lexis, morphology, collocations, word class, and semantics. Inter-lingual knowledge includes the knowledge about the first language and other languages. Contextual knowledge could be attributed to the knowledge about the content of the text, i.e. co-text, and knowledge of the world. While holistic inferencing includes foreseeing in accordance with the context, i.e. relying on the knowledge of the world in terms of conceptual or schematic knowledge (p.124), analytical processing is the investigation of the linguistic elements of the target word. All knowledge about language is clustered in brain and the most important case of the noticed theory is schemata theory. Schema theory was proposed by Frederic Bartlett during working on constructive memory in 1932 (Psybox Ltd, 2002). He regarded schema as a part of top-down processing and declared schemas as structures of knowledge stored in the long-term memory (ibid). Moreover, Rumelhart (1980) has shown schemata as "building blocks of cognition" which are utilised in the process of understanding sensory data, in reacquiring data from memory, in handling goals and sub-goals, in allocating resources, and in leading the flow of the processing system. Widdowson (1983) has redefined schema theory from an applied linguistics view. He proposed two levels for language including a schematic and a systemic level. He explained that the first one relates to our background knowledge while the latter includes morphological, phonological and syntactic elements of language. Rumelhart asserted that if our schemata are uncompleted and do not offer an understanding of the incoming data from the text we will have trouble in understanding and processing the text (Psybox Ltd, 2002).

The schema is actively built and revised in case of facing new information by the learner in Schema Theory. Individuals have their own unique schemas that depend on their cognitive processes and experiences. Ausubel (1963; 1968) believed in a hierarchical grouping of knowledge wherein the learner generally adds new information to the existing hierarchy. Therefore, the meaning is as

effective as the structure of memory. Nevertheless, knowledge in this theory is not compulsorily kept hierarchically. On the contrary, it is based on meaning and possibly represented propositionally. Furthermore, the learner actively constructs these propositions' interconnections. For instance, in case it is required to remember a story which we were told, it would be possible to rebuild the meaning of the story while the exact sentences, or even the accurate order, are not often remembered. The story is, therefore, recalled through the active building of a meaningful image of the story in our memory.

Widmayer (n.d) expresses that many schema theorists postulate that instead of existing only one body of knowledge accessible to learners at any given time of advancement, there exists a chain of context-specific bodies of knowledge that is applied by learners to different situations. For example, in the case that a "thingamabob" is asked by someone, the listener requires a "hammering" schema so as to accurately figure out what is asked for. Situation-specific schema assists to differentiate between novice and expert interpretation of knowledge. Compared to novices who have no or insufficient schema to help them address or interpret new knowledge, experts who have the more complex advanced schema in a specific field may function better in any domain. Given the fact that the above-said schema is of context-specific nature, they depend on the experience of individuals with and their exposure to a subject area rather than easily "raw intelligence".

In schema theory, the salient process is top-down processing (deduction) which means starting from the abstract generalizations and concepts already stored in your mind and then, on the basis of these, interpreting and making sense of sensory input – so basically, what you are doing here is that you make use of prior knowledge, (Jenson, 2008). Generally, the term prior knowledge and background knowledge are interchangeably used. Biemans & Simons' (1996, p.6) believe that "background knowledge is all knowledge learners have when entering a learning environment that is potentially relevant for acquiring new knowledge." But for making the background and in fact for making schema and memorizing, we need that our brain finds the relations between what it learns, using manipulating or relating the given data with prior information and schema of the brain. On the other

hand, learner autonomy can be enriched through introducing learners to different VLS which can be utilised in improving the learning process. Students who are equipped with a various vocabulary strategies can decide on how exactly they prefer to deal with new unknown words. A good knowledge of the strategies and the ability to apply them in suitable situations might simplify the learning process of new vocabulary for students (Ruutemets, 2005, cited in Zolfagharkhani and Moghadam, 2011). This study reviewed general criticisms about schema theory:

Some researchers noted that *schema* is a term with no fixed definition, so vaguely and generally specified that each one of theorist has suggested a different formalization of its function, structure and features (Brewer & Treyens, 1981; Taylor & Crocker, 1981). Anderson, Spiro, and Anderson (1978, p. 439) observed that "until recently schema notions were hopelessly vague." and Brown (1979, p. 231) criticized it amusingly:

The defining features of *schema* theories are somewhat difficult to specify. The use of the terms *schema* is widespread, vague, and not always overladen with meaning. One of my favorite games is to remove the word *schema* from a paper written in schematese and look for changes in meaning. Take, for example, the sentence "preexisting knowledge schemata function to orient people to interpret a message in a certain way. "Where is the loss of clarity in removing the words *schemata*? It is somewhat surprising to find that there rarely is a loss of meaning following such ablation tactics.

And the other salient theoretical framework of this study is meaningful learning.

2.2.2. Meaningful learning

This research study's theoretical framework has its root in the Meaningful Learning Theory, too. Ausubel (1968) the U.S. cognitive psychologist, is the founder of the meaningful learning theory. He distinguishes learning from two

perspectives. In terms of way of learning, there are reception and discovery learning. Bruner (1967) argues that discovery learning is a constructivist learning theory that happens in problem-solving situations where the learners use their background knowledge to discover relationships and new facts to be learned. In terms of the relationship between learning materials and a learner's cognitive structure, there are meaningful learning and rote learning (Meiyun, 1999). He claims that learning is a meaningful process of relating new knowledge to existing cognitive concepts or propositions. Then, he continues that the meaning is a clearly articulated and exactly differentiated conscious action that emerges when potentially meaningful symbols, signs, propositions or concepts are related to and incorporated within an individual's cognitive structure on a substantive and non-arbitrary basis (Brown, 2002). Meaning is, therefore, a process of relating new material to relevant established entities in the learner's cognitive structure. Ausubel claims that factual information is learned more easily if it is organized and taught as logical systems rather than randomly or in isolation. This helps the learner to see the systematic organization of facts and makes it easier to learn the facts themselves (Cited in Xiaohui, 2005).

In other words, the mental mechanism of Ausubel's meaningful learning (Ausubel, 1963; 1968; 1978) is assimilation theory whose idea is that whether learners can acquire new knowledge mainly depends on the relevant existing concepts in their cognitive structures; meaningful learning takes place when the new knowledge interacts with the relevant concepts in their cognitive structure, and in this way new knowledge is assimilated into the pre-existing one held by the learners. Therefore Ausubel regards that the factors that affect meaningful learning are both internal and external, and in turn, he proposes the conditions for meaningful learning.

Cognitivists see learning as a mental process that involves memory, reflection, thinking, motivation, abstraction, and metacognition. Cognitivists look at learning as a mental and information processing, where the learner uses three different types of memory while learning, which are the sensory store, short-term memory and long-term memory respectively (Carroll, 2000). Sensations are

received via the senses into the sensory store before processing. The information preserves in the sensory store for less than one second. The duration in short-term memory is about 20 seconds, and if the data or information is not efficiently processed in short-term memory, it is not transferred to long-term memory for storage (Ally, 2013). The transferred data to long-term memory depends on the depth and quality of processing in short-term memory. The deeper the processing means the more associations and newly acquired information shapes in memory. Information which is transferred from short-term memory is assimilated and accommodated in long-term memory. During assimilation, the information is modified to fit into existing cognitive structures. Accommodation occurs when an existing cognitive structure is modified to unite the new information (Anderson, 2008).

In other words, cognitive psychology believes that information is stored in long-term memory in the shape of nodes which connect to form relationships. Meaningful input should occur during the process of teaching and learning the English vocabulary. This study reviewed general criticisms about meaningful learning theory as well:

Anderson, Spiro, Anderson (1978) assert that the Theory of Meaningful Verbal Learning (in particular, subsuming ideas or the nature of anchoring in cognitive structure) is "hopelessly vague" but Weil and Joyce (1978) had no difficulty in making his theory operational in explaining what teachers must do when they teach according to his theory.

Ausubel (1978; 1980), in his own defense, asserts that in addition to explaining concepts in general terms, he cannot be more specific along with a proper example, because the exact process is always contingent on the age of the learner, the degree of prior familiarity with the learning task, and the nature of the learning material. Besides, he reminds critics that an operational definition identifies just the general criteria of independent variables.

2.3. Memory System

As learning is a process that happens in mind, in this part of the study memory system of human being is reviewed. In terms of linguistic input, Tulving and Schacter and Tulving (1994) claim that memory could not be considered monolithic, i.e. unitary entity; they rather believe that memory is, in fact, a series of separate but interacting systems. They believe in three main criteria that might help recognize various memory systems. Class-inclusion operations are the first category in which it is claimed that an intact memory system makes individuals capable of carrying out a wide range of tasks that belong to a specific class or category while the specific informational contents of the tasks are not necessarily taken into accounts. Properties and relations are the second factor in which it is believed that one might define memory with regard to a property list or classification of its aspects and features of which one might be able to determine its identity and specify its relations to other systems. Convergent dissociations among performances of tasks is the last criteria in which it is believed that various systems play their roles in different ways in order to form a necessary condition to assume independent systems (p.1-17)

These criteria are needed for any useful classification. Schacter and Tulving (1994) pointed out to the memory systems and subsystems that were distinguished by them. Among other terms, their classification included five main human memory systems. The subsystems and the way they could be retrieved were among the factors to classify these systems. Mastin (2010) even offered a more simplistic explanation in this regard which is shown in Figure 2.

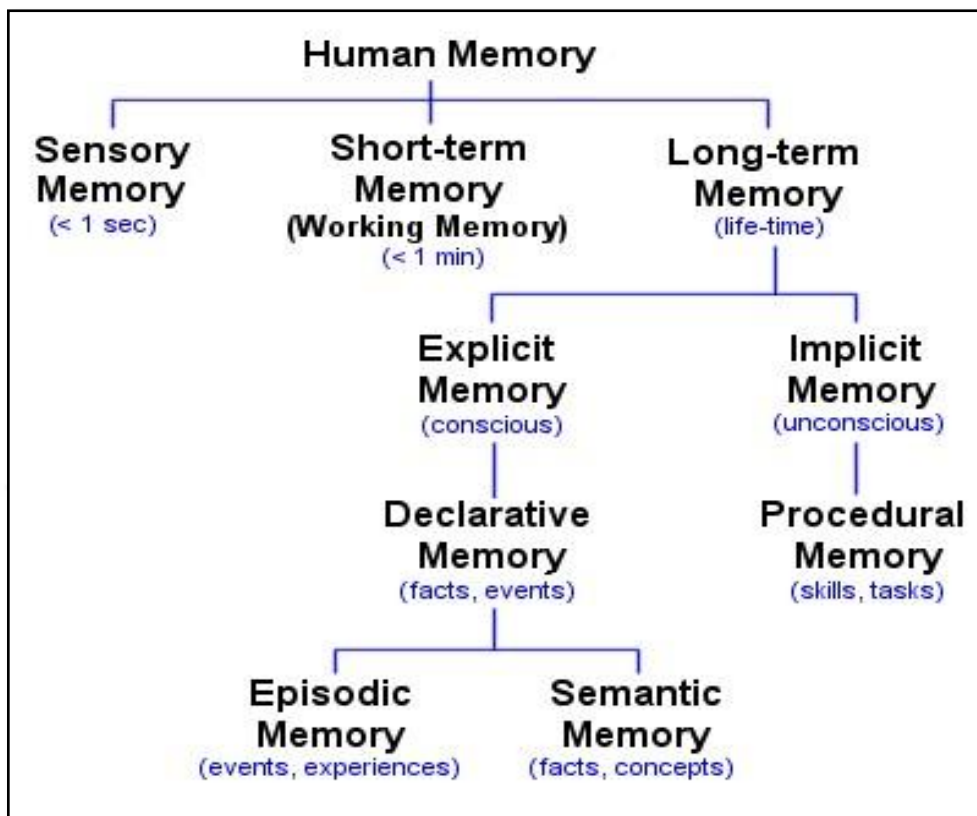


Figure 2. Human memory systems and subsystems (Mastin, 2010)

2.3.1. Sensory Memory

Human beings are equipped with five different senses namely sight, smell, taste, touch and hearing that could be generally considered unmediated collectors of information accessible in nature. Individuals are allowed by sensory Memory to keep feelings of sensory information subsequent to cessation of the original stimulus. It could be somehow considered a buffer for stimuli that come from five senses of hearing, sight, touch, smell and taste. Although they are kept accurately, they do not last long. For instance, the capability to glance at something just for a second and remember what it looked like could be regarded an exemplification of sensory memory (Coltheart, 1980).

2.3.2. Working Memory

It is a cognitive system with a restricted scope that is in charge of short-term retaining, processing and manipulation of information. It is regarded a process of paramount importance for logical thinking and an instruction for making decisions and behaving (Diamond, 2013).

2.3.3. Long-Term Memory

Many scholars including William James used to call it the secondary memory over the last decade of the 19th century (Hill, 2014). However, it did not bear the meaning that it was inferior to the primary memory. The process in which information is transferred from working memory (or short term-memory) to long-term memory through practice or other related equivalent ways has been considered gradual learning for a long time (Atkinson and Shiffrin, 1968, p. 27).

2.3.3.1. Implicit Memory

Squire, Knowlton, and Musen (1993, p. 471) claimed that depending on multiple brain systems, this kind of memory encompasses various forms of memory abilities and learning. The processes that do not always necessitate awareness include habits and skills, priming and conditioning, which “refers to an improved facility for detecting or identifying perceptual stimuli based on recent experience with them” (p. 478). Regarding various examples of such nature, it refers to non-declarative memory functions.

2.3.3.2. Explicit memory (or declarative memory)

Ullman (2004) defines explicit memory as the attentive, wilful recollection of factual information, past experiences, and concepts. The explicit memory could be classified into two main categories: the episodic memory that maintains certain personal experiences and semantic memory that keeps factual information (Tulving, 1972).

2.3.3.2.1. Episodic memory

It enables individuals to recall certain occurring which were experienced in the past. It makes it possible for a person to be attentively cognizant of an earlier “episode” (Hasselmo, 2012, p. 31) under a specific circumstance and at a specific time. Episodic memory is concerned about events to have taken place in particular locations at the specific time or it deals with “what”, “when” and “where” (Clayton & Dickinson 1998, Nyberg et al., 1996).

2.3.3.2.2. Semantic memory

It could be classified into declarative and explicit memory (our memory of happenings or facts that are maintained and retrieved explicitly) Squire, L (1992). It is the general world knowledge that one has collected through his or her life (McRae et al., 2013).

2.4. Vocabulary Learning Techniques

Vocabulary learning techniques are categorized as follows: decontextualizing, semi-contextualizing, fully contextualizing, and adaptable. Decontextualizing techniques omit the word from communicative context. Semi-contextualizing techniques permit to exist of some of the contexts. Fully contextualizing techniques demonstrated the new words in a semi-communicative context (Oxford & Crookall ,1990). In the following subheadings Oxford & Crookall (1990) explain vocabulary learning techniques.

2.4.1. Decontextualizing Techniques

Word lists, flashcards, and using conventional dictionary are the techniques that are the most common decontextualizing techniques which Oxford & Crookall (1990) explain as follows:

- **Word Lists**

Word lists are prevalent means for implanting vocabulary in students' memory, a technique which consists of no direct instruction by the teacher. The assumption behind this technique is that there is no necessity for context in order to learn vocabulary, and rote memorization is enough.

- **Flashcards**

Flashcards are known as popular materials among students for vocabulary self-testing. The flashcard involves at least 3 parts: Noting (copying) the L2 word on the front, writing the word's meaning on the back in students' first language, and then using it to become familiar with the new words and their meanings.

- **Dictionary Use**

Dictionary use is a decontextualizing technique "dictionary lookup". the underlying idea of this technique is that a reference book which includes the meanings of new words assists the learners to understand the meaning of a word which has no way of understanding its meaning, and that the physical action of searching or looking up the word assists them to remember the meanings.

2.4.2. Semi-Contextualizing Techniques

Semi-contextualizing techniques include words grouping, concept or word association, visual imagery, aural imagery, keyword, physical response, physical sensation, and semantic mapping which Oxford & Crookall (1990) explain as follows:

- **Word Grouping**

Word grouping technique consists of cutting a word list (longer) into a new, shorter one by categorizing or re-categorizing the target language words according to salient attributes. Word grouping constructs new sets or groups of words through using some common characteristic or theme. The theory that supports this

technique is that grouping words by lessening the number of discrete elements and connecting new word items with the learners' known concepts in their native language makes vocabulary learning easier.

- **Word or Concept Association**

Word and concept association or "elaboration", involves merging the new concept or words with the concepts or words already in the learner's schemata. The theory supports this idea that as long as there are meaningful associations, they will empower and strengthen the learners' existing schemata and simultaneously cause the new words become more accessible.

- **Visual Imagery**

The technique known as visual imagery is a beneficial semi-contextualizing help for second language vocabulary learning. Visual imagery is based on establishing associations between a picture and a word. The theory of this technique is based on this logician that most learners are able to associate new information to concepts with the help of meaningful visual images.

- **Aural Imagery**

Aural imagery administers a semi-context for the learner and a connection with what the learners already know. The theory of aural imagery is that aural imagery contributes to mere efficient verbal learning by associating new sounds with existing sounds in schemata. For instance, German *Katze* or Russian *kot*, with the familiar first language word, *cat*. Moreover, learners may use accent marks, rhymes or phonetic spelling to remember new words in the target language.

- **Keyword**

This technique is the result of a combination of two visual imagery and aural imagery. The main theory of this technique is that remembering a word in the target language can be easier by using visual and auditory links together and be tied strongly to existing schemata. For instance, to learn a new French word

potage (soup), the English individual merges it with a pot and later mentally imagines a pot full of *potage*.

- **Physical Response**

Physical response technique is a technique in which a new expression is physically acted out in the target language. The theory underlying the mentioned technique believes that language may be learned efficiently when words are connected through physical movement and actions, then activating their many and different portions of the brain and triggering the learner's schemata in many ways. In this technique, the teacher gives commands for example, go out, walk to the blackboard. And the students act them out, firstly without any production in the target language. Secondly, as students' proficiency improves, the commands become more elaborative: *Go to the pencil sharpener, sharpen the pencil and take the pencil ...* Main problem of this technique is that it does not manipulate abstract nouns very well.

- **Physical Sensation**

In this technique awareness of particular physical sensations (e.g., coolness / warm, roughness/smoothness) help people monitor or change their own physical or mental state. For example, learners train themselves to have a feeling of prickliness when imaging words demonstrating things they do not like (e.g., the second language equivalents of poverty, examination, fighting, deceit, punishment) and a feeling of calmness for enjoyable things (e.g., food, truth, , happiness, honesty, friend, and beauty). This technique can be used to memorize the gender of the target language words.

- **Semantic Mapping**

Semantic mapping may be known as a single technique but as a matter of fact, it covers three techniques: word association, word grouping, and visual imagery which is the most complicated technique of the semi-contextualizing

techniques. This technique consists making a visual arrangement of words in terms of their semantic attributes and relationships. The key concepts are centralized or highlighted and linked with subsidiary concepts and attributes by using arrows or lines showing relationships.

The theory which semantic mapping is based on might be that the map shows the ways in which new words fit into learners' schemata visually. Semantic mapping not only categorizes the words but also shows the conceptual paths or links among the words. Semantic mapping can be used to improve comprehension and retaining of second language words and be used as a diagnostic pre-reading activity.

2.4.3. Fully Contextualizing Techniques

Practicing all language skills including reading, speaking, listening, and writing can supply full context. The theory says that second language practice, especially naturalistic practice, equals to vocabulary learning. The most explicit occurrence of this theory happens in the reading contexts, but the assumption of this theory is implicit in discussions of the other three skills as well which Oxford & Crookall (1990) explain as follows:

- **Reading and Listening Practice**

Some theorists believe in this statement that practicing reading through students will absorb and cause them to learn vocabulary by osmosis (the process of gradual or unconscious assimilation of ideas, knowledge, etc), i.e., only by reading words in contexts without any specific training in vocabulary learning or reading. For example, Krashen (1988) claims that students' great deal of reading will automatically increase and improve their vocabulary.

Osmosis theories do not work better in listening as well as reading. Being able to recognize a new word or guess an unknown word's meaning in second language in a continuing and flow of speech does not imply that the second language learner has actually learned the word; usually, as in reading, an unknown

word is skipped over when the context includes enough clues for discovering the meaning of the entire sentence.

- **Speaking and Writing Practice**

Some second language teachers may feel that learning vocabulary effectively occurs by practicing it through writing or speaking. Doubtlessly, enough exposure to the new word in communicative, meaningful, written or oral contexts is very important, small group discussions, Simulation/gaming, project work, and some other communicative techniques supply motivating, naturalistic practice in writing and speaking (Jones, 1982; Crookall & Saunders, 1989; Saunders & Crookall, 1985; Crookall & Oxford, 1990: as cited in Oxford & Crookall, 1990).

2.4.4. Adaptable Technique: Structured Reviewing

As an adaptable technique, structured reviewing can be employed to strengthen any of the other second language vocabulary learning techniques, at any portion of the contextuality continuum including decontextualizing, semi-contextualizing, and fully contextualizing.

Structured reviewing provides a structured timetable for reviewing new words, it does not matter which technique is being used by the language learner. This technique goes back over second language vocabulary at different intervals, at first within short intervals and then increases intervals. For example, the learners practice words many times, then wait for 15 minutes before re-practicing, and practices them one hour, three hours later, the next day, two days later, the next week, and it continues until the words become automatic or over-learned for the second language learner.

2.5. Language and Vocabulary Learning Strategies

Language learning strategies (LLS) are known as processes of great salient in second or foreign language learning. These strategies are those tactics of the language learning process mostly depended on the learner and their personality

factors like; sex, age, culture and so on. Hatch & Brown (2000) state that vocabulary teaching strategies (VTS) refers to whatever teachers do to help learners learn the vocabulary of the target language, and Vocabulary learning strategies (VLS), as a sub-category of learning strategies are those strategies used by language learners. These strategies are important because the acquisition of vocabulary is an ever-lasting process and often poses unconquerable difficulties for language learners (Doczi, 2011, Oxford 1990).

In defining LLS, Cohen (1998) defines it as “learning processes which are consciously selected by the learner” (p.4) Strategies are defined as operations which the learners apply “to aid the acquisition, storage, retrieval, and use of information” (Oxford 1990, p.4). Moreover, she asserts that strategies are “specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations” (p. 8). Furthermore, she believes in benefits and the role of the learners in using second language strategies. She points to influence of many factors in using and applying strategies.

According to Oxford (1990), advanced students with more awareness about process of language learning apply better strategies. Older learners apply completely different strategies, and female students use more strategies than males. She believes in other factors like level of motivation, personality traits, nationality, age, task requirements, the purpose to learning the language, and teacher expectations might be effective on the selection of strategies.

By evolving psychology and education in the 1970s the world witnessed many creative and new ideas in language instruction. By gaining the power of social and cognitive approaches studies towards language learning also got popularity and learning strategies progressed (Schmitt, 1997, p. 3).

Relying on several reference and vocabulary textbooks Schmitt (1997) categorized strategies of language learning as below:

- Social strategy
- Interaction with other speakers to improve learning process.

- Memory strategy
- Relating new materials to the background or previous knowledge.
- Cognitive strategy
- Manipulation and transformation of the target language by the learner.
- Meta-cognitive strategy
- Awareness of learner about planning, monitoring and learning process evaluation.
- Determination strategy
- Applied strategies when they are confronted with new words without any additional help.

Another classification was proposed by Nation (1990, cited in Schmitt, 1997), who stated the employing of *discovery* strategies by language learners when encountering new words. As we mentioned before discovery learning is a constructivist learning theory that happens in problem-solving situations where the learners use their background knowledge to discover relationships and new facts to be learned (Bruner, 1967).

It should not be neglected that poor readers might become better readers with the help of teachers if they are made aware of employing compensatory strategies or “coping strategies” as Nation (1990) terms them. Many reading comprehension strategies have been proposed by Brown (2001). Having explained compensation strategies, he proposes a list of helpful techniques. First of all, he states that it is possible to help learners become accurate guessers by encouraging them to utilise effectual compensation strategies in which those guessers fill gaps in their competence by insightful endeavours to use whatever clues are available to them.

National Reading Panel (2000) discovered in its analysis of the research on vocabulary instruction that words should be instructed both directly (explicitly) and indirectly (implicitly). Directly means teaching particular words, such as pre-teaching vocabulary prior to reading a selection (Sedita, 2005). It is estimated that students can be taught explicitly about 400 words per year in school (Beck,

McKeown & Kucan, 2002, cited in Sedita, 2005). Another example of direct instruction covers the analysis of word roots and affixes (Cited in *ibid*, 2005). And students can learn words indirectly when they are engaged in communications and conversations with others, through independent reading, and read aloud. Students can learn words directly when teachers target particular words and promote word-learning strategies (Armbruster, et al., 2001).

Cruz (2010) explains that words learned through the process of seeing a word or reading it, hearing or conversation are indirectly learned but the words which occurs through meaningful and explicit instruction that goes from decoding words to understanding them and make sense of them in order to use in conversation or writing. So, etymological vocabulary learning is an indirect method of vocabulary learning strategy.

The aim of VLS is presenting and introducing the meaning and form of a lexicon, provoking learners to revise, practice and consolidate vocabulary via different tasks (Takac, 2008, p. 106). LLS are unconscious or conscious processes of which learners apply during learning a language (Richards and Schmitt, 2002, p. 515). Hansun and Padua (n.d, p. 11) cites that word learning strategies are the tools which can be used by students to figure out the meaning of unfamiliar words and increase their word knowledge. The following are effective word learning strategies which Hansun and Paunda categorize in their book:

- Identifying and using context clues
- Knowing how to use word-part information
- Accurately usage of a dictionary

In regard to other languages' vocabulary learning there is a research study conducted by Lawson and Hogben (1996) that turned their attention to VLS and observed language learning outcomes. In different qualitative research studies, they observed 15 Australian university students attempting to learn new words (Italian), by means of the think-aloud protocol and interviews, tried to discover what types of strategies learners used when they were given an explicit vocabulary

learning task and how often they employed these strategies and if there was any relevant success. Their findings emerged as follows:

- Learners regarded repetition for acquiring words deliberately;
- Learners did not pay attention to the grammatical or physical features of words, nor did they apply more complex procedures for acquisition;
- Learners used context to establish new words' meaning (approximately one third of the words), they were unsuccessful in retention of words meaning later, and much less frequently used strategies (e.g. mnemonic or keyword procedures) resulted in more efficient recall (Cited in Cruz, 2010.p, 141).

In regard to spelling, compared to children employing only one strategy, those who make use of multiple strategies namely visual storage, orthography, and phonological awareness reduce their spelling errors (Frith, 1980). Researched strategies are mostly dealing with VLS and importance of schema (Schmitt, 1997). Nation (1990) claims that the bounteous words which are of low-frequency nature could be learned through mastering coping strategies including guessing from the context. Hunt and Beglar (1998) believe in considering using the dictionary as the last priority to define a new vocabulary. They state that the meaning of the new word should be first guessed by students through analyzing its constituent parts (that are roots and affixes). Provided that the meanings of the pieces fit the word, it is then required to "try out" their guess in the context so as to figure out whether it makes sense. At the final stage, they may consult a dictionary in order to verify or dismiss the guess. And for a good guessing, we need to use our schema and background knowledge.

Nation (2001) believes that a lot of words could be learned with the help of strategies. He believes that: Most VLS can be applied to a vast range of vocabulary and are useful at all levels of vocabulary learning. They also let learners take more control over learning than teachers and concentrate on other things. Strategy use will cause to vocabulary expansion and more remembrance among second language learners. Lavoie (2016) studies the impact of explicit

teaching of three lexical strategies on that learners used when faced with unknown words and the results claimed the positive effect of strategies. O'Malley and Chamot (1990) revealed that instruction of second language learners to use learning strategies focuses chiefly on vocabulary learning strategy. They also argued that VLS are used most frequently and are probably the most famous type of LLS in comparison with other strategies.

Given the fact that vocabulary could be regarded as key factors of the learning process, learners of various language proficiency face situations where they merely comprehend a section of a sentence or written text since they are not familiar with all the words. Although the situation does not necessarily lead to failure of total understanding of the text, it may break down the understanding the number of unknown words or at least the essential ones is abound (Soria, 2001). Soria claims that contextual cues might help students fall back on their familiarity with the world and the co-text so as to infer the word. Over the pre-reading debates, it might be better to provide students with the necessary familiarity with and information about the subject matter of the texts.

In the following sections we will discuss some strategies that are used in vocabulary teaching and learning.

2.5.1. Mnemonic Instruction

Mnemonic is a memory-improving instructional strategy that teaches language learners to link new information taught to learners' background. The word *mnemonic* has a Greek root, *Mnemosyne* which means ancient goddess of memory and dates back to 500B.C (Yates, 1966).

Aitchison (2002) explains that human mind is like the London Underground System and tries to explain that information stored in the brain is interconnected in different ways. Mental lexicon of every individual is in connection through some weak or strong links. For transferring the vocabulary items from short term to long-term memory some elements in the mental lexicon attaches the new lexical items (Schmitt, 2000).

Solso (1995) claims that mnemonics are devices or techniques, either visual or verbal that intends to enhance and improve the storage and retention of new information. Instructors can relate new information to their information stored in the long-term memory by applying mnemonic strategy. For vocabulary learning, they may relate and connect the word to previously learned information, using some form of grouping or imagery (Mastropieri and Scruggs, 1991). Thompson (1987) claims the usefulness and effectiveness of using mnemonic in learning faster and recalling better. Levin (1993) believes that mnemonic devices are effective in all ages, especially, more useful for beginner students because of being involved in activities requiring them to recall and remember information.

Mehta (2014) explains that vocabulary is a set of abstract words which all of them are not tangible in nature. He continues that our brain is not able to memorize abstract information and we should convert it into brain language. This can be done with the help of encoding and linking the meaning of the word with the encoded word. This process is basically concerned with the photographic memory and bringing clarity in our visualization system. We need a great expertise to master. The link word of the given vocabulary is called Key-word. For making these key words there are some rules:

- Build your own keywords.
- Make a mental image of the keyword and the word to learn.
- Keyword and word should be linked with the mental image.
- Keywords should be visualizable and interactive.

Metha (2014) gives an example of the word *persuade* that means *to convince*. Then encodes the word persuade into *purse* (mnemonic). And then, *imagines a woman is being persuaded to buy a purse*.

2.5.2. Etymology and Etymological Instruction

English officially began after Germanic tribes reached the British Isles and brought their language there, in 449 (Gelderen, 2014). Map of Germanic migrations starting 1,500 years ago is shown in Figure 3. (Millward 1996.p.78, Cited in Gelderen, 2014, p.3)

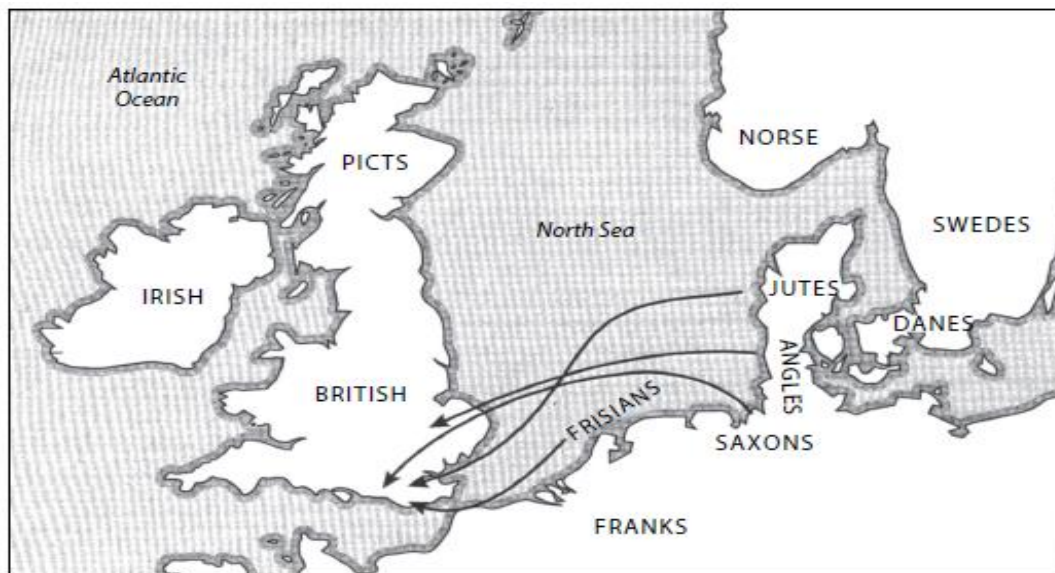


Figure 3. Map of Germanic migrations starting 1,500 years ago (from Millward 1996, Cited in Gelderen, 2014, p.3)

What began as a Germanic dialect spoken in a small district of England is a language spoken as a first or second language by more than a billion people all around the world now. Table 1, taken from (Roberts, 1965; Cited in Gelderen, 2014, p.4), indicates the origin of the 10,000 most common English words, and Table 1, taken from Williams (1975, p.67; Cited in Gelderen, 2014, p.4), indicates the origin of the first, second, and third thousand most frequent words and Table 2 below shows the first, second, and third 1,000 most frequent words and their origins (Gelderen, 2014, p.4).

Table 1

Percentages of English Word Origins

Old English	French	Latin	Other Germanic	Other
32	45	17	4	2

Table 2

The First, Second, and Third 1,000 Most Frequent Words and Their Origins

	Old English	French	Latin	Scandinavian	Other
1000	83	11	2	2	2
2000	34	46	11	2	7
3000	29	46	14	1	10

English is derived from the Anglo-Saxon, a dialect of West Germanic, although its current vocabulary comes from many languages, such as Greek, Latin, French, Spanish, etc. “The development of English undergoes three main periods, which are Old English (450-1100), Middle English (1100-1500) and Modern English Period (1500- present) respectively (Rongpei, 2002). And Figure 4 indicates the relationships between the major Germanic languages schematically (Durkin, 2009, p.9).

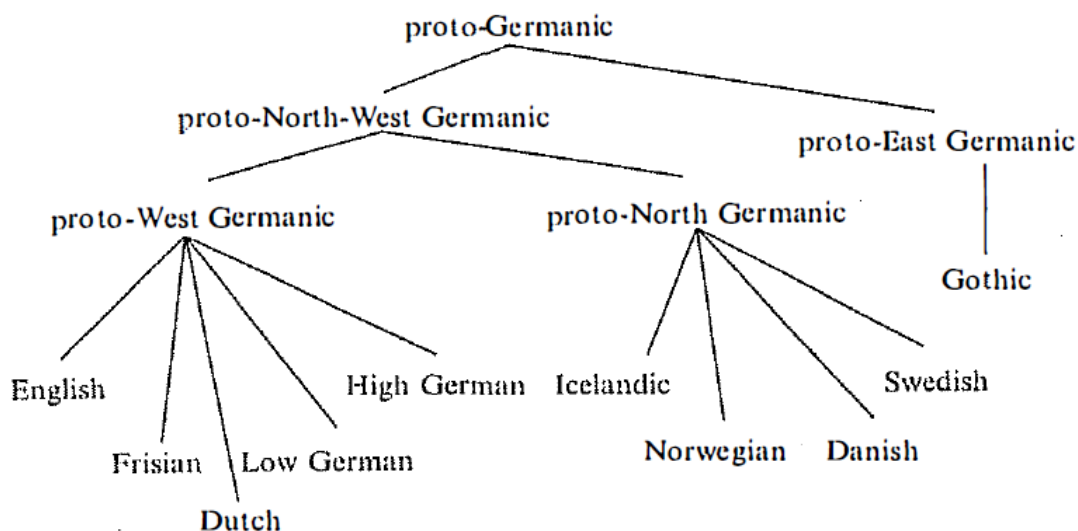


Figure 4. The major Germanic languages

The major Germanic languages are shown in Figure 4 above. English origin goes back to proto-Germanic language. The language as English we now refer to is outcome of the borrowings to some extents and it can be defined as the collection of words were chosen to appear in a particular dictionary(Gelderen, 2014).

Etymology studies the origin, historical development of words and the history of a linguistic form (as a word) by tracing its development since its earliest occurrence in the language, transmission from one language to another, analyzing its components and its cognates in other languages or its cognates to a common ancestral form in an old language and it is study of the morphology or affixation analysis of a language to separate roots (The New Oxford Dictionary of English, 1998). According to Webster's Online Dictionary, etymology is defined as follows: "Etymology is the study of the origins of words". The word etymology itself has a Greek origin "etymologia" ("etymos" means true meaning of a word, and "logos" means science). "Etymology is neither a separate discipline nor a part of evolutionary linguistics. It is only a special application of principles relating to synchronic and diachronic facts. It traces back the past history of words until it finds something that explains them" (Saussure, 1986, p. 187; Durkin, 2009).

Etymology is defined as the organized study of the birth, historical outlook, occasional changes in the implications and forms of words (Ross, 1962). Stockwell and Minkova (2001) declared that etymology could be helpful for students to enlarge their vocabulary size. Having knowledge regarding the origins of the words in the English language could be regarded valuable to those learning English as their second language; second-language instruction might benefit a lot from it as well. In addition, being informed about the historical outlook and changes in the forms of words in the English language might result in better understanding of the true spirit of learning English language and it may make the process more meaningful (Ausubel, Novak, & Hanesian, 1968). Etymology has been studied for quite a long time and as it could be assumed, plenty of reference works have been released to the date. With respect to the English language, “The Concise Oxford Dictionary of English Etymology (Hoad, 1993)” and “Chambers Dictionary of Etymology (Barnhart, 1999)” could be, for instance, regarded as good reference books.

This could be regarded the nature of languages to affect each other in case they have been in touch for a long time. Words might be used temporarily by a language while they are adopted by others to be used permanently. This process is called borrowing (it is not given back by the language; it is rather kept permanently). Moreover, these words become a component of that language (Javed et al., 2012). Having probed the history and background of words in English language, one may realize that it has been in touch with numerous other various languages including Old Norse, French, Latin, and Greek. A plenty of other colonial languages, where it was ruled by British for a long time, were in touch with the English language for centuries (Javed et al., 2012).

Various connections were found among Indo-European languages during the 19th century leading to significant insights that shaped the foundations of anthropology and linguistics. German “zehn”, Greek “deka”, English “ten”, Latin “decem” and Sanskrit “da’sa” are all, for instance, cognates which are the words that could be traced back to the same Proto-Indo-European ancestor. These words are pronounced differently in various communities owing to different phonological,

phonetic and other changes; it, therefore, led to the emergence of different languages in the aforementioned communities. Other typical ways including stages within the same language such as sound changes, e.g. Great Vowel Shift in English or spelling reform, that is more recent, might also result in the evolution of words. Language contact could be regarded as an important factor among other key contributing factors. Words are borrowed from other languages, English, for instance, borrowed the word “café” from its equivalent French word “café”. It is claimed that English has strangely borrowed loads of words including “Table”, “bottle”, “air” and “choice” from Romance languages, generally through Anglo-Norman. Although the Etymological Wordnet data is not capable of explicit differentiation of loanwords from etymological developments over a given period of time in a language or language family, it is somehow possible to distinguish such a difference relying on related background knowledge including the fact that Modern English has been, for instance, developed from Middle English and so on (Melo, 2011).

Tom S. Bellomo (1999) conducted a study employing etymology. Having recognized the fact that almost half of the English words are obtained from Latin-based ones and a plenty of others from Greek, the researcher, therefore, chose etymology as the word invasion strategy that principally focuses on Latin-based vocabulary. On the contrary, the colleagues opposed to the use of etymology and stated that compared to the students whose native languages were Latin-based, those whose native languages were not Latin-based might experience a disadvantage since the Latin-based students’ vocabulary might be close to the target affixes and roots. As a consequence, the experimental assumption was that etymology could be considered an efficient word attack strategy disregarding the students’ native language background (p. 2).

Serjeantson (1962) writes in her book that England has always welcomed the alien, and hundreds of words of non-English origin are part of English vocabulary indistinguishable from the native ones. More than sixty percent of English words have Latin origin while it is the case in more than ninety percent of the words with respect to technology and science domain (Green, 1990). While

containing 178 Anglo-Saxon roots, the English language consists of 280 more roots out of which almost all are Greek and Latin (Skeat, 1917). Henry (1993) claims provided that 2 Greek roots and 12 Latin ones along with 20 of the most common prefixes are used, one might be able to create approximately 100,000 words in English. Shipley (2001) claims that the most significant factor regarding borrowed words is the automatic move of these words over the contact span with other languages. It could be considered a natural event that those who use the English language get and adapt the words from other languages in an unconscious way when they are in contact with other people.

The extraction system was run on English Wiktionary 2013-09-07 version. The obtained lexical network contained over 3000,000 terms which were connected to 500,000 etymological origin links, 500,000 links for etymological relatedness, and 2,300,000 derivational/ compositional links between terms (Melo, 2011). In another study, Finkenstaedt et al. (1973), Williams (1986) concluded in a series of surveys that the origins of many modern English words could be traced back to different languages. The percentage of Greek, Germanic, French, Latin (containing words which are merely used in legal/scientific and medical domains) and others is 6%, 26%, 29%, 29% and 10% respectively. Skeat (1892) stated that the English language consists of 178 Anglo-Saxon root words and 280 others which are mainly borrowed from either Greek or Latin. Henry (1993) claimed that one may generate up to 100,000 words by 2 Greek and 12 Latin roots along with 20 other most commonly employed prefixes.

It is not hard to rationalize the reason behind familiarizing students having reading skills at about academic level with Latin etymology, i.e. definition of Latin forms existing in English words since one may find an abundance of Latin-based words in the said language. A word is called here Latin-derived or Latin-based if it consists of a Latin stem (Yamazaki, S., & Yamazaki, T. (2006).

Becoming aware of and regarding the investigation of word origins, synchronic word formation connections, compositional and derivational links, in particular, are of paramount importance since numerous words are coined through entirely routine processes of compound formation and affixation. It is, however,

worth noting that such words might emerge in a given language at a specific period of time, e.g. the emergence of the word “website”. The specific time at which such a word entered the language might be quite later than the period its components, i.e. web and site, emerged in that language (Melo, 2011).

Corson (1995) even goes further and states that processing of morphemic units and lexical organization changes as well due to language learning. He, however, does not explicitly state that all words formed of the same morpheme are kept together in the brain. He believes Latinate words which are learned along with their morphemic meanings could be recalled more easily and are more at hand for active use compared to the same words studied in the absence of extra stimulation that could be provided by their etymological definitions.

Corson’s claim has to deal with much contradictory evidence consequently. There exists, however, slight doubt in his conclusion that the more a word is stimulated, the more the likelihood would be that a learner remembers and uses that word. With regard to Corson’s claim, stimulation is, on the one hand, the way that a word meaning could be attained through morphology while it is, on the other hand, any further engagement that a learner experiences in spoken or written contexts (1995).

Regarding her latest consideration of errors and malapropisms by aphasics, Aitchison (2003) sums up that words are gathered in the brain in accordance with their similarities in rhythmic patterns, beginnings or endings. Provided that a word begins with a prefix, she states that the word is possibly kept in the brain along with other words which have the same prefix. Other scholars provide credible support for the presence of semantic groupings of words in the lexicon.

Etymology and its instruction can provide students with purposeful linguistic principles and information for the learners. Etymological knowledge of words causes to meaningful input, which can help language learners to remember and retrieve it in the process of acquiring (learning) and using English vocabulary (Sun, 2013). In other words, Meaningful learning that is sought by educational psychologists could be offered by etymology, i.e. investigation of the origin of words. This is a kind of learning associated with prior learning and could be more

generalized and maintained that makes it superior compared to the uncomplicated rote learning of vocabulary. Feasible explanations are provided about the way that etymology might become a part of a second-language program, which is learned through the writer's own experience (Pierson 1989).

2.5.3. Morphology and Morphological Instruction

“Morphology” has a Greek origin, *morph-* means ‘form or shape’ and *morphology* means the study of form. Morphology studies words, their internal structure, and their forms, which is investigated through the smallest linguistic elements called morphemes with a grammatical function (Aronoff & Fudeman, 2011).

Morphology is a system in which morphemes (affixes and bases) are combined to form words. Regarding the English language, all words are either bases or bases with one or more additional morphemes attached to them. The tool named orthographic word sum employs standard linguistic notation so as to show the constituent morphological elements existing in a given word: for instance, <un + help + ful > → < unhelpful >.

Morphemes could mainly fall into two categories of free and bound. While the former is dealt with as an independent word, the latter could be subdivided into two kinds namely inflectional and derivational. Linguists define an inflectional morpheme as a sheer grammatical marker or indicator. It is neither capable of creating or forming a new word nor can it impose an effect on the grammatical class of a word (Beard, 2001, Adeniyi et al., 2010,).

The three following roles might be played by an inflectional morpheme in English:

1. Indicating tense: tense is related to a verb. It means that to show tense, it has an effect on the verb.
Come, come +s, come +ing.
2. Indicating number-plurality
Boy +s: boys

3. Indicating comparison: in order to compare, one may use adjectives. Therefore, this role deals with adjectives. Adjectives are of two kinds of comparative (comparing two things) and superlative (comparing more than two things). For example, Fat + “er”: fatter; fat + “est”: fattest

Derivational bound morphemes, being called a derived morpheme as well, a derivational morpheme is considered a bound morpheme which is capable of creating or generating new words through forming new words or changing the class of a word.

The above-mentioned change in the class of a word, which is due to attachment of a derivational bound morpheme, is not limited to a specific class of words; it rather has an effect on all word classes. The lexical meaning of the base forms of the free morphemes is not, however, affected by this transformation. In other words, the lexical meanings of the base, core or free morpheme remain unaffected (Adeniyi et al., 2010).

Identification and examination of morphemes, which are generally explained as the tiniest linguistic fragment with a grammatical role, could be regarded among principal approaches that morphologists stick to in order to study words, their internal structure and the way they are formed. However, this identification does not incorporate all morphemes; it rather contains the usual ones and it could be considered a proper starting point. A morpheme might include a single word, e.g. hand, or a fragment of a word which bears a specific meaning, e.g. –ed of looked, which cannot be partitioned into smaller meaningful pieces. A pairing between meaning and sound could be considered another way of defining morphemes. It is deliberately decided not to apply this definition. As it will be discussed later, some morphemes do not have a continuous or concrete form while others may not bear specific meanings in the typical sense of the term. The base morpheme is called a stem to which another morphological part is stuck. A stem might fall into two categories of simple, i.e. including merely one piece, or complex, i.e. including more than one part. Therefore, it would be appropriate to deal with considering as a simple stem. Despite the fact that it historically contains more than one piece, the contemporary speakers may deal with it as an un-analyzable form. Consider might

be called the root as well. A root resembles a stem in terms of forming the essence of the word to which another part is attached; however, they are different since the former is merely attributed to morphologically simple units (Aronoff and Fudeman 2011). For instance, disagree could be regarded the stem of disagreement since it is the base to which –ment sticks while the root is agreed. Taking disagree into consideration; agree is both the root of the whole word and the stem to which dis- attaches. With respect to the word reconsideration, -ation and re- are both affixes; in other words, they attach to the stem. Prefixes are affixes such as re- which are placed before the stem while suffixes such as –ation are those that are placed after the stem (Aronoff and Fudeman 2011). Bowers and Cooke (2012) believe that Morphological Instruction could be understood both through morphology and etymology since learners not only are required to realize word change but also the word meaning. On the one hand, etymology provides them with a meaning and it establishes a link to word acquisition, cognates, and history.

Anglin (1993) explained that solving problem through morphology is a process for deciphering of unknown complex words' meaning in which learners use morphological analysis to break complex words into constitutive meaning elements named morphemes (bases, prefixes, and suffixes). By combining of the meaning of those morphemes they can provide cues to the meaning of previously unknown words. And in line with Anglin (1993), Nippold (2007) and White et al. (1989) described morphological analysis as the process by which a word components — the base (root) and any inflectional or derivational affixes—are analyzed to hypothesize the word meaning as a whole.

Importance of morphology in first language acquisition was studied as well. Anglin (1993) tested 96 grades 1, 3, and 5 children for their knowledge of a sample including 196 main entry words using an English dictionary to estimate vocabulary learning of students over years of schooling. He divided his sample equally by grade (each grade 32 children), gender, and their socioeconomic status. Based on the acquired data from this sample, he found that between age 1.5 and Grade 1, children learn, on average, 5.5 words per day and between Grades 1 and 3 about 12 words per day. Anglin found out that this increase was in agree with Carey's

(1978) estimate of 5 words over preschool years and Miller's (1977) estimate of 14.5 words per day between Grades 1 to 3. By analysis of the words nature during this period it was found that between 1.5 years and Grade 1, base (root) words growth rate was more than other periods, but "between grade 1 and grade 5, derived words were associated with the highest rate by a considerable margin" (Anglin, 1993, p.132). Clearly, children are successful independent word learners and morphology is the system through which meaning of words are structured in written and oral shape and it is a main feature central to learning of a language (Anglin, 1993; Carlisle, 2007; Carlisle & Fleming, 2003; Taft & Kougious, 2004).

Meaning units of words are morphemes and understanding the relationship between vocabulary knowledge and morphology is a paramount part of the literature on learning vocabulary in children school (Henry, 1989, Baumann et al., 2002; Nagy, 2005, Scott, 2005; Templeton, 2004). Wysocki and Jenkins (1987) studied the morphological awareness in children's vocabulary knowledge. They taught Grade 4, 6 and 8 students, complex words meanings (e.g., *gratuity*) and discovered a significant effect on the students' knowledge of untaught morphologically-related transfer words (e.g. *gratuitous*). During instruction they avoided addressing morphological structure, they tested the students after two weeks and resulted that students can benefit from inherent morphological structure of words as a foundation to build new words on it.

Henry (1989) gave experimental evidence that morphological instruction has a positive effect on improving word spelling and reading of English. Nagy and Anderson (1984) claimed that around 60% of the new words that students confront in texts could be worked out by using morphological structure and their use in sentences. Morphological Instruction might lead to the development of English language skills and vocabulary in particular (Coady, 1997 as cited in Tran, 2006). As we know skills in Learning are interrelated and learning one skill can affect the other skill, so giving such instruction may help the learners to be more sensitive to the morphemes and not only improve their reading skills but also their guessing and retention as well.

Baumann et al. (2003) in their morphological instruction study concentrated on 15 prefixes and 5 suffixes and usage of these word parts' meaning in conjunction with root words to learn the meaning of new words. Students who were morphologically instructed were more skillful at inferring and understanding the meaning of morphologically decipherable words on a delayed test in comparison with the control group. Besides, Pressley et al. (2007, p 214) reported that teaching morphemes improves adults' and children's ability to infer the words meanings. Graves and Hammond (1980) in a research study taught Grade seven students the meaning of prefixes in the context of one set of vocabulary words and they managed to generalize the given knowledge to new words.

Morphological awareness is the conscious ability to reflect on and to change morphemes in words (Carlisle, 1995; McBride et al., 2005). There is plenty of data on the way that morphological awareness helps develop early literacy and skills. The spelling and reading skills of children going to elementary school and the way literacy skills are related to or predicted by morphological awareness have been studied by many researchers (e.g., Apel & Thomas-Tate, 2009; Nunes, Bryant & Bindman, 2006) and the results of the study shows the positive effect of morphological awareness. Applying the knowledge of affixes and roots, morphological instruction (MI) paves the way for learners to detect the meanings of unknown, morphologically complex words. All over the early elementary grades to the college years, the English morphological instruction aims to improve the knowledge of high-level vocabulary (Carlo, August, McLaughlin, Snow, Dressler, Lippman, Lively, & White, 2004).

English is called a morphophonemic language because of the interrelationship of its morphology and phonology (Venezky, 1999). Pronunciation of morphemes changes across English words. For example, the pronunciation of the base *do* in its inflections *does* and *done* or *sign* in derivations such as *signal* and *design*. Carlisle (2003) revealed that familiar word morphemes can make faster language learning compared to separately learning each complex word. This, however, can only happen when students identify word parts (morphemes) within complex words. Carlisle (2000) in a study with third and fifth-grade students

discovered that learners are less capable of recognizing morphological cues in *shift words* that have modified in spelling or pronunciation because of suffixing patterns in related forms.

2.5.3.1. Word Formation Processes

Burton et al. (2012) in their book explain that a human being as a native speaker approximately absorbs 2 words every hour, 12 words every day, 84 words weekly before school and when he/she starts school that person would have 13000 words in his memory. At high school it reaches to 6000 to 120000. He believes that ability to learn and memorize such a large vocabulary of human being reflects a combination of different skills which is unique to human being. He explains that human being uses efficient rules for word-formation. Burton et al. (2012) explain that languages use two techniques for word extension: Concatenation and non-concatenation.

Concatenation is the brick-and-mortar approach in which affix is added to a root. English often uses this technique in five ways:

- *Prefixing* before the root attaches a bound morpheme. Examples: **dis**respect, **re**cover.
- *Suffixing* after the root attaches a bound morpheme. Examples: teacher**er**, judgment**ment**.
- *Infixing* attaches a bound morpheme inside the root (is not common in English). Examples: saxo-**ma**-phone, mother-**in**-law.
- *Circumfixing* a bound morpheme wraps around the root. Example: **a**-flying**ing**.
- *Compounding* by adding another root which extends the roots. Examples: blackbird, bluebird.

Non-concatenation technique weaves the extension into the roots. This technique is not used in English. For example in Arabic the k-t-b root changes to **katab** or **kitab**.

Algeo (1980), Stockwell and Minkova (2001) concluded that the words are generated through various processes and methods. The association between meaning and sound and their changes by the passage of time call attention to the reconstruction. They listed the most significant processes of word-formation as it follows:

- **Borrowing**

There are thousands of words that languages borrow from each other. Today, the English language uses plenty of words which have a foreign origin such as 'volcano' from Italian, 'amigo' from Spanish, 'yogurt' from Turkish etc.

- **Shortening or Clipping**

That is a process in which an appropriate part of a current word is removed. For example, exam (ination), math (ematics), and lab (oratory).

- **Functional Shift (Conversion)**

In this process, an existing formation or word is used with another grammatical function. For example, from noun to verb (position in positioning people) and from verb to noun (run in go for a run).

- **Back-formation**

It happens when an actual or assumed affix is omitted from a word to coin a new one for instance, 'cherry' from Cherise (with French origin) and the noun 'resurrection' was borrowed from Latin, and 'resurrect' as a verb was then back-formed hundreds of years later from it by omitting the suffix (ion).

- **Blending**

At times, two or more than two words are blended to create new ones (for instance, 'brunch' from breakfast and lunch).

- **Acronyms Formation**

It is creating words by acronyms (for example, RADAR that is radio detecting and ranging).

- **Transfer of Personal or Place Names (eponym)**

Over the time, the names of things, places or people are changed into generalized words (for instance, 'forsythia' was created from a botanist's name William Forsyth).

- **Imitation of Sounds**

Onomatopoeia might also create words. It means to name a thing by the recreation of the sound. Words such as 'guffaw', 'hiss', and 'buzz' have imitative origins.

- **Folk Etymology**

A word is changed and brought together again partially to the word from which it stems. For instance, the Latin word 'febrifuge' (a plant which has medicinal features that are 'fever explore' etymologically) was adjusted to English as 'feverfew'.

- **Combining Word Elements (Compounding)**

In this process, the need is felt to create a new idea or word by means of significant storage of suffixes and prefixes that are already present in English (For instance, plenty of ideas and words might be developed by means of "ism". According to Plag (2002), a word which is created from two or more simple or

complex words (such as, window cleaner, and landlord) is called a compound word. Putting together two or more individual words as one word not a loose combination of two words to create a new one is called compounding process (that is occasionally named composition).

- **Coinage**

Another word formation processes which is mentioned in literature is “coinage”. Algeo (1980), Stockwell and Minkova (2001), Yule (2010) explains the term coinage as one of the least common processes in which typical sources are invented trade names for some products that become general terms such as aspirin, nylon and zipper.

2.5.3.2. Affixation and Affixational Instruction

The many of English words has been created via morphological elements combinations such as affixes—prefixes and suffixes with word roots, which are called lexical and derivational morphemes. If a learner be aware of how this combinatorial process acts, they acquire one of the most powerful understandings for growth of vocabulary (Anderson & Freebody, 1981; Pikulski & Templeton, 2004).

Importance of affixation in first language acquisition is studied by some researchers. According to the principle of *semantic transparency*, Slobin’s (1973) operational devices, “known elements with one-to-one matches of meanings to forms are more transparent for constructing and interpreting new words than elements with one-many or many-one matches” (Clark & Berman, 1984, p. 547). In other words, it means that children prefer elements that have single and known meanings to them because of the connection between old and new meanings. For example, speakers who know the meanings of two words separately as *dog* and *house*, the new word *dog-house* is more transparent and clear in meaning for them than the word *kennel* because *kennel* does not demonstrate its connection to *dog*

like the word dog-house which indicates the relationships clearly (Clark & Hecht, 1982).

Bellomo (2009) explains that falling to pieces morphologically complex words into their forming morphemes (that is the word meaning parts) is called the structural or morphological analysis. For example, the word worker includes two meaning units, the base work and the attachment of –er, that bears the meaning of an agent (thing or person) that does what is mentioned in the base and believes that students might benefit from learning morphologically complex words at the college preparatory level together with a functioning knowledge of morphemes that makes them ready for college readings.

Fotokian and Rahmatipas and (2015) discovered the positive effect of teaching affixation on learners' vocabulary knowledge. Adeniyi et al. (2010) argue that affixation is a morphological process in which an element that is often named affix is attached to the base or root of a word. For instance, “courage” could be regarded the root of a word; provided that “-en” is attached to it, the word “encourage” emerges while the addition of –ment creates a new word that is “encouragement”. Both –ment and –en are affixes. However, the former is a suffix while the latter is considered a prefix.

Brown (2001) believes that language-based clues are comprised of textual structure, word associations, and word analysis while the non-linguistic ones may involve identification of situation, context and other schemata. He also claims that in case the words are analyzed by learners in terms of what they already know about them, it would be possible for them to “make guessing pay off when they do not immediately recognize a word”. The above-said helpful techniques are as follows (p. 310):

- a) Seek prefixes (co-, inter-, un-, etc.) which may lead to clues.
- b) Seek suffixes (-tion, -tive, -ally, etc.) which may reveal what part of speech it is.
- c) Seek roots that are known
- d) Seek grammatical contexts that may notify information.
- e) Seek semantic context (topics) for hints.

A section has been devoted to Using Prefixes, Roots, and Suffixes (pp. 168-176) by Nation (1990) in his book, *Teaching and Learning Vocabulary*. He explains in case these word parts are learned, it may help the learning of unknown words and it “can be used as a way of checking whether an unfamiliar word has been successfully guessed from context” (p. 168). Nation (p.169) gives a list of examples on the practicality of learning these word parts.

Circumfixes and infixes could be regarded two other types of affixes that one may face. They both defy the notion of the morpheme. Infixes are segmental strings which are not placed before or after a stem; they rather attach to a place in the middle. Circumfixes are attributed to those affixes which come in two pieces. One piece sticks to the front of a word while the other part attaches to the back. However, these affixes are open to question since one may treat them as affixes which include a suffix and a prefix that attach to a stem at the same time (Aronoff and Fudeman, 2011). As an example in English, **a-fly~~ing~~** is a circumfix sample which wraps a bound morpheme around the root (Burton et al., 2012, p.79).

2.6. Receptive and Productive Vocabulary Learning

Regarding researches done in the realm of second language acquisition, grammar was the focal point up to 1980s. Müller (2010, p. 351) believes in the positive and vital role of learning vocabulary in learning grammar. Focus on grammar has been replaced by vocabulary in the last three decades. Vocabulary has turned into the focal point of many theories including Lexical Learning Hypothesis that claims “vocabulary knowledge is indispensable to acquire grammar” (Malvern et al., 2008, p. 270). There is still neither a simple nor a unanimous answer to the question “What does it mean to know a word?”. Relying on their experience, many learners of foreign languages, however, believe that the answer would be the capability to perceive a word in its written and spoken form and its meaning, as well (Nation 2010.p, 47).

The capability of understanding a word when it is seen or heard is called receptive vocabulary knowledge. The first level of English *receptive* vocabulary

learning is a base for the next higher level called *productive* in the process of first and second language acquisition. In case one person is capable of producing a word when writing or speaking, it could be said that he or she has productive knowledge. It is usually supposed that words are first understood receptively and then merely subsequent to wilful or incidental learning become accessible for productive use. Therefore, the knowledge about vocabulary should be considered like a continuum on which words change their status from receptive to productive. Despite, it is assumed that compared to learners' productive vocabulary size, their receptive vocabulary size is much bigger (Zhou, 2010, Schmitt, 2010).

Laufer & Goldstein (2004) categorized measurement of learners' vocabulary knowledge into four types as receptive recall and recognition and productive recall and recognition. Recall is often measured by producing a word in a sentence with a required blank or producing a target word with a given meaning, while recognition is measured by asking the learner to choose a target word from list words.

The vocabulary level and its size in receptive and productive vocabulary knowledge is another paramount factor of the ability of second language learners in listening, reading, writing and speaking. By increasing text coverage of known words from 72% at the 1,000 word vocabulary level to 97.8% at the 15,851 word level, second language learners will have more words in their receptive and productive vocabulary size as their English vocabulary level goes up (Francis & H. Kucera, 1982). Schmitt (2008) believes that for reading required vocabulary word families are 8,000 – 9,000, and for oral discourse 5,000 – 7,000 are needed but writing tasks require a larger productive vocabulary size than speaking tasks (Nation, 2006). Both ESL and EFL learners lean to have more receptive than productive language knowledge (Laufer & Paribakht, 1998).

Laufer and Paribakht (1998) and Melka (1997) found different ratios of receptive and productive vocabulary in EFL learners' vocabulary knowledge but found that learners' receptive vocabulary size is larger than productive vocabulary. A larger receptive vocabulary shows more productive vocabulary size and just knowing a word receptively will not function as a silver bullet in reading, speaking, listening and writing for EFL learners (Webb, 2008). Webb (2009) states that

productive learning is vastly linked into “both receptive and productive knowledge of orthography,... syntax, meaning, and grammatical functions” (p. 360).

The main difference between passive (receptive) vocabulary and active (productive) one is a predominant idea that is generally taken for granted in elementary books about the acquisition of vocabulary. With respect to instructional texts, it serves to teach words. For instance, some writers even proceed so far to make a list of vocabulary items that could be learned productively and a list of those that could be learned for recognition purposes. However, many scholars have merely discussed this topic theoretically (Corson, 1983, 1995; Laufer, 1998; Melka Teichroew, 1982).

Laufer et al. (2004) concluded that word knowledge includes more than the mere relationship between *form* and *meaning*; they claimed that it is rather multifaceted. Apart from meaning and form, researchers believe in a further difference between productive (active) and receptive (passive) knowledge as a process, for example, Nation believes that word knowledge involves knowledge of meaning, form and use. He proceeds to categorize them into three further subcategories. The knowledge of form, for instance, is further classified into written, spoken and word parts and categorized productive and receptive knowledge into nine subcategories so that the form/ spoken/ receptive category deals with the question “What does the word sound like?” and the form/spoken/productive category answer the question “How is a word pronounced?” (Nation 2001, p. 17).

Moreover, Henriksen (1999) classifies lexical knowledge into shallow to deep knowledge, partial to precise knowledge and receptive to productive knowledge. The three-dimensional definition of lexical knowledge proposed by her built a bridge between Meara’s (1996) two-dimensional lexical categorization (organization and size) and a lexical knowledge description. She made an effort to form an amalgamated structure of lexical knowledge that could be recognized collectively.

Automaticity or fluency is another component of word knowledge proposed by Laufer & Goldstein (2004, p.401). Schmitt (2010) defines fluency as the

sufficient recognition/ comprehension speed in terms of listening or reading and the sufficient retrieval/ production speed in terms of writing or speaking.

There is another point of discrepancy among researchers with regard to the productive and receptive notion that there is “no consensus as to whether this distinction is dichotomous or whether it constitutes a continuum” (Laufer & Goldstein 2004, p. 405). Some researchers including Melka Teichroew (1982) place productive and receptive knowledge on a continuum. In this sense, as the learner know more about the lexical items, receptive knowledge moderately advances towards productive mastery (Faerch et al., 1984), and (Palmberg ,1987).

Meara (1997), however, claims that two different kinds of knowledge illustrate two different kinds of associational knowledge; they cannot be, therefore, placed on a continuum. He suggests lexical organization in which words that are known to be productively used are associated with a productive item while words that are known receptively are not associated with any words in the lexicon.

2.7. Written Spelling

Variable spellings are common In Old and especially in Middle English. After 1500, the first English word lists and dictionaries start appearing, but the English spelling system remains irregular and its main reason is that changes happened in the spoken language but were not reflected in the written spelling because the spelling had been standardized by that time. In addition, over time English borrowed many words from other languages. Therefore, English spelling does not represent the way the language sounds (Gelderen, 2014).

George Bernard Shaw, the Irish writer, said that fish could be spelled ghoti. The **gh** could sound like the last sound in enough, the **o** like the first vowel in women, and the **ti** like the middle part of nation. Shaw considered the English spelling system inadequate which needs reform. A quote from the Preface to Shaw’s *Pygmalion* shows his views on English spelling:

“The English have no respect for their language, and will not teach their children to speak it. They cannot spell it because they had nothing to spell it with but an old foreign alphabet of which only the consonants – and not all of them – have any agreed speech value. Consequently, no man can teach himself what it should sound like from reading it” (ibid ,p.15).

When Shaw passed away in 1950, he left money in order to devise a new writing system for English. Such an alphabet was really invented and a book published using it but it never caught on (ibid, p.15).

The vowels in bold show examples of irregular spellings.

1. [i], **see**, **people**, **seize**, **seas**.
2. [u]. **to**, **too**, **two**.

Sometimes the opposite occurs: what is spelled the same sounds different. e.g. **tough**, **previous**, **ought**, **through**, **dough**, and **out** (ibid, p.16).

In response to this question “Why English spelling is irregular?” Gelderen (2014) explains that the English spelling system borrowed a lot of words from many other languages and was used for many varieties of spoken English. As a result, the symbols do not represent the sounds accurately. Unlike in Modern German and Dutch, for example, there has never been a reform in spelling in English, as well.

A true connection and understanding of the connections between phonology as related to grammar, spelling, etymology, and morphology will give students with connection within and the wholeness of their second language (Rothstein & Rothstein, 2009). Rothstein & Rothstein (2009) claims that written spelling is one of the most important skills of learners and it is one of the difficult parts of language learning because orthography of English language differs from its oral spelling. In case a proper understanding and a strong relationship between phonology and grammar, spelling, etymology, and morphology are found, students could be provided with a connection within and a wholeness of their second language. By realizing and elaborating on the complex nature of spelling, students might be

provided with historic information and it is also possible to assist them to recall the “rules” regarding what seems to be “inconsistent spelling” (ibid, p. 194).

English spelling and its orthography had a great deal of importance for researchers. The Stanford University Spelling Project was launched in 1966 so as to confirm the indispensable nature of the English orthography. Hanna, Hodges and Rudolf carried out a study on patterns of spelling by means of computer technology. Relying on a program designed based on the correspondence of phoneme-morpheme, the computer managed to spell almost half of the words accurately (Hanna et al., 1966, p.58). Hutcheon et al. (2012) studied whether an approach aiming to develop word lists based on etymological roots boost the spelling performance with respect to older primary school students. The results represented an improvement in spelling regarding girls but not boys.

Understanding English orthography would be useful in the evaluation of methods dealing with teaching spellings. English orthography could be regarded fairly regular in case the position of a sequence letter with respect to the part of speech, the word boundary, the stressed or unstressed syllable and the etymological origin of the word is taken into account (Kreidler, 1971). A word with correct spelling might be produced through applying three codes: phonological (the way sounds are coded in the spoken words), orthographic (the way letters are coded in written words) and morphological (word parts capable of modifying the meaning at the beginning of a word or indicating number, tense or part of speech at its end). Despite the fact that morphological and orthographic rules of spelling might be articulated sometimes (‘i before e’ for instance), they are rather mainly learned implicitly by repeated exposure (Pacton et al., 2001). A research study has revealed that programs teaching morphological spelling rules might lead to the improvement of spelling performance (Post & Carreker, 2002).

CHAPTER III

METHODOLOGY

3.1. Introduction

In this chapter, general design of the study, variables, participants and its subheadings, data collection tools and procedure including given questionnaire, MTELP, receptive vocabulary knowledge test, productive vocabulary knowledge test and written spelling test with their subheadings, open-ended questionnaire, teacher observation and interview of the control group, experimental group's instructional procedure, sample handout and finally the data analysis are presented.

3.2. General Design

This study was conducted in order to evaluate the effect of etymological and morphological vocabulary instruction on receptive/productive vocabulary learning and written spelling of English language learners after an etymological and morphological vocabulary instruction (treatment). In this study, explanatory sequential mixed-method research design was used for data collection. The purpose of explanatory sequential design is to use qualitative approach in order to clarify quantitative results. This research design allows researchers to evaluate and make high quality and accurate results (Creswell, 2011).

As shown in Figure 5 below, explanatory sequential mixed-method research design is a procedure for collecting, analyzing, and mixing both quantitative and qualitative research method in a study. When quantitative and qualitative data are mixed together it provides a better understanding and interpretation of the results (ibid).

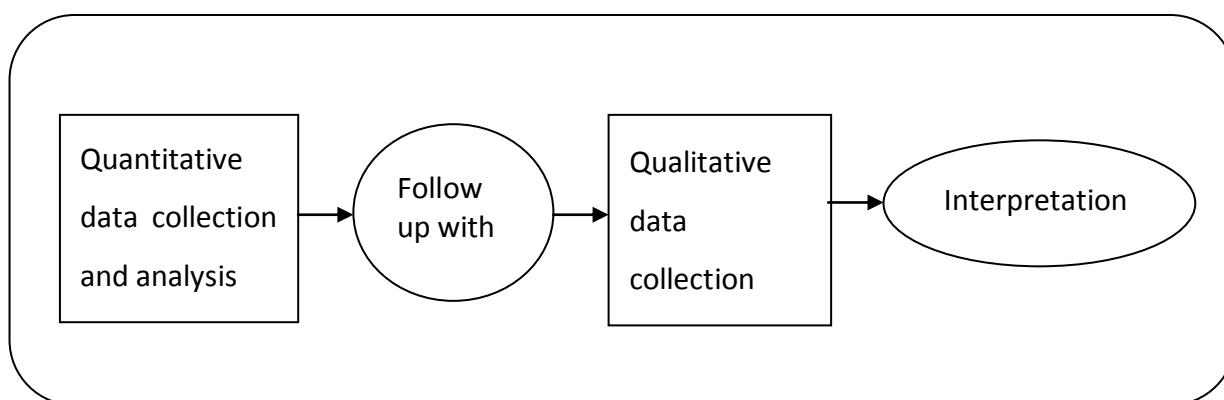


Figure 5. Explanatory sequential design (diagram)

According to Miles and Huberman (1994), qualitative and quantitative paradigms do not have to be dichotomies, they could also be supporters of each other and they could be used together to reinforce research findings. The quantitative data gathered through 3 pre/post-tests and qualitative data was gathered through an open-ended questionnaire. The participants were in B1 level of their language school program (according to Common European Framework of Reference) students learning English as a foreign language. And these students were being prepared for their field of study in which the medium of the instruction would be in English. They were given a questionnaire (Appendix 1) to gather some demographic information about participants' social status, one placement test (MTELP), and 3 pre-tests at the beginning of study. They were divided into two groups, namely the control and experimental group. The latter group received etymological and morphological vocabulary instruction by the researcher, while the former group did not and continued their conventional school instruction. The same 3 pre-tests (Appendix 2) were administered again at the end of the semester to both groups' members as the post-tests and the results were analyzed.

The pre/post-test results of the treatment group were compared with pre/post-tests of control group members who did not receive etymological and morphological vocabulary instruction. Moreover, for verifying the assessment of the statistical data obtained by means of the pre- / post-tests, at the end of the

treatment the researcher gave one open-ended questionnaire with two questions for treatment group members (Appendix 5). The quantitative data were compared and contrasted with the results of the qualitative analysis and participants' views were categorized. Figure 6 demonstrates variables of the research study and procedure of instruction.

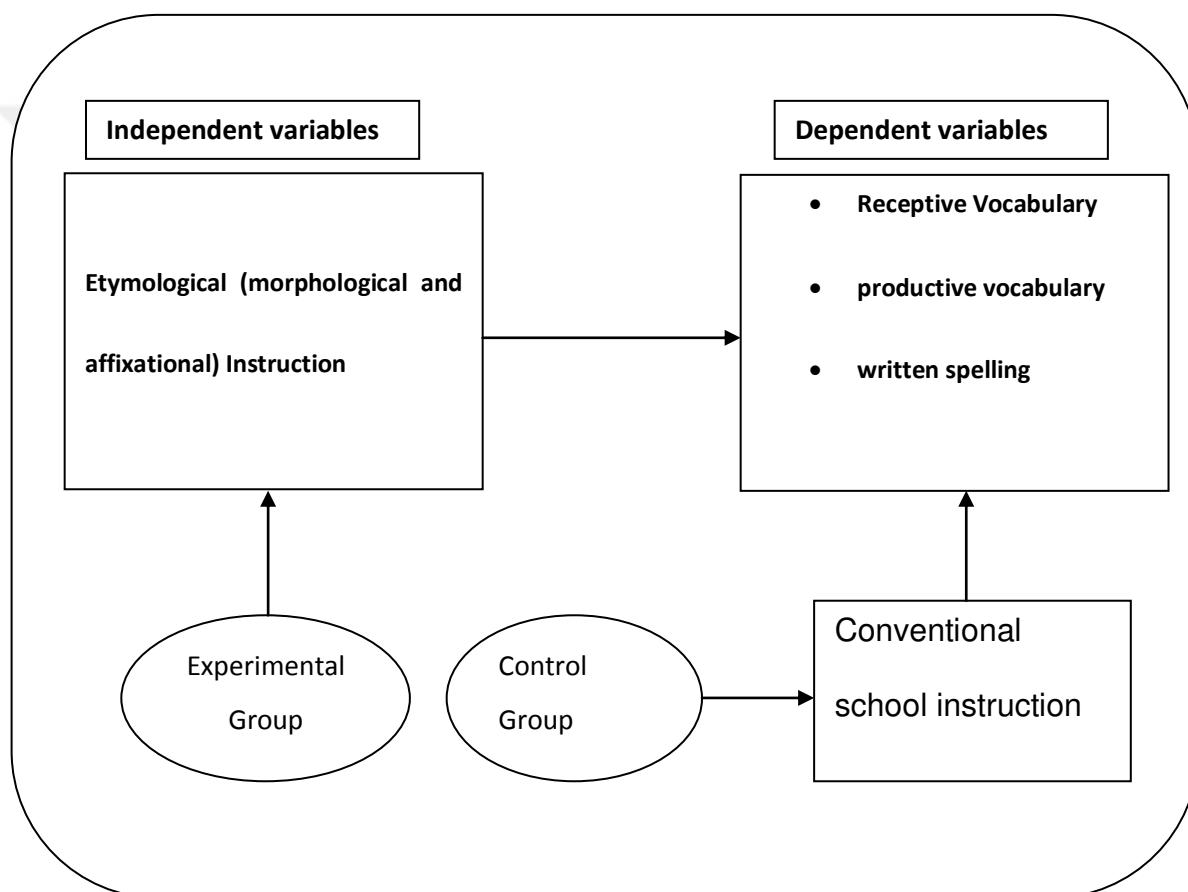


Figure 6. Variables of the research study and procedure of instruction

3.3. Variables

The dependent variables of this research study are receptive vocabulary knowledge, productive vocabulary knowledge and written spelling. The independent variable is etymological and morphological vocabulary instruction.

3.4. Participants

The participants of this study were 48 male and female students. All participants were from the School of Foreign Languages, Adana Science and Technology University, Adana City, Turkey. They were being prepared for their field of study at university where the medium of instruction was English. Participants were randomly selected and assigned to an experimental group (24 members) and a control group (24 members). Both groups had 14 male and 10 female participants as shown in Table 1. Both groups took the same pre-test (Appendix 2) and after 60 days of etymological and morphological vocabulary instruction we gave the same pre-tests (Appendix 2) as the post-test again. Only the experimental group received etymological vocabulary instruction.

3.4.1. Gender Distribution of Participants

Gender distribution of the control and experimental group is shown in Tables 3 as follows:

Table 3

Gender Distribution of the Experimental and Control Group

	Experimental Group		Control Group	
	N	%	N	%
Female	10	41.66	10	41.66
Male	14	58.33	14	58.33
Total	24	100	24	100

Table 3 shows the gender balance between the experimental and control groups' members. The numbers of female and male participant in both groups are 10 and 14 respectively.

3.4.2. The Experimental and Control Group Participants' Parental Social Class Status

Some information about the social status of the experimental and control groups' participants, including their mothers and father's job and education, was gathered using a questionnaire (Appendix 1) and the gathered data are shown in 4 Tables separately. Table 4 demonstrates the experimental and control group members' father occupational status.

Table 4

Fathers' Occupational Status of the Experimental and Control Group Members

Father job	Experimental Group		Control Group	
	F	%	F	%
Civil servant	9	37.5	4	16.6
Worker	6	25	8	33.4
Self-employed	4	16.6	5	20.83
Retired	3	12.5	2	8.4
Not specified	2	8.4	5	20.83
Total	24	100	24	100

According to the Table 4, by means of chi-square test, any difference between the experimental and control groups' father-job was tested and the results are shown in Table 5 below.

Table 5

Fathers' Job of the Experimental and Control Groups' Members

Groups	n	Civil-servant	worker	Self-employed	retired	Chi-square	P
Experimental	22	9	6	4	3	2.313	.51
Control	19	4	8	5	2		
Total	41	13	14	9	5		

For determining any significant difference between fathers' occupation of the experimental and control group members chi-square test was applied and results showed that [chi-square= 2.313, $p > 0.05$] there was no statistically significant difference between the groups in terms of their fathers' job.

The same procedure was employed for comparing mothers' job of the experimental and control group participants. The mothers' occupational status of the experimental and control group members are demonstrated in Table 6 below.

Table 6

Mothers' Occupational Status of the Experimental and Control Group Members

Mother job	Experimental Group		Control Group	
	F	%	F	%
Civil servant	7	29.16	4	16.6
Worker	4	16.6	0	0
Housewife	11	45.83	15	62.5
Not specified	2	8.4	5	20.83
Total	24	100	24	100

According to Table 7, any difference between the experimental and control groups' mother-job was tested by means of chi-square test and the results are shown in Table 7 below.

Table 7

Mothers' Job of the Experimental and Control Groups' Members

Groups	n	Civil-servant	worker	House-wife	Chi-square	P
Experimental	22	7	4	11	5.242	.07
Control	19	4	0	15		
Total	41	11	4	26		

For determining any significant difference between mothers' occupation of the experimental and control groups chi-square test was applied and results determined that [chi-square= 5.242, $p > 0.05$] there was no statistically significant difference between their fathers' job.

In the next step, for comparing parental social class status, parents' education level of the experimental group was compared with the control group. The results are demonstrated in Table 8 below. Parental education level is one of the most important factors that reveal the social class of a family. Education level and occupational status of parents may affect the family economic status as Montreo et al. (2014) state that "economic status has proven to be crucial in the language acquisition process..." of second language learners (p, 435).

Table 8

Fathers' Educational Level of the Experimental and Control Group Members

Fathers' Education Level	Experimental Group		Control Group	
	F	%	F	%
Primary School	4	16.6	4	16.6
Secondary School	2	8.4	1	0.41
High School	8	33.33	8	33.33
University	9	37.73	5	20.83
Not specified	1	8.4	6	25
Total	24	100	24	100

For determining any significant difference between both groups' members in terms of their fathers' education, the obtained data was analysed through chi-square test and the results are depicted in Table 9.

Table 9

Fathers' Education Level of the Experimental and Control Groups' Members

Groups	n	Primary- school	Secondary- school	Hight- school	university	Chi- square	P
Experimental	23	4	2	8	9	0.88	.083
Control	18	4	1	8	5		
Total	41	8	3	16	14		

For determining any significant difference between fathers' education level of the experimental and control group chi-square test was used again and obtained results shown in Table 9 determined that [chi-square= 0.88, $p > 0.05$] there was no statistically significant difference between both groups' members in term of their fathers' education level.

The other factor which was compared between both groups was their mothers' education level. The number and percentages of their mothers' education level is shown in Table 10.

Table 10

Mothers' Educational Level of the Experimental and Control Group Members

Mothers' Education Level	Experimental Group		Control Group	
	F	%	F	%
Primary School	6	25	5	20.83
Secondary School	2	8.4	0	0
High School	6	25	6	25
University	7	29.16	4	16.6
Not specified	3	12.5	7	37.5
Total	24	100	24	100

Mothers' education level of the experimental and control group was analyzed through chi-square test as well. Table 11 reveals the resulted data.

Table 11

Mothers' Education Level of the Experimental and Control Groups' Members

Groups	n	Primary-school	Secondary-school	Hight-school	university	Chi-square	P
Experimental	21	6	2	6	7	1.96	.58
Control	15	5	0	6	4		
Total	36	11	2	12	11		

Table 11 states that there is no significant difference between the experimental and control groups' mother-education level as [chi-square= 1.96, $p > 0.05$].

In sum, social class of the experimental and control groups was compared through analysing both groups' parental occupational and educational levels. The obtained results from chi-square demonstrated that there was no statistically significant difference between both groups' parental social status (class).

3.4.3. Participants' native language

All participants' native languages are shown in Table12.

Table 12

Experimental and Control Group Participants' Native Language

Native Language	Experimental Group Members	Control Group Members
Turkish	22	22
Kurdish	1	0
Arabic	1	1
Azerbaijani Turkish	0	1
Total	24	24

Table 12 demonstrates that both the experimental and control groups with 22 native Turkish and 2 non-native speakers have a balance from native language background perspective, as well.

3.4.4. Participants' age distribution

Age distribution of the experimental and control group members is shown in Table 13. As demonstrated numerically, ages of participants are over 18. So, the participants are regarded as adult language learners.

Table 13

Age Distribution of the Experimental and Control Groups

Age	18	19	20	21	22	Not specified	Total
Experimental group	4	6	8	3	1	2	24
Control Group	5	6	6	3	0	4	24

3.5. Data Collection Tools and Procedure

In this section, data collection tools and the procedure of collection data are explained. The tools used to gather both quantitative and qualitative data are explained in detail.

3.5.1. Demographic Information

Participants were given a questionnaire (see Appendix 1) at the beginning of the semester including some questions about them and their social status. The full 10 minute class time was reserved for filling out the questionnaire.

3.5.2. Michigan Test of English Placement (MTELP)

Before pre-tests (Appendix 2), we administered MTELP to measure the English proficiency level of the control and experimental groups and to see if there is any difference between both groups' general English proficiency level. MTELP scores were not disclosed to the participants. The participants willing to learn the results were informed that the test was aimed to just determine the overall proficiency level of the class with the purpose of providing information for the researcher and that the scores would not affect their final achievement scores.

MTELP is a paper-based test which has four sections for listening, reading, grammar, and vocabulary. Listening section asks test takers to hear a statement and choose the most appropriate answer or the best paraphrase from options in the booklet. Reading section questions are in multiple-choice format which are based on short passages of at most a few sentences. The vocabulary and grammar sections are in multiple-choice format, as well (Brooke et al., 2012).

3.5.2.1. English Proficiency Level of the Experimental and Control Groups

The participants' English proficiency level, both in the Experimental and Control Groups, was measured using MTELP. The results were analysed by using independent t-test through SPSS program, shown in Table 14.

Table 14

Independent t-test of Experimental and Control Groups Participants' English Proficiency Level

Group	N	MEAN	St.d	t	df	p
Experimental	24	28.2083	8.113	-110	46	.913
Control	24	28.4583	7.661			

Independent-samples t-test was conducted to compare language proficiency level of the experimental and control group members. And the results show that while the mean and standard deviation of the experimental group is (M=28.2083, SD=8.11322) and the mean and standard deviation of the control group is (M=28.4583, SD=7.66119). Conditions; $t((46)) = -110$, $p = .913$. So, the Sig. (2-Tailed) value in the outcome is 0.913. This value is bigger than .05. So, we can conclude that there is no statistically significant difference between the mean number of the experimental and control group which can be explained that there is homogeneity between two groups in terms of their English proficiency level.

3.5.3. Vocabulary Knowledge Scale (VKS)

A sample of Receptive and Productive Vocabulary Knowledge Scale (VKS) is shown in Tables 15 and 19 below. The aim of this scale is to measure the effectiveness of various vocabulary instructional techniques. Wesche and Paribakt's VKS (1996) is a format that enables learners to mark the stage that indicates their knowledge of each vocabulary item through recognition, recall, and production of the word (cited in Kwon, 2006). According to Wesche and Paribakht (1996) and Read (2000), the VKS is a generic instrument that can be applied to

measure any set of words. It includes five scales to capture certain levels in the core knowledge initial development of given words. The VKS merges self-report and performance items in order to elicit the self-perceived and demonstrated knowledge of particular words in a written form. This scale was used because it can assess both receptive and productive knowledge (Schmitt, 2000).

The validity and the reliability of the VKS have been established in some research studies by Wesche & Paribakht (1996, Cited in Kwon, 2006) and Joe (1995, 1998). To examine its reliability, Wesche and Paribakht administered the VKS to groups of students and found a strong relationship (with correlations of 0.92 to 0.97) between the students' self-ratings on the elicitation scale and their output scores suggesting that the students reported their level of knowledge of the target words accurately. For measuring Receptive Vocabulary Knowledge the fourth section on the scale (*D-I can use this word in a sentence*) depicted in Table 19, intended to measure the productive vocabulary knowledge, was eliminated as shown in Table 15 below. This feature is measured by the Productive Vocabulary Knowledge Test in the next section.

In the other words, VKS was designed to get initial stages in word learning that are agreeable to accurate self-report or expression through the use of a five-category Elicitation Scale that by using a five-Scoring scale provides information for scoring. Lack of "unidimensional representation" in terms of lexical knowledge could be, however, considered among VKS flaws (Schmitt, 2010) but Schmitt admits that "no current scale gives a full account of the incremental path of mastery of a lexical item, and perhaps acquisition is too complex to be so described" (p. 222, 224).

3.5.4. Receptive Vocabulary Knowledge Test

We measured both the experimental and control groups' receptive vocabulary knowledge, before and after the treatment (etymological vocabulary instruction) by using Vocabulary Knowledge Scale of Wesche and Paribakht's (1996).

It is confirmed by tests that compared to active (productive) vocabulary, passive (receptive) one is larger and that there exists a hierarchy between them: “if active knowledge is more difficult to achieve than passive knowledge, and if recall is more difficult than recognition, then the most advanced degree of knowledge is reflected in active recall and the least advanced knowledge is passive recognition” (Laufer & Goldstein 2004, p. 408).

In vocabulary tests, Nation (2001) recommends a minimum of 30 items for a reliable vocabulary test. We prepared the Receptive Vocabulary Knowledge Test which included 35 vocabulary items. The allocated time for answering the questions was 35 minutes. The vocabulary items of the test were selected from the participants' course book and workbook (Life, by Helen Stephenson et.al, 2013). The books come in series including 3 books based on Common European Framework of Reference (CEFR).

The vocabulary items taught through etymological and morphological vocabulary instruction were selected from the final book, B1 level of Life series. The words, excluding most commonly used ones, were randomly selected from the reading texts in the course book and the accompanied workbook. Expert opinion was also sought in determining the vocabulary selection. We have tried not to prejudice over the words selection (just Latin or Greek) and their suitability for etymological or morphological properties because “Every word has its own history” Bloomfield (1963, p.328).

The receptive vocabulary knowledge was assessed by asking learners to provide translation or synonym of the word tested (cited in Kwon, 2006). Table 15 below illustrates a sample of Receptive VKS test.

Table 15

Receptive VKS

Q	What do you know about this word “warrior”?
A	I don’t know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

3.5.4.1. Scoring of Receptive Vocabulary Knowledge Test

Scoring criteria of the receptive vocabulary knowledge indicated in VKS is shown in Table 16 below. For *unknown* words the given score is 1. For *just familiar* answers and *incorrect response* (translation or synonym) the given score is 2. For *correctly answered* items the given score is 3 (Cited in Kwon, 2006).

The total score of an individual participant is obtained by adding up the given scores for each item on the Receptive Vocabulary Knowledge Test.

Table 16

Receptive VKS scoring

A	1	Unknown
B	2	Just familiar
C	2	Incorrect response (translation or synonym)
	3	Correct response

3.5.4.2. Receptive Vocabulary Knowledge Pre-test Results of the Experimental and control group

For comparing receptive vocabulary knowledge of the experimental and control group their pre-test results was analysed through t-test as well.

By applying One-Sample Kolmogorov-Smirnov Test and resulted output shown in Table 17, it can be observed that all sigs are bigger than 0.05 and then it shows the normality of data and applicability of paired samples t-test.

Table 17

One-Sample Kolmogorov-Smirnov Test of pre-test scores of experimental and control groups (Receptive Vocabulary Knowledge)

One-Sample Kolmogorov-Smirnov Test		
	Pre-test Experimental group	Pre-test Control group
N	24	24
MEAN	42.5000	42.6250
Std. Deviation	6.27625	9.17375
Kolmogorov-Smirnov Z	.758	.939
Sig.	.613	.341

Independent-samples t-test was conducted to compare receptive vocabulary knowledge level of the experimental and control group members (Results are shown in Table 18).

Table 18

Receptive Vocabulary Knowledge Pre-Tests Results of the Experimental and Control Group Analyzed via Independent-Samples T-Test

Group	N	MEAN	St.d	t	df	p
Experimental	24	42.500	6.276	-.055	46	.956
Control	24	42.625	9.173			

The results show that while the mean and standard deviation of the experimental group is (M=42.500, SD=6.27625) and the mean and standard deviation of the control group is (M=42.625, SD=9.17375). Conditions; $t(46) = -.055$, $p = .956$. So, the Sig. (2-Tailed) value in the outcome is 0.956. This value is bigger than .05. So, we can conclude that there is no statistically significant difference between the pre-test means of the experimental and control groups in terms of their receptive vocabulary knowledge level.

3.5.5. Productive Vocabulary Knowledge Test

As we discussed before, Language learners' vocabulary knowledge includes receptive and productive vocabulary knowledge. Receptive vocabulary knowledge is the ability to understand a word after it is seen or heard while productive vocabulary knowledge is the knowledge to produce a word orally or in written form. It is believed that words are known at first and only after incidental or intentional learning become productive and it is generally believed that the size of receptive vocabulary is very larger than their productive vocabulary size. Then, in our study we wanted to assess the possible effect of etymology on productive vocabulary knowledge of experimental group's participants in comparison with the control group's participants. (Zhou, 2010, p.2).

We measured both the control and experimental groups' productive vocabulary knowledge, before and after the treatment, using Productive Vocabulary Knowledge Test of Wesche and Paribakt's (1996) Vocabulary

Knowledge Scale (VKS) is shown in Table 19. The aim of this scale is to measure the effectiveness of various vocabulary instructional techniques.

The vocabulary selection procedure for the Productive Vocabulary Knowledge Test was the same as the Receptive Vocabulary Knowledge Test mentioned in the previous section. The Productive Vocabulary Knowledge Test had 32 items. As mentioned before, in vocabulary tests, Nation (2001) recommends a minimum of 30 items for a reliable vocabulary test.

In this phase of the study, productive vocabulary knowledge of the experimental and control groups was measured quantitatively.

Participants had 32 minutes for filling up the blanks. We used Wesche and Paribakt's 1996 VKS, a format that enables learners to mark the stage that indicates their knowledge of each vocabulary item through recognition, recall, and production of the word (Cited in Kwon, 2006). VKS can assess both receptive and productive knowledge (Schmitt, 2000). The validity and the reliability of the VKS have been established in some research studies by Wesche & Paribakht (1996, Cited in Kwon, 2006) which was mentioned in the previous section (3.5.3. Vocabulary Knowledge Scale (VKS)) in detail.

As can be clearly seen, the only difference between the receptive and productive VKS is in the final part (Forming sentence) where the participants are required to produce a sentence with the given vocabulary item.

The productive vocabulary knowledge was assessed by asking learners to provide translation or synonym of the word tested (cited in Kwon, 2006, p.73). Table 19 below illustrates a sample of Productive VKS test.

Table 19

Productive VKS

Q	What do you know about this word “warrior”?
A	I don’t know
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

3.5.5.1. Scoring of Productive Vocabulary Knowledge Test

Scoring criteria of the productive vocabulary knowledge indicated in VKS is shown in Table 20 below.

For unknown words the given score is 1. For just familiar answers and incorrect response (translation or synonym), the given score is 2. For Correct response the given score is 3. If the word is used in a semantically inappropriate manner with grammatical inaccuracy in a sentence, the given score is 3. If the word is used either in a semantically inappropriate manner or with grammatical inaccuracy in a sentence, the given score is 4. If the word is used in a semantically appropriate and with grammatical accuracy, the given score is 5 (Cited in Mukarto, 2005, p.154).

Table 20

Productive VKS scoring

A	1	Unknown
B	2	Just familiar
C	2	Incorrect response (translation or synonym)
	3	Correct response
D	3	The word is used in a semantically inappropriate mannered with grammatical inaccuracy in a sentence.
	4	The word is used either in a semantically inappropriate manner or with grammatical inaccuracy in a sentence.
	5	The word is used in a semantically appropriate and with grammatical accuracy.

The total score of an individual participant is obtained by adding the given scores for each item on the Productive Vocabulary Knowledge Test.

3.5.5.2. Productive Vocabulary Knowledge Pre-test Results of the Experimental and control group

For comparing productive vocabulary knowledge of the experimental and control group their pre-test results was analysed through independent t-test.

By applying of One-Sample Kolmogorov-Smirnov Test and resulted output is shown in Table 21 , it can be observed that all sigs are bigger than 0.05 and then it shows the normality of data and applicability of paired samples t-test.

Table 21

One-Sample Kolmogorov-Smirnov Test of pre-test scores of experimental and control groups (productive vocabulary knowledge test)

One-Sample Kolmogorov-Smirnov Test		
	Pre-test exp	Pre-test cont
N	24	24
MEAN	40.4167	41.7500
Std. Deviation	6.28951	10.83172
Kolmogorov-Smirnov Z	.476	.902
Sig.	.977	.391

Productive Vocabulary Knowledge pre-tests results of both groups were compared through independent t-test to see if there is any statistically significant difference between the pre-tests scores of both groups (Shown in Table 22 below).

Table 22

Productive Vocabulary Knowledge Pre-Tests Results of the Experimental and Control Group Analyzed via Independent-Samples T-Test

Group	N	MEAN	St.d	t	df	p
Experimental	24	40.416	6.289	-.522	46	.605
Control	24	41.750	10.831			

The results show that while the mean and standard deviation of the experimental group is (M=40.416, SD=6.289) and the mean and standard deviation of the control group is (M=41.750, SD=10.831). Conditions; $t(46) = -.522$, $p = .605$. So, the Sig. (2-Tailed) value in the outcome is 0.605. This value is bigger than .05.

So, we can conclude that there is no statistically significant difference between the pre-test means of the experimental and control groups in terms of their productive vocabulary knowledge level.

3.5.6. Written Spelling Test

Written spelling was another dependent variable we wanted to observe if etymological vocabulary instruction had any possible effect on the participants. In order to measure written spelling of the participants we used paused dictation. Paused dictation is a text with missing words which students are required to fill in the missing words while the teacher dictates the text (Pavlu, 2009).

Oller (1971) argues that dictation is more reliable and more valid than other traditional test types for testing written spelling of language learners in which the examiner dictates the text and students write it down (Cited in Pavlu, 2009). Dictation after extensive researches has regained legitimacy as a reliable, valid, and practical language testing procedure (Farhadi and Malekpour, 1997).

For scoring written spelling it is better to set the scale of assessment before correction but there exists the question of objectivity because every teacher will look from his/her own perspective to the dictations. To prevent this problem Berka and Vanova suggest that we can use an alternative to dictation called paused dictation (Berka and Vanova, 2005 cited in Pavlu, 2009).

Accordingly, we tested the learners' written spelling quality using a paused dictation that we have designed (Appendix 2 section 3). Table 23 depicts a sample of paused dictation items.

Table 23

Sample of written spelling test (paused dictation)

1.	I prefer to have _____ lenses instead of glasses.
2.	Japan is a/n _____ country.

We randomly chose 30 words from among the etymologically taught words. Each of these selected words was used in individual sentences. After that a female Native American English teacher read out the sentences and the researcher audio recorded it. The targeted vocabulary items were left out in each of the sentences on the test. Then the participants listened to the audio recording twice and filled in the blanks. This paused dictation was administered to the participants in both the experimental and control groups before and after the etymological and morphological vocabulary instruction.

3.5.6.1. Scoring of Written Spelling Test

The researcher did some modifications in terms of scoring criteria for practical purposes. The modified scoring criteria for the written spelling test (paused dictation) are as follows: each correctly spelled answer receives 2 scores, written spelling of items with one missing letter receives 1 score. And misspelled items with more than two missing letters and items with no answers receive 0 score (Pavlu, 2009).

3.5.6.2. Written Spelling Pre-test Results of the Experimental and Control group

For comparing written spelling knowledge of the experimental and control group their pre-test results was analysed through independent t-test.

By applying of One-Sample Kolmogorov-Smirnov Test and resulted output according to Table 24 , it can be observed that all sigs are bigger than 0.05 and then it shows the normality of data and applicability of paired samples t-test.

Table 24

One-Sample Kolmogorov-Smirnov Test of pre-test scores of experimental and control groups (written spelling test)

One-Sample Kolmogorov-Smirnov Test		
	Pre-test Experimental group	Pre-test Control group
N	24	24
MEAN	11.041	11.708
Std. Deviation	8.829	6.111
Kolmogorov-Smirnov Z	.832	.775
Sig.	.494	.585

Independent Samples T-Test was used, shown in Table 25, to illustrate the difference that may be between the pre-test scores of the experimental and control groups regarding written spelling scores.

Table 25

Pre-Tests Results of the Experimental and Control Group Analyzed via Independent-Samples T-Test (Written Spelling Test)

Group	N	MEAN	St.d	t	df	p
Experiment	24	11.041	8.829	-.304	46	.762
Control	24	11.708	6.111			

The results show that while the mean and standard deviation of the experimental group is (M=11.041, SD=8.829) and the mean and standard deviation of the control group is (M=11.708, SD=6.111). Conditions; $t(46) = -.304$, $p = .762$. So, the Sig. (2-Tailed) value in the outcome is 0.762. This value is bigger than .05. So, we can conclude that there is no statistically significant difference between the

pre-test means of the experimental and control groups in terms of their written spelling level.

3.6. Open-ended Questionnaire

Fourteen members of the treatment group participated in answering the open-ended questionnaire after treatment. The questions were as follows:

Questions:

1. Please indicate your general opinions about the vocabulary learning strategy of our teaching sessions.
2. Please give some examples of the words you have learned and used in practice so far by this method and specify a number of reasons you think have been most effective by applying this strategy of learning words.

3.7. Teacher Observation and Interview of the Control Group

In order to observe the way how unknown words were taught among control group members, the researcher observed the Reading Classes offered by 2 instructors for 6 sessions (in the control group class). According to his observation the instructors tended not to really engage with the etymological vocabulary instruction while teaching unknown words. In most of the cases they limited the way they teach new words, simply by giving synonyms, antonyms and by using the new words in sentences. Also, in some cases it was observed that the instructors used gestures to try to explain the meanings of the new words or provided their Turkish equivalent especially when the learners had difficulty in understanding the words.

At the beginning of the research study five instructors and five participants from the control and experimental groups were interviewed, the interviews were audio recorded and then transcribed. When the participants were asked what kind of VTS their instructors employed in the classroom for vocabulary instruction, we

saw that etymological and morphological vocabulary instruction was not among the strategies used by the instructors.

When the instructors were asked what kind of VTS they use in vocabulary instruction in the interview, none of the instructors mentioned etymological or morphological instruction as their applied strategy in the classes and the strategies for vocabulary instruction mentioned by the instructors were the strategies already aforementioned during teacher observation.

3.8. Experimental Group's Instructional Procedure

After the experimental group's members were assigned, in the first session of the etymological and morphological vocabulary instruction the researcher informed the participants about etymology and its components. The importance of the study and the possible benefits of it were explained to the participants in order to increase their intrinsic motivation (Richard et al., 2000) for cooperation.

The etymological and morphological vocabulary instruction of the experimental group delivered by the researcher continued for two months in the spring semester. The participants of experimental group received the instruction for three 45 minutes sessions per week during the Reading classes held by the researcher himself. The course book used in the reading classes was one of the National Geographic Life series books level B1 according to CEFR (by Helen Stephenson et.al, 2013). At each instructional session approximately, 5-7 vocabulary items from each unit of the book, starting from unit 3 to unit 12 in the course book, were taught and a handout (Appendix 4) prepared beforehand regarding the etymology of the words planned to be instructed was handed out to the learners. Besides, the word meant to be taught according to the syllabus of the reading class students demanded explanations of more or less 3 to 5 more words during etymological and morphological vocabulary instruction sessions. Additionally, assistance and etymological explanations were provided for new and unknown words when participants had problem with during each session.

Here is the list of the words instructed through etymological and morphological vocabulary instruction: *augmented, sophisticated, ventilation, entrepreneur, sculpture, complemented, readjust, intersection, mutinous, prospectors, elegant, deforestation, conservationist, relic, hardship, confrontation, hieroglyph, infuriate, advocate, revolt, indigenous, deliberately, infrastructure, squander, dwindle, reputation, suburbia, consultancy, desalination, deplore, orator, predictability, attribute, articulate, illustration, interface, ventilation, entrepreneur injustice, scratch, exhausted, downstream, inconvenient, compensation, rejoiced, cyclones, contaminant, incompetent, accommodate, descendant, distort, outstretch, distract, fascination, troublesome, thrive, promptness, sculpture, regulation, prescriptive, plummet, impartial, determination, daunting, commodities, traumatic, inconspicuous, suspicion, guarantee, neighbourhood, emphasised, appreciate, industrialised, sustainable, embarrass, ghostly, haven, colleagues, redundancy, anxious, Aerospace, dynasties, hieroglyph, interrupt, mispronounced, possession, gimmick, spectacle, Intervening, circumstances, regions, incinerator, thrived, devastating, customs, excess.* In addition to this list of words, about 3 to 5 more words that the students demanded to be explained were taught at each session.

For the purpose of etymological vocabulary instruction the researcher designed lesson plans for each of the teaching sessions; the overall design remained the same except for the vocabulary items taught at each lesson (Appendix 3). The first session of etymological and morphological vocabulary instruction of the experimental group included some explanation about the etymology and its subsets like morphology and affixation. The researcher began with one example focusing on the morphology of the word 'breakfast' and divided it into the morphemes 'break' and 'fast' and explained their meaning separately and in combination. This explanation received a great interest among the participants all of them expressed that they had had no information about morphological structure of the word 'breakfast'. Here the researcher noticed that the learners did not know the meaning of 'fast' in isolation, so the meaning was explained to them as 'not eating'. The researcher then explained that the study of etymology and

morphology involves following the origins of a particular phrase or word, their morphology, and affixations. Also, during the instruction it was emphasised that etymology can reveal whether the meaning of a word or phrase has remained the same during centuries of usage or not. To get the learners more familiarized with the etymological vocabulary instruction some more explanations and examples were provided as follows:

Curfew: The Origins of Curfew is French. The word translates to, "...cover the fire.." This refers to the practice in homes that used open fires for cooking to make sure the fire had extinguished for the night and would not spread around. The curfew was, "...the signal or bell to cover or extinguish fires." This signal was conducted by the, "...town crier.." .Then the etymology of 'Curfew' was checked from online etymological dictionary (www.etymonline.com) and explained in Figure 7.

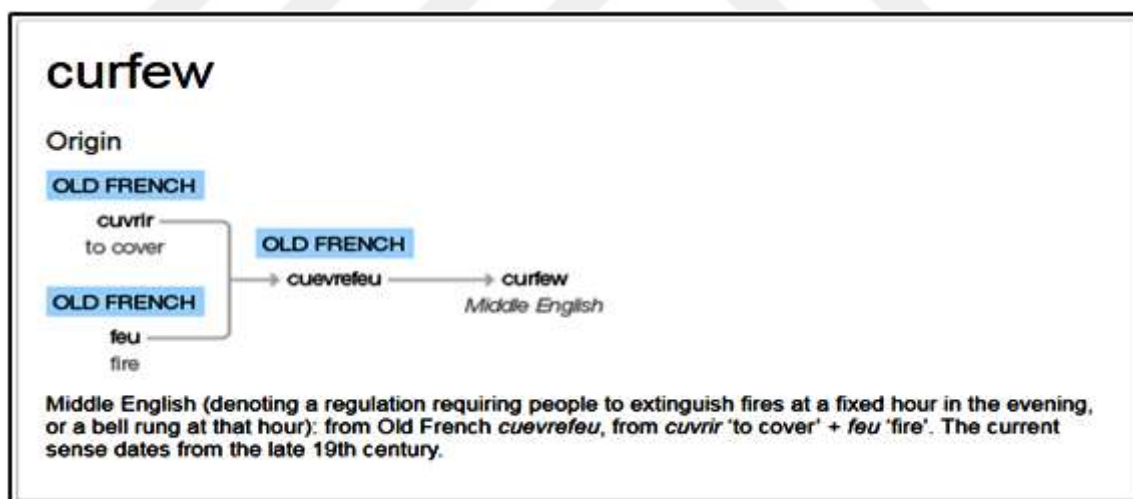


Figure 7. Etymological analysis of 'Curfew' in www.etymonline.com

Widow: This word's first meanings are from the fourteenth century include, "...lonely..solitary.." A base of the word spelled, "...weidh.." means, "...separation.." . 'Widow' was looked up from online etymological dictionary as well (Figure 8).

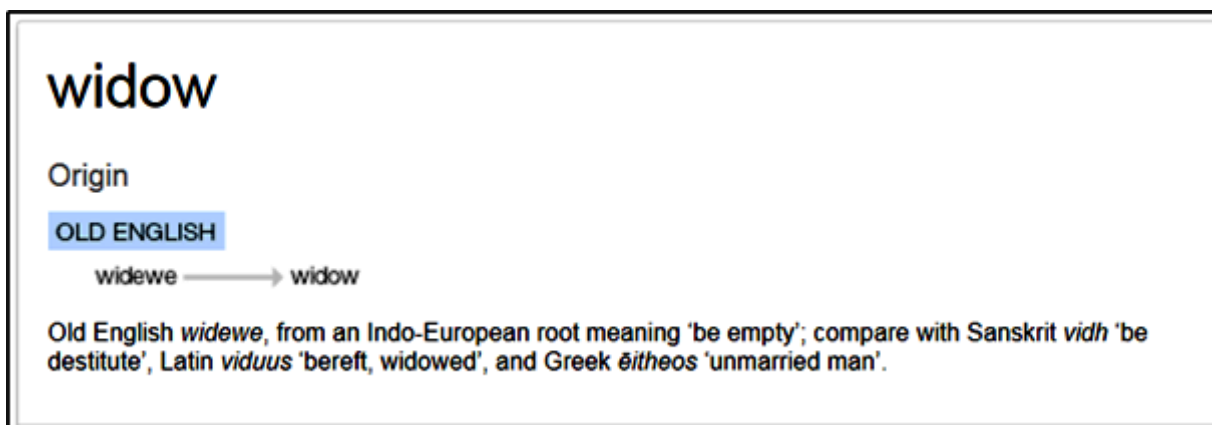


Figure 8. Etymological analysis of 'Widow' in www.etymonline.com

Attempting to explain word meanings in this manner made a big interest in students about etymology conclusively in morphology. The learners were given some examples from other languages like 'volcano and yogurt' which entered the English language through borrowing from Italian and Turkish.

Some common examples of prefixes, suffixes, Latin and Greek roots in English was copied from Hanson and Padua (n, d) book and delivered to the students (Appendix 6). Then, online etymology dictionary and online morphological, affixation dictionary was introduced to them successively:

www.etymonline.com, www.beta.merriam-webster.com and its application for Smart phones were introduced to them. In other words, we wanted the learners to use online etymology dictionaries and install 2005 Merriam Webster Etymology Dictionary on their smart phones, PC or Laptops in order to check unknown words.

Before beginning the second and other remaining sessions we prepared a list of new words from their course books, including meaning of the words plus their etymological background, morphological analysis (root and affixes) and the words' other forms by using etymological and morphological dictionaries (e.g. The Concise Oxford Dictionary of English etymology) for each session as a handout (Appendix 4). We discussed the affixes of the words and their meanings and their effects on words' meaning during the sessions, too. In fact, not only we explained

the etymological background of words, but also gave other forms of that word, as well. Below is an example of one of the words, 'inconspicuous', covered at one of the etymological instruction session (Figure 9).

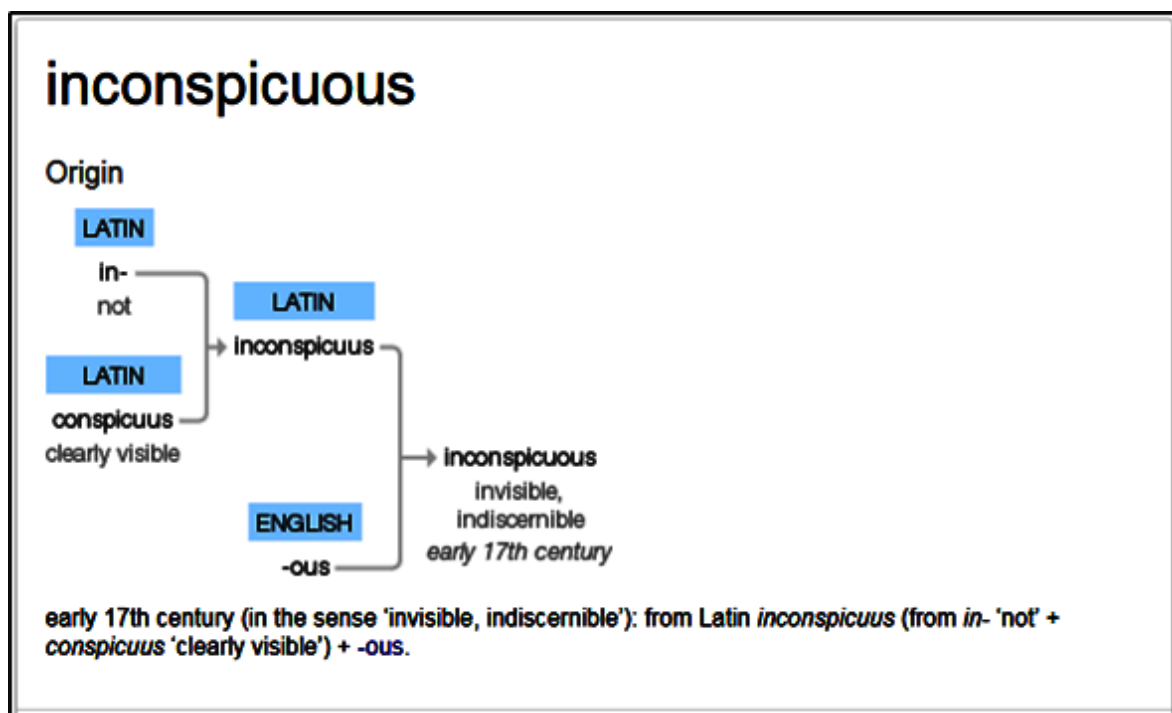


Figure 9. Etymological analysis of 'inconspicuous' in www.etymonline.com

Knowledge about the origin of words can help to connect the new words to the schema (Piaget, 1920, cited in Fleming, 2004) of the learner and in this way their learning would not just be considered rote learning as the learners get engaged with the roots, affixations etc.

Here is a brief summary of etymological and morphological vocabulary instruction employed throughout the treatment:

1. Handouts were delivered to the participants to be used both during and possibly after each session (Appendix 4).
2. After writing words including their morphemes and affixations on the whiteboard by the instructor, their etymology was searched on the internet using online etymology and morphology dictionaries on smart board and

learners were able to see and write down the necessary and additional explanations on the handouts.

3. A short discussion was done about the similar words with the same roots.
4. The meaning of words asked by learners was looked up and explained using etymology.

We asked the experimental group's members to keep the materials in secrete so that the control group members would not have access to the etymological vocabulary learning they were exposed to because it could have affected and jeopardized our research study results.

3.8.1. Sample Handout

The teaching procedure employed for etymological and morphological vocabulary instruction from the second to the final session was the same. Pre/post-test words, which were chosen out of each unit, excluding unit 1 and 2 as these units were already covered by the instructors of the Institution at the time the research started, were written in form of a handout using Rothstein & Rothstein's (2009) Morphology, and Etymology, part of speech classification tables (Appendix 4). The handouts consisted of 5 sections namely the vocabulary item, its origin, past and past participle form of the words when it was a verb, other forms of the word and finally affixations. For each etymological vocabulary instruction session handouts with different vocabulary items for each unit in the course book were provided. Additional explanations about the history and story of words were discovered by learners through the internet in the classroom.

3.9. Control Group's Instructional Procedure

Control groups' participants did not receive any etymological, morphological or affixational instruction by the researcher. The Life book and its same chapters (3 to 12) were taught to them including all words and other skills through the school teachers and their conventional school instruction. For ensuring that etymological and morphological vocabulary instruction was not used in the classes by the

teachers in the control group, we have conducted an interview with all 5 teachers in the preparatory school, and 5 participants of the control group. The interviews were audio recorded and transcribed. The interviews demonstrated that none of teachers used etymological and morphological vocabulary instruction in the class.

3.10. Data analysis

To ensure homogeneity between the experimental and control group in terms of English language proficiency MTELP was employed and t-test was used to compare pre-test results of the experimental and control group in terms of receptive/productive vocabulary learning and written spelling. The results were discussed in the methodology chapter. For comparing post-test results of the receptive/ productive vocabulary learning and written spelling of both groups with each other, mixed ANOVA test was used for analysing the data. All data analyses were conducted by means of SPSS 17.

To find out the personal views about the effect of vocabulary instruction through etymological and morphological vocabulary instruction, the experimental group's participants were asked to answer an open-ended questionnaire which comprised two open-ended questions. The answers were categorized and explained in Chapter IV.

In conducting content analysis of qualitative data inductive approach was utilised. First, we started with manual coding by highlighting interesting or salient features of the data, then providing that data with a code. We highlighted the parts of the texts that of interest to our hypotheses. And then we provided a code that represents features or meaning within the text. After determining the list of codes, we refocused by sorting initial codes into some kind of order or into groups. Then we merged the codes together and combined them to form overall thematic categories (Saldana, 2013).

CHAPTER IV

DATA ANALYSIS AND RESULTS

4.1. Introduction

This chapter reports on the quantitative and qualitative results of this mixed-method study. The quantitative data was gathered through three pre-tests which were employed as post-tests, as well. This chapter presents the data analysis of the pre/post-test results obtained from the experimental and control group members by means of mixed ANOVA test in three sections, namely receptive vocabulary knowledge test, productive vocabulary knowledge test and written spelling test which all were analysed in the same way. Finally, Section 4.5 presents results gathered from qualitative data analysis through an open-ended questionnaire which included 2 open-ended questions in English with their translations in Turkish.

4.2. Receptive Vocabulary Knowledge Test

In this section, any significant difference between receptive vocabulary learning pre/post-test scores of the experimental and control groups are scrutinised. As was proved by using t-test and discussed before in the methodology section, there was no statistically significant difference between the pre-test results of the experimental and control groups.

While the pre-test mean of the receptive vocabulary knowledge test of the participants in the experimental group was 42.50, it increased to 79.79 in the post-test results. And the pre-test mean of the control group was 42.5 which increased to 46.65 in the post-test results.

For exploring the post-test results of the experimental and control groups statistically and comparing them in order to discover any significant differences between the scores of both groups' receptive vocabulary knowledge, we applied

mixed ANOVA test through SPSS 17 program whose results are shown in Table 26 below.

Table 26

Pre-Test and Post-Test Scores of Receptive Vocabulary Knowledge of the Experimental and Control Groups

		N	Pre-test		Post-test		Group X Factor	
			Mean	St.d	Mean	St.d	F	p
Groups	Experimental	24	42.50	6.27	79.79	9.06	378.83	.000
	Control	24	42.62	9.17	46.625	11.06		

For analyzing and comparing the pre/post-test results of the experimental and control group Mixed ANOVA test was applied. According to Mixed ANOVA results depicted in Table 26, while the pre-test mean of the experimental group was 42.50, the mean of the post-test increased dramatically up to 79.79. However, the control group's pre-test mean score was 42.62 which had a slight increase in the mean of the post-test score up to 46.625.

Since the post-test Mean of the experimental group ($M=79.79$, $SD= 9.06$) is bigger than the post-test mean of the control group ($M=46.62$, $SD= 11.06$) and ($F= 378.83$, $p < 0.05$). So, the alternative hypothesis (H_1) of the study is supported and there is a significant difference between the pre-test and post-test scores of the control and experimental groups in regard with their receptive vocabulary knowledge after etymological and morphological vocabulary instruction. In other words, the experimental group outperformed the control group members in receptive vocabulary knowledge and this outperformance shows positive effect of etymological and morphological vocabulary instruction on the experimental group's participants.

Figure 10 below demonstrates the score improvement of the experimental group in comparison with the control group using a line chart.

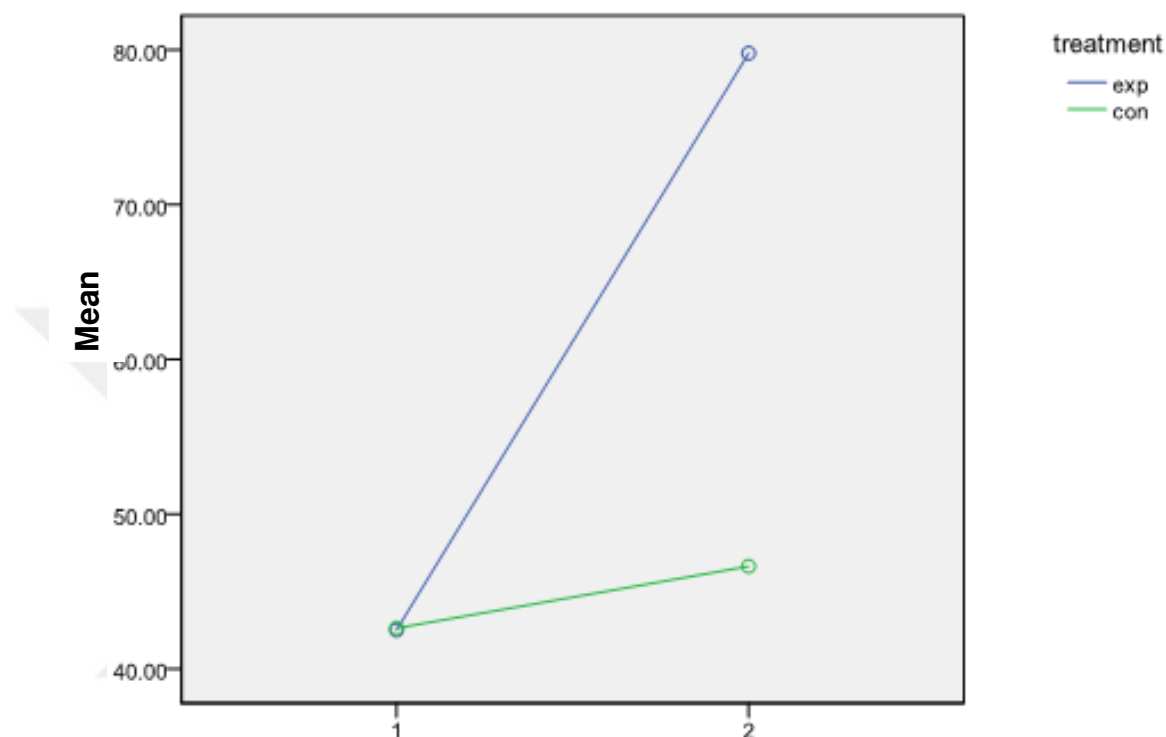


Figure 10. Receptive vocabulary knowledge scores' line chart of the experimental and control group

The reliability of pre-tests and post-tests of both experimental and control groups were tested through SPSS 17 program in terms of their receptive vocabulary knowledge test and Cronbach's Alpha results were 0.817 and 0.914 respectively. As these numbers are bigger than 0.7, it demonstrates the reliability of the employed test.

4.3. Productive Vocabulary Knowledge Test

In this section, the obtained numeric results of both groups was compared statistically to observe if there is any difference between the productive vocabulary knowledge post-test scores of both the experimental and control groups.

As we discussed before in Methodology Chapter of this study, the means of the pre-tests and the post-tests in terms of productive vocabulary knowledge demonstrated an increase in the scores of both the experimental and control groups. While the mean of the productive vocabulary pre-test scores of the participants in the experimental group was 40.41 it increased to 86.41 in the post-test. And the mean score of the control group was 41.75 in the pre-test that increased to 44.83 in the post-test. The result of t-test showed no significant difference between pre-test results of the experimental and control group.

For analysing the pre/post-test results of the experimental and control groups statistically and comparing them in order to observe any significant difference between scores of the participants' productive vocabulary knowledge, mixed ANOVA test was employed through SPSS 17 program which the results are shown in Table 27 below.

Table 27

Pre-Test and Post-Test Scores of Productive Vocabulary Knowledge of the Experimental and Control Groups

			Pre-test		Post-test		Group X	
N							Factor	
			Mean	St.d	Mean	St.d	F	p
Groups	Experimental	24	40.41	6.28	86.41	8.35	659.4	.000
	Control	24	41.75	10.83	44.83	11.18		

Results of Mixed ANOVA test in terms of the productive vocabulary knowledge of the experimental and control groups are depicted in Table 27. The pre-test mean score of the experimental group (40.41) shows an increase (86.41) in the post-test, and the control group's pre-test mean score (41.75) increased in the post-test results (44.83) as well.

Since the post-test Mean of the experimental group ($M=86.41$, $SD=8.35$) is bigger than the post-test mean of the control group ($M=44.83$, $SD= 11.18$) and ($F= 659.4$, $p < 0.05$). So, the alternative hypothesis (H_1) of the study is supported and there is a significant difference between the pre-test and post-test scores of the control and experimental groups in regard with their productive vocabulary knowledge after etymological and morphological vocabulary instruction. In other words, the experimental group outperformed the control group members in productive vocabulary knowledge and this outperformance shows the positive effect of etymological and morphological vocabulary instruction on the experimental group participants after etymological and morphological vocabulary instruction.

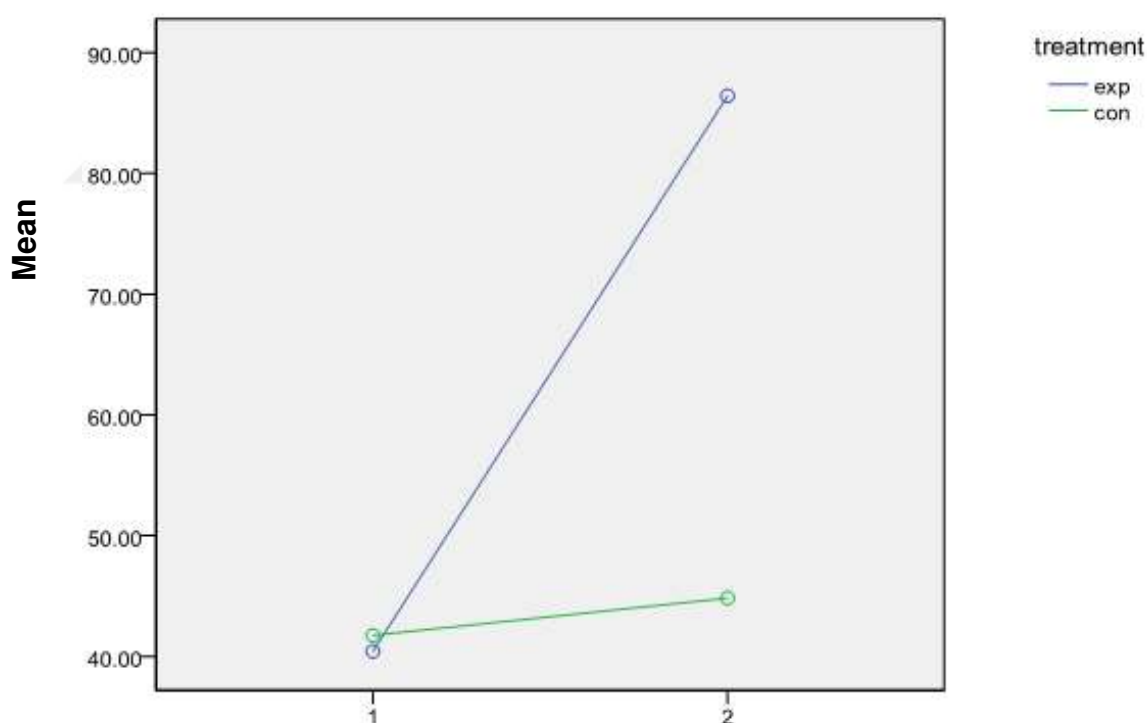


Figure 11. Productive vocabulary knowledge scores' line chart of the experimental and control group

Figure 11 demonstrates the score improvement of the experimental group in comparison with the control group using a line chart.

The reliability of pre-tests and post-tests of both experimental and control groups were tested through SPSS 17 program in terms of their productive vocabulary knowledge test and Cronbach's Alpha results were 0.731 and 0.955 respectively. As these numbers are bigger than 0.7, it demonstrates the reliability of the employed test.

4.4. Written Spelling Test

In this part of the Chapter IV, we are going to discover whether any significant differences exist between written spelling post-test scores of the control and the experimental groups.

As we showed and discussed before in the methodology chapter, there was no statistically significant difference between the pre-test results of the experimental and control groups.

For exploring the pre/post-test results of the experimental and control groups statistically and comparing them to find any significant differences between their scores in participants' productive vocabulary knowledge, we employed mixed ANOVA test through SPSS 17 program which the results are shown in Table 28.

Table 28

Pre-Test and Post-Test Scores of Written Spelling of the Experimental and Control Groups

			Pre-test		Post-test		Group X	
			N				Factor	
			Mean	St.d	Mean	St.d	F	p
Groups	Experimental	24	11.04	8.82	35.83	6.21	112.40	.000
	Control	24	10.50	5.74	15.95	7.93		

The pre-test and post-test scores of written spelling of the experimental and control groups were analyzed by using Mixed ANOVA and the results are depicted in Table 28. The pre-test mean score of the experimental group members (11.04) increased (35.83) in their post-test, and the control group's pre-test mean score (10.50) increased in the post-test results (15.95) as well.

Since the post-test mean of the experimental group ($M=35.83$, $SD=6.21$) is bigger than the mean of the control group ($M=15.95$, $SD=7.93$) and ($F=112.40$, $p < 0.05$). So, the alternative hypothesis (H_1) of the study is supported and there is a significant difference between the pre-test and post-test scores of the control and experimental groups in regard with their written spelling skill after etymological and morphological vocabulary instruction. In other words, the experimental group outperformed the control group members in terms of written spelling and this outperformance shows the positive effect of etymological and morphological vocabulary instruction on the experimental group participants' performance after etymological treatment. Figure 12 demonstrates the score improvement of the experimental group in comparison with the control group using a line chart.

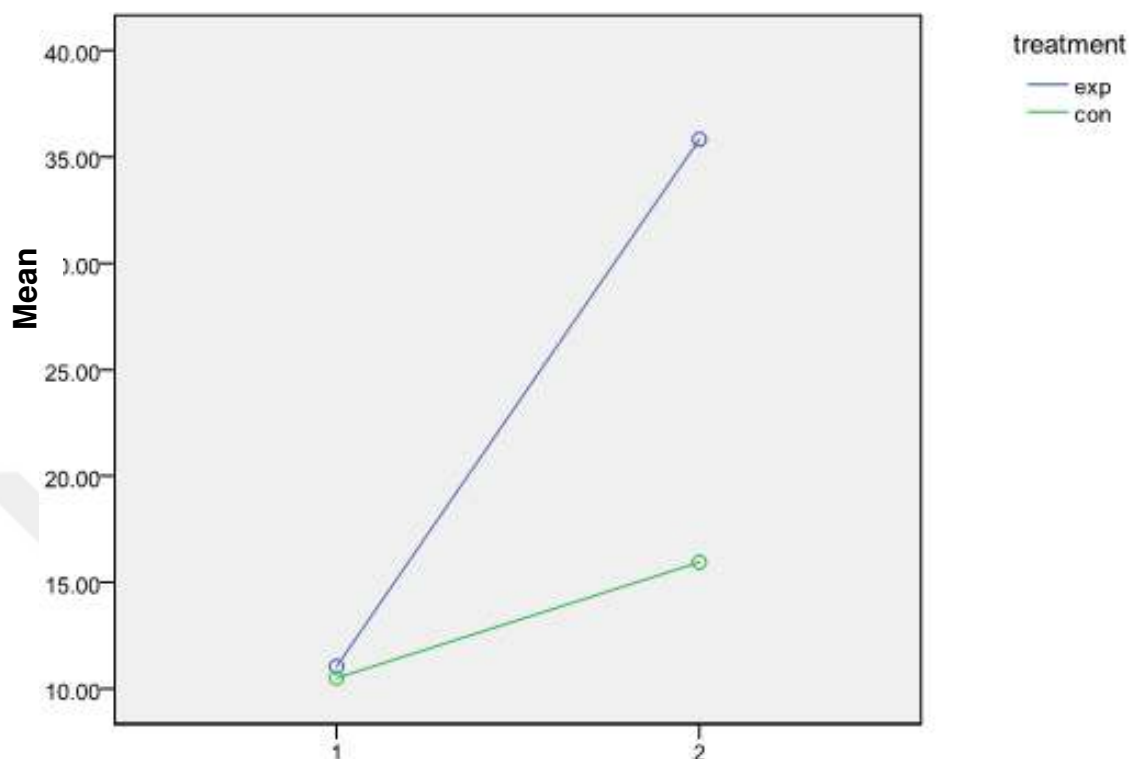


Figure 12. Written spelling scores' line chart of the experimental and control group

The reliability of pre-tests and post-tests of both experimental and control groups were tested through SPSS 17 program in terms of their written spelling and Cronbach's Alpha results were 0.704 and 0.884 respectively. As these numbers are bigger than 0.7, it demonstrates the reliability of the employed test.

4.5. Content Analysis of Open-ended Questionnaire

Fourteen members of the experimental group participated voluntarily in answering the open-ended questionnaire after the treatment. The open-ended questionnaire included two questions in English with their Turkish translations (Appendix 5). The participants were asked to answer the questions in a written form. The answers were categorized; content analysed and explained as follows.

4.5.1. First Question of Open-ended Questionnaire

Please indicate your general opinions about the vocabulary learning strategy of our teaching sessions.

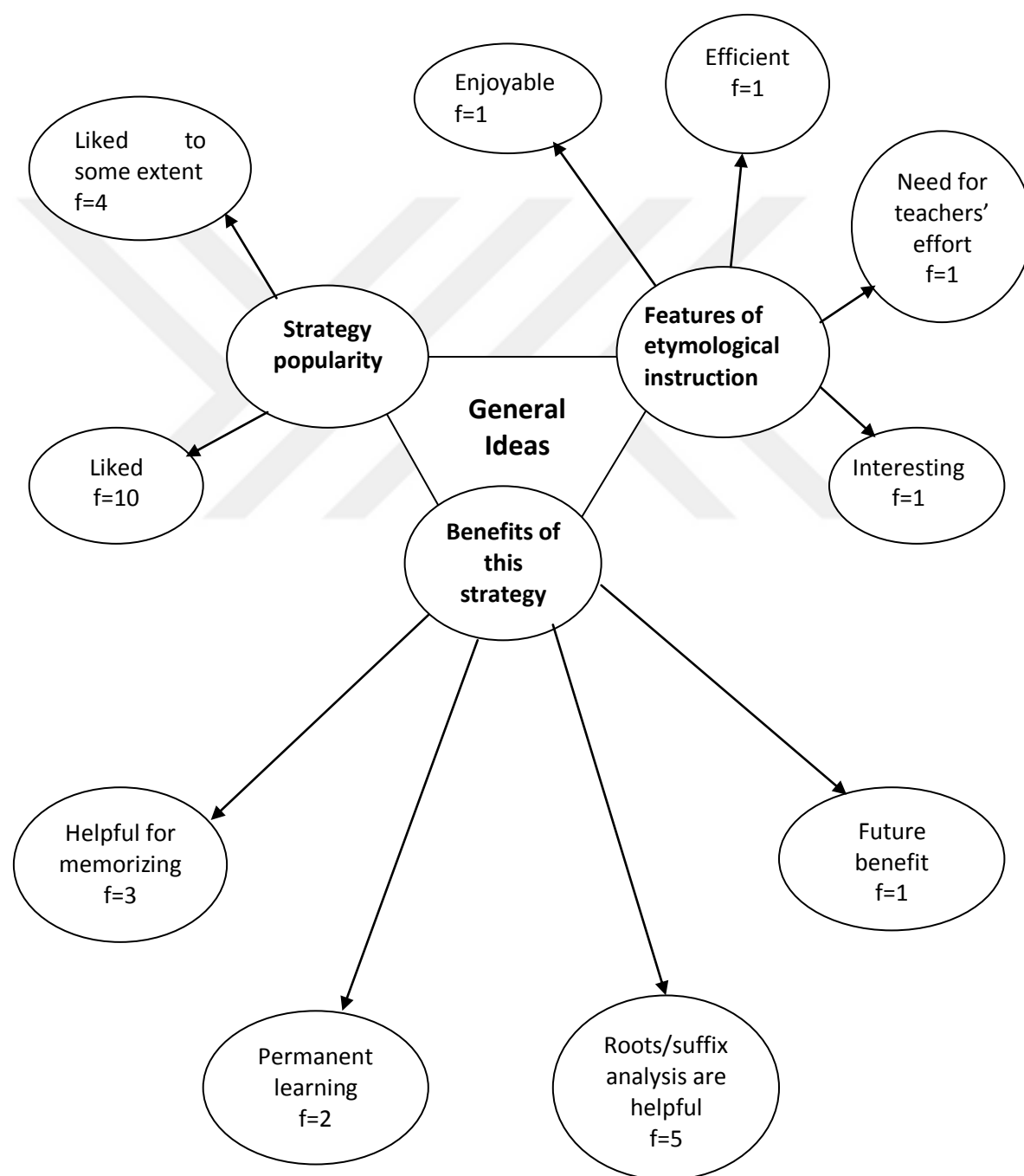


Figure 13. Content analysis of open-ended questionnaire (First question)

The content analysis of the open-ended questionnaire in regard with the first-question is depicted in Figure 13.

The general idea of the experimental group participants' view about etymological and morphological vocabulary instruction was asked and categorized. According to the answers, regarding the popularity of this strategy, ten participants "liked this strategy" while the remaining four "liked it to some extent".

Other categorized data is related to the features of the etymological and morphological vocabulary instruction which the participants reflected in their comments. There were four views about this strategy and the participants believed that the etymological and morphological vocabulary instruction was "interesting", "it requires teachers' effort", as participant number 5 said "It was efficient..." and participant 8 mentioned "it was an enjoyable strategy for learning vocabulary" for them.

The other categorized part is the comments that the participants gave about the benefits of the etymological and morphological vocabulary instruction in their general idea. Three participants (number 3, 10 and 11) commented that this strategy was "helpful for memorizing new words". Two other participants (number 2 and 7) claimed that etymologically learned words helped them retain the words more "permanently" in their mental lexicon. Five participants (number 3, 4, 9, 10 and 14) stated that "roots and affixation" were helpful in their vocabulary learning. And one comment was about the benefit of this strategy in his future plan for vocabulary learning.

All participants' responses after being considered together, utility of etymological vocabulary instruction could be regarded as a commonly accepted beneficial strategy of vocabulary learning.

4.5.2. Second Question of Open-ended Questionnaire

Please give some examples of the words you have learned and used in practice so far by this method and specify a number of reasons you think have been most effective by applying this strategy of learning words.

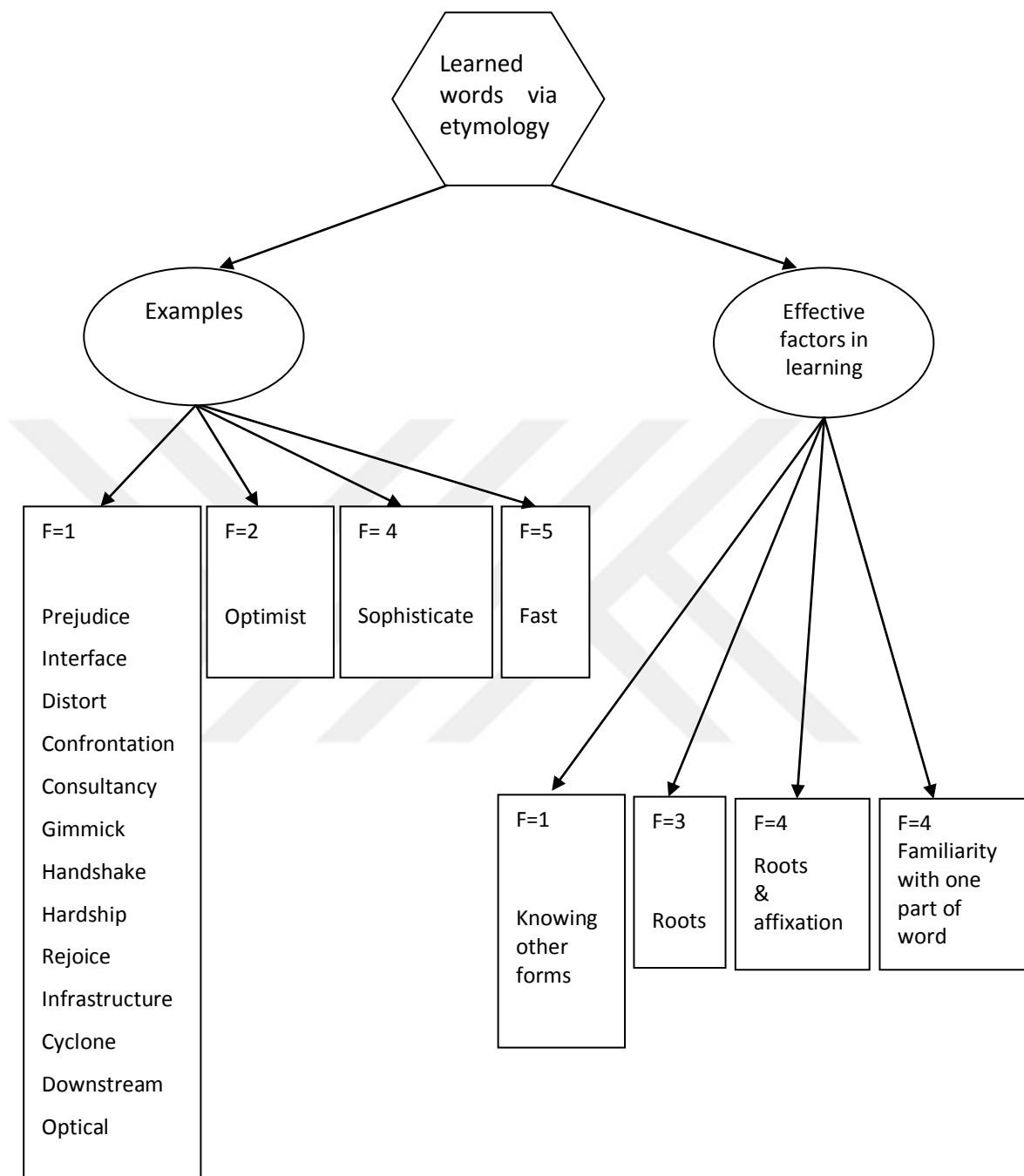


Figure 14. Content analysis of the open-ended questionnaire (Second question)

Figure 14 shows the second question's content analysis of the open-ended questionnaire which was answered by the participants at the end of the research study and post-tests. As shown in figure 14, ten participants gave some examples

about the learned words through etymological and morphological vocabulary instruction but four participants were not able to provide examples (participant number 6, 12, 13, 14), “I don’t remember”, “I cannot remember”. It seems that they had not presence of mind at that moment. And from among these four participants with no presence of mind two students (6 and 13) stated that “If I see the word I can remember the meaning of it”.

Among the given examples “*prejudice, interface, distort, confrontation, consultancy, gimmick, handshake, hardship, rejoice, infrastructure, cyclone, downstream, optical*” were mentioned by the participants with 1 frequency ($f=1$). *optimist* with 2 frequency ($f=2$), *sophisticate* with 4 frequency ($f=4$) and *fast* (with the meaning of “not eating”) was among the learned words which was 5 times mentioned by the participants ($f=5$).

Effective factors in learning words through etymological and morphological vocabulary instruction were clarified by some participants. Eleven participants clarified the reasons why they would prefer using etymology as a strategy for learning. They discussed the “origin of words” and “the effectiveness of having knowledge about root of the words”, which is categorized in Figure 14.

According to Figure 14 among the stated views, one participant (number 3) claims that “knowing other forms of the word helped him to learn the new words he encountered”. The mentioned word by the participant (number 13) was “*suspicion*” and his knowledge about the other form of the word was “*suspect*” and he mentioned “I can remember the meaning of “suspicion” because I knew the meaning of “suspect” before”. Three times the importance of “*word root*” in learning new words was emphasised by the participants and the importance of “roots and affixation” was mentioned by the learners for four times. One of the participants (number 2) said “It is clear that knowing roots helps to learn words”. And for four times “familiarity with one part of the word” as an effective factor in learning new vocabulary was emphasised by the participants as one of participants (number 6) mentioned Knowing the “soph” in the word “sophisticated” and its relevance with “philosophy” helped me to remember the meaning of “sophisticated”...”. One of the

participants (number 9) claims that “I think it’s effective in learning written spelling...”

One participant reported that this strategy is good but he prefers other strategies, as well (participant number 6). And “gimmick” was one of the words with unknown origin that one of the participants (number 2) was able to remember and he said “Its origin was unknown that was interesting for me and made me think about its origin and now I can remember it now”.

As a whole, the responses show that the participants believe that etymological vocabulary instruction is a reasonable and logical strategy for learning words and expanding vocabulary of them.

CHAPTER V

DISCUSSION

5.1. Introduction

The previous chapter presented the findings of the data analysis. This chapter discusses the results and findings of the quantitative and qualitative data. Subsequent to overview of the study discussion of the findings in reference to research hypotheses are presented.

5.2. Overview of the Study

In our study the balance between genders of both groups (14 male and 10 female) shows that the results of the study could not be affected by this factor. And four Chi-square tests demonstrated that there were no significant differences between both groups' parental occupation status and education levels. Moreover, the MTELP revealed that both groups were the same in terms of their general English proficiency level. So, we had two groups which were almost equal from several perspectives.

The current study evaluated the effect of etymological and morphological vocabulary instruction on the non-native adult EFL learners' receptive/productive vocabulary knowledge, and their written spelling. Indeed, the purpose of this study was to observe the impact of etymological and morphological vocabulary instruction on adult B1 level EFL learners. Statistically analysed results and the open-ended questionnaire showed significant and positive effects of the etymological and morphological vocabulary instruction on the experimental group members' receptive/ productive vocabulary learning and their written spelling. Besides, in this section we are going to discuss the results according to the hypotheses of the study in association with meaningful learning and schema theory

as the theoretical frameworks of the study (Ausubel, 1968, Meiyun, 1999, Brown, 2002, Schmitt, 1997, Widdowson, 1983).

As we discussed before in review of literature of this study, by studying etymology of words it is believed that learners would be more successful in learning words. For example, some studies have been done by researchers like Pierson in 1989 about the importance of using etymology in teaching in the classroom through a qualitative review research, and Hutcheon et.al (2012) also discuss the importance of instruction through etymology. Similarly, Chatzisavvas (2015) argues the benefits of etymology in vocabulary development of Greek ESL students.

Ausubel, Novak, & Hanesian (1968) believe that being informed about the historical outlook and the changes in the forms of words in the English language might result in better understanding of the true spirit of learning English language and it may make the process more meaningful. Cognitivists look at learning as a mental and information processing, where the learner uses three different types of memory while learning, which are the sensory store, working memory (short-term memory) and permanent memory (long-term memory) respectively (Carroll, 2000). Sensations are received via the senses into the sensory store before processing. "The information persists in the sensory store for less than one second. The duration in short-term memory is almost 20 seconds, and if the information in short-term memory is not processed efficiently, it is not transferred to long-term memory for storage" (Ally, 2013). The transferred data to long-term memory depends on the depth and quality of processing in short-term memory. The deeper the processing, the more associations happens and the acquired new information shapes in memory. Transferred information from short-term memory is assimilated and accommodated in long-term memory. During assimilation, the data is changed to fit into existing cognitive structures. Accommodation occurs when an existing cognitive structure is modified to unite the new information (Anderson, 2008). In conclusion, it seems that etymological and morphological vocabulary instruction deepens the processing of new words and helps the newly learned words to transfer in the language learners' long-term memory.

Other possibly effective factor could be the linguistic knowledge of participants about the Turkish language, which is an agglutinated language and whose speakers are naturally familiar with the suffixation and roots of words, may have positively affected the participants' receptive, productive and written spelling through etymological vocabulary instruction however Tom S. Bellomo (1999) states that etymology could be considered an efficient word attack strategy disregarding the students' native language background.

5.3. Discussion of the Findings in Reference to Hypotheses and open-ended questionnaire

In this section, discussion of the findings will be presented by means of the hypotheses as the framework of the research study. Data analysis and findings which were explained in Chapter IV would be the basis for the interpretations of the findings.

Research Hypothesis 1

There is a significant difference between the pre-test and post-test scores of the control and experimental groups in regard with their receptive vocabulary knowledge after etymological and morphological vocabulary instruction.

The results of the study show that there are significant differences between pre-test and post-test results (scores) of the experimental and control groups in terms of receptive vocabulary knowledge. The findings indicate the outperformance of the experimental group members and the positive effect of etymological and morphological vocabulary instruction in vocabulary learning of adult EFL learners. During the two-month etymological and morphological vocabulary instruction the experimental group members learned new vocabulary through the etymology of words. The control group members followed the school conventional method and probably students had their own strategies for learning words. And it was observed that etymological and morphological vocabulary instruction strategy was quite

helpful in the experimental group participants' vocabulary learning. According to the results it is revealed that the control group members had a slight progress as the mean of the receptive vocabulary pre-test score of the control group members increased from 42.65 to 46.65 in their post-test. The same pre-test mean of experimental group was 42.5 which increased to 79.79 in their post-test results. So, according to the Mixed ANOVA test results, the alternative hypothesis (H1) of the study was supported and there was a significant difference between the pre-test and post-test scores of the control and experimental groups in regard with their receptive vocabulary knowledge after etymological and morphological vocabulary instruction. The superficial improvement of the control group might be attributed to their conventional school instruction or their own effort for vocabulary learning. And the larger increase in the mean of post-test result of experimental group could be the effect of etymological and morphological vocabulary instruction. In line with our study it is believed that etymological instruction facilitates vocabulary learning (Pierson, 1989, Matthews, 2001, Weber, 2007, Chatzisavvas 2015). And Pierson (1989) discussed the importance of using etymology in teaching English through a qualitative review research and some researchers such as Chatzisavvas (2015) argued the profits of etymology in vocabulary development.

In parallel with our study, Bowers and Cooke (2012) believed that Morphological Instruction could be understood both through morphology and etymology since learners not only are required to realize word change but also the word meaning. Etymology provides them with a meaning and it establishes a link to word acquisition, cognates, and history, and in a research study, Egecioglu (1996) carried out a study with junior students of English language of a public university in Turkey and the results revealed that teaching morphology to language learners is an effective tool for learning vocabulary. Integrating a semester-long morphological instruction into the specially designed reading writing course for three hours a week, showed that, if the learners know the Greco-Latin word parts, they not only remember the words and terms better, but also guess the word meanings more accurately. Besides, Bellomo (2005, 2009), in his study with a college preparatory reading class students at a school in the United States revealed this fact that both

native and foreign English speaker students lack vocabulary knowledge level necessary for higher education. His findings indicated that language learners recorded paramount progress by getting explicit instruction in Latin word parts and vocabulary.

In another study, Saeidi and Mirzapour (2013) studied the any relationship between morphological knowledge and listening comprehension competence of Iranian EFL learners. In their study, 40 students (25 female and 15 male) majoring in ELT participated and were randomly divided into control and experimental groups with 20 participants in each group. Four short listening texts were utilised as the pre-test that had 30 tokens of words with morphemic structures. The results of the pre-test showed there was no significant difference between the two groups. Then, four one-hour sessions were held for the experimental group as the treatment sessions. Finally, four short listening passages were used as the post-test. The results showed a significant difference between the two groups and revealed a significant difference between morphological awareness and their listening comprehension skill.

Research Hypothesis 2

There is a significant difference between the pre-test and post-test scores of the control and experimental groups in regard with their productive vocabulary knowledge after etymological and morphological vocabulary instruction.

In the methodology section of the study we found out and reported on that there was no statistically significant difference between pre-test scores of the experimental and control group through t-test in regards with their productive vocabulary knowledge. And in Chapter IV the significant difference between the post-test scores of the experimental and control group was reported through mixed ANOVA test.

As reported in Chapter IV productive vocabulary of control group showed a slight increase and this increase might be attributed to their conventional school instruction. However, the results of the experimental group showed a dramatic

improvement as the mean of their productive vocabulary score increased from 42.500 to 79.79 which clearly indicates that the experimental group outperformed the control group. According to the Mixed ANOVA test results the alternative hypothesis (H1) of the study was supported and there was a significant difference between the pre-test and post-test scores of the control and experimental groups in regard with their productive vocabulary knowledge after etymological and morphological vocabulary instruction. The outcome results from this part of the study prove that a larger receptive vocabulary shows more productive vocabulary size (Webb, 2008).

In line with similar studies Pierson (1989) claims that etymology and its instruction can provide students with purposeful linguistic principles and information for the learners. Meaningful learning that is sought by educational psychologists could be offered by etymology, i.e. investigation of the origin of words. This is a kind of learning associated with prior learning and could be more generalized and maintained that makes it superior compared to the uncomplicated rote learning of vocabulary. Feasible explanations are provided about the way that etymology might become a part of a second-language program, which is learned through the writer's own experience. Moreover, Zolfagharkhani and Moghadam (2011) studied The Effect of Etymology Instruction on Vocabulary Learning of Upper-Intermediate EFL Persian Learners and findings show that Persian learners received positive results from etymological instruction. These studies illustrate that etymological instruction does have an effective benefit in learning vocabulary in English language. Moreover, Stockwell and Minkova (2001) declared that etymology could be helpful for students to enlarge their vocabulary size.

In a similar study, Golaghaei and Kakolian (2015) studied the effect of visual and etymological treatments on learning idioms among intermediate English language learners. From among 116 learners they have selected seventy-nine students of an English school based on their performances on the Longman complete course for the TOEFL test. They then assigned the students into three experimental groups. At first, a pre-test of idiomatic expressions that had 48 idiomatic expressions (items) was conducted to all of the participants. During the

instructional period, the groups were instructed, a group of abnormally decomposable idioms through various treatments, namely, etymological, visual, and a combination of visual-etymological elaboration. At the end of the instructional period a post-test which was used as the pre-test. The results of their data analysis revealed that the etymological treatment was more effective than visual aids on learning idioms and the visual-etymological treatment was the most effective one.

Likewise, Soleimani and Mohammadi (2015) studied the effect of the etymology of an additional language on EFL learners' vocabulary retention and found significant relationship and effect of an additional language (Arabic Literature) on vocabulary retention of 60 EFL learners.

According to the open-ended questionnaire most of the participants used morphological analysis of words for learning or remembering vocabularies and it seems that knowledge about language origin of a word from other languages like Latin, Greek, French or other languages has not a direct effect on learning new words. In line with this idea that LLS are unconscious or conscious processes of which learners apply during learning a language (Richards and Schmitt, 2002, p. 515), it seems that knowledge about the origin of a word subconsciously affect the learning process of a new word or just it could be a tool for manipulating data for transferring it from the short-term memory to the long-term memory.

Research Hypothesis 3

There is a significant difference between the pre-test and post-test scores of the control and experimental groups in regard with their written spelling skill after etymological and morphological vocabulary instruction.

In regards to written spelling, the effect of etymological and morphological vocabulary instruction on written spelling of the participants in both groups was scrutinised, it can be seen from the statistical analysis that the mean of the control group increased slightly from 11.70 in the pre-test to 16.20 in the pos-test while the mean of the experimental group shows an increase from 11.04 in the pre-test to 35.83 in the post-test which can undoubtedly be interpreted as a statically significant difference between the post-test results of both groups. Besides,

according to the Mixed ANOVA test results the alternative hypothesis (H1) of the study was supported and there was a significant difference between the pre-test and post-test scores of the control and experimental groups in regard with their written spelling skill after etymological and morphological vocabulary instruction. As one of the students said “I think etymological and morphological vocabulary instruction is effective in learning written spelling” it reveals the awareness of the participants about the importance of etymological and morphological vocabulary instruction in their written spelling quality after etymological and morphological vocabulary instruction.

We can conclude that getting familiar with etymology and morphology of words, which covers affixation of words as well, positively affects written spelling. Most probably, when learners become familiar with other forms of words, morphological combinations or analysis of word parts through active involvement in learning vocabulary, it results in accurate written spelling of words.

In line with our study, a research study in California, the USA, studied the effect of morphological instruction on improving the spelling, vocabulary, and reading comprehension of high school English language learners. The study involved 140 English language learners (15-17 years of age). Multivariate and bivariate analyses indicated that each of the ANCOVAs and *t*-tests were found to be of statistical significance in reading, vocabulary, and written spelling (Diaz, 2009). Besides, Hutcheon et.al (2012) argued the importance of written spelling instruction through etymology. Rothstein & Rothstein (2009) claims in case a proper understanding and a strong relationship between phonology and grammar, spelling, etymology, and morphology are found, students could be provided with a connection within and a wholeness of their second language. By realizing and elaborating on the complex nature of spelling, students might be provided with historic information and it is also possible to assist them to recall the “rules” regarding what seems to be “inconsistent spelling”.

Research Questions

What are the views of experimental group members about the etymological and morphological vocabulary instruction after the treatment?

Results of this question revealed that participants were in favour of etymological and morphological vocabulary instruction. They generally liked this strategy by claiming that it was “interesting”, “great strategy” and “very good”. Popularity of etymological and morphological vocabulary instruction is obvious in the given answer to the open-ended questionnaire.

The participants, who were in favour of the etymological and morphological vocabulary instruction strategy, liked the strategy in general and believed that “roots and affixation”, “meaning of word parts” and “other forms of the same word” have helped them in learning new words.

These positive views are in agreement with quantitative data results which revealed the effectiveness of etymological and morphological vocabulary instruction in receptive/productive vocabulary learning, and improving written spelling skill of the learners.

CHAPTER VI

CONCLUSION

6.1. Introduction

This chapter as the final chapter of the study presents conclusions drawn from the study. Then, implications of the study are discussed and finally, suggestions for further study are presented.

6.2. Conclusion

This study aimed at investigating the impact of using etymological and morphological vocabulary instruction on non-native adult language learners' receptive/productive vocabulary knowledge and their written spelling skill. The results obtained from both qualitative and quantitative data and their comparison determined that both gathered data showed similar results. In other words, both data results support each other.

We can conclude that according to the theoretical framework, meaningful learning has helped the learners in learning of new words and according to the schema theory every new word is stabilized and learned through connecting data with previously stored data in the brain practically. According to the results, it seems that the learners who were exposed to the etymological and morphological vocabulary instruction spent less effort to learn and memorize the words. Although the allocated time for words instruction for the experimental and control groups was the same in both classes, the participants in the experimental group were observed to have outscored the control group participants. This may obviously be interpreted as profound benefits of learning new words through etymological vocabulary instruction.

Etymological and morphological vocabulary instruction could be attractive to most of learners, especially adult learners in our case, by explaining history of

words origin and discussing other forms of a word in the English teaching classes. During etymological and morphological vocabulary instruction learners' curiosity about new words increased. The more concentration on the vocabulary could mean the more learning and recalling to the learners in return. The learners in the experimental group were also very insistent on learning the other words' etymology besides the planned vocabulary intended to be taught through etymological and morphological vocabulary instruction. Indeed, we have observed and concluded that there was an increasing interest to learn more words using this vocabulary learning strategy.

In regards with the qualitative data obtained by the open-ended questionnaire, the first question of the open-ended questionnaire asks the general view of the experimental group's participants about the etymological and morphological vocabulary instruction while the second question encourages the participants to give some examples about the words learned through etymological and morphological vocabulary instruction. When the given answers were scrutinized, it was revealed that the majority of the participants were in favour of learning vocabulary through etymological and morphological vocabulary instruction. And this is in parallel with the quantitative data results.

To sum up, the obtained quantitative data result was in agreement with the qualitative data result which shows that etymological and morphological vocabulary instruction was beneficial and efficient for English language learners. It seems that meaningful learning is really effective and interesting for the learners. To conclude, the experimental group participants highly benefited from the explicitly taught etymological vocabulary instruction and it seems that they were able to rematch the new data in their schema by meaningful learning.

6.3. Implications of the Study

Implications of this study are categorised in three subsets. The first subset is the implication of study for language learners. The second subset covers this

study's implication for ELT instructors. The third subset gives some implications for course book writers.

- **Implication of study for language learners**

Non-native adult English language learners, whose mother tongues are not English, encounter a great difficulty in learning and memorizing the huge number of English words. English is a language that has borrowed thousands of words from other languages and linguistically has a lot of words which can be traced etymologically and can be morphologically scrutinized and analysed.

The difficulty of learning vocabulary, to some extent, emerges from negligence or lack of familiarity with the etymological or morphological units as well. Dividing and analysing words into parts and studying the story behind them could be an advantage and a big help for learners to learn or memorize the new words. Moreover, language learners' time limitation for learning thousands of new words forces them to make a big deal of efforts. So, learners always look for effective strategies to learn new words.

- **Implication for ELT instructors**

Vocabulary instruction through etymology and morphology should have continuity, and greater emphasis should be put on it by ELT instructors. The teaching should be accompanied by specific textbooks or booklets which present building of vocabulary and their etymology, morphology and affixation for assisting students to learn more easily.

Teachers can use etymological dictionaries books or online etymology dictionaries to make learning words more interesting, meaningful and attractive to the English language learners. This strategy should be among the other vocabulary strategies and should be given enough attention and importance on instructors' syllabuses. It is recommended that instructors obtain more information about the etymological and morphological vocabulary instruction and its use in the classes.

Finally, teachers should not ignore the importance of this strategy and it should be considered by English language teachers to be employed in the curriculum design and syllabi of their English language teaching courses.

- **Implications for course book writers**

English course book designers, especially at intermediate and upper levels, should be aware of the importance and benefits of vocabulary learning through etymological and morphological vocabulary instruction and they should try to improve the quality of the English course books by explicitly providing words' etymology and morphology in the glossary section or other suitable sections of the published books.

6.4. Suggestions for further study

This research study aimed to find out the effect of etymological vocabulary instruction on B1 adult English language learners' receptive/productive vocabulary learning and their written spelling. There could be a vast scope for researching on etymological and morphological vocabulary instruction by increasing the number of participants, the period of instruction, applying the same research in different settings or on participants with different native language backgrounds. Moreover, only affixation or morphology as an instruction strategy or just etymology could be applied in other research studies. Finally, researchers can apply the same experiment with different age groups or even with native language learners.

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APPENDICES

Appendix 1. Demographic Information

Dear students please fill the blanks sincerely

Full name:	
Age:	
gender: M / F	
Field of study:	
Native Language:	
Email Address Or GSM:	
Your father`s education	
Your father`s job	
Your mother`s education	
Your mother`s job	

Appendix 2. Pre-tests and Post-tests

Please answer these questions.

Full Name:

Q 1	What do you know about this word “augmented ”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 2	What do you know about this word “sophisticated”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 3	What do you know about this word “ventilation ”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 4	What do you know about this word “entrepreneur ”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 5	What do you know about this word “sculptures ”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 6	What do you know about this word “complemented ”.
A	I don't know ☐
B	I am not sure, but I think it means (write

	Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 7	What do you know about this word “readjust ”.
A	I don’t know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 8	What do you know about this word “intersection”.
A	I don’t know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 9	What do you know about this word “mutinous ”.
A	I don’t know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 10	What do you know about this word “prospectors ”.
A	I don’t know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 11	What do you know about this word “elegant ”.
A	I don’t know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 12	What do you know about this word “deforestation ”.
A	I don’t know ☐
B	I am not sure, but I think it means (write

	Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 13	What do you know about this word “conservationist ”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 14	What do you know about this word “relic ”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 15	What do you know about this word “hardship ”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 16	What do you know about this word “confrontation ”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 17	What do you know about this word “hieroglyph ”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 18	What do you know about this word “infuriate ”.
A	I don't know ☐
B	I am not sure, but I think it means (write

	Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 19	What do you know about this word “Advocate”.
A	I don’t know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 20	What do you know about this word “revolt ”.
A	I don’t know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 21	What do you know about this word “indigenous”.
A	I don’t know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 22	What do you know about this word “deliberately”.
A	I don’t know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 23	What do you know about this word “infrastructure ”.
A	I don’t know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 24	What do you know about this word “squander”.
A	I don’t know ☐
B	I am not sure, but I think it means (write

	Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 25	What do you know about this word “Dwindle”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 26	What do you know about this word “reputation”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 27	What do you know about this word “suburbia”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 28	What do you know about this word “consultancy”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 29	What do you know about this word “desalination ”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 30	What do you know about this word “deplore ”.
A	I don't know ☐
B	I am not sure, but I think it means (write

	Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 31	What do you know about this word “orator”.
A	I don’t know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 32	What do you know about this word “predictability”.
A	I don’t know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 33	What do you know about this word “attribute”.
A	I don’t know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Q 34	What do you know about this word “articulate”.
A	I don’t know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

Section 2

Q 1	What do you know about this word “illustration”.
A	I don’t know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 2	What do you know about this word “interface”.
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A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 3	What do you know about this word "ventilation".
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 4	What do you know about this word "entrepreneur".
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 5	What do you know about this word "injustice".
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 6	What do you know about this word "scratch".
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 7	What do you know about this word "Exhausted".
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)

C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 8	What do you know about this word “downstream”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 9	What do you know about this word “inconvenient”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 10	What do you know about this word “compensation”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 11	What do you know about this word “rejoiced”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 12	What do you know about this word “cyclones”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 13	What do you know about this word “contaminant”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 14	What do you know about this word “incompetent”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 15	What do you know about this word “accommodate”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 16	What do you know about this word “descendant”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 17	What do you know about this word “distort ”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 18	What do you know about this word “outstretch”.
A	I don’t know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 19	What do you know about this word “distract”.
A	I don’t know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 20	What do you know about this word “fascination”.
A	I don’t know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 21	What do you know about this word “troublesome”.
A	I don’t know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 22	What do you know about this word “thrive ”.
A	I don’t know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 23	What do you know about this word “promptness”.
A	I don’t know ☐
B	I am not sure, but I think it means (write

	Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 24	What do you know about this word “sculpture ”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 25	What do you know about this word “regulation ”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 26	What do you know about this word “prescriptive ”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 27	What do you know about this word “plummet”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 28	What do you know about this word “impartial”.
A	I don't know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)

D	I can use this word in a sentence.....
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Q 29	What do you know about this word “determination”.
A	I don’t know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 30	What do you know about this word “daunting ”.
A	I don’t know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 31	What do you know about this word “commodities”.
A	I don’t know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Q 32	What do you know about this word “traumatic”.
A	I don’t know ☐
B	I am not sure, but I think it means (write Synonym or Translation)
C	Surely; it means (Synonym or Translation)
D	I can use this word in a sentence.....

Section 3 Spelling

Fill in the gaps with the correct spelling while dictation.

1. I prefer to have _____ lenses instead of glasses.
2. Japan is an _____ country.
3. The clouds were a _____ of rain.
4. He is well-known in our _____.

5. He _____ that I should take you too.
6. I _____ your help.
7. I dispelled their _____.
8. We don't know if that is _____ or if the catch is increasing dramatically.
9. Don't _____ the child in front of the guests.
10. Lemurs were moving _____ everywhere.
11. He wanted to make the country a _____ of peace and prosperity.
12. He has intimate _____.
13. The _____ of 19th-century heavy plant machinery.
14. He was _____ about the health of his son.
15. _____ engineering is the primary branch of engineering.
16. Territories occupied by the various _____ and states throughout the history of China.
17. A _____ is a character of the ancient Egyptian writing system.
18. You shouldn't _____ your teacher when he is talking.
19. Here are the 100 most often _____ English words.
20. Most of us understand what it is like to have an emotional connection with a cherished _____.
21. A _____ is a unique or quirky special feature that makes something "stand out" from its contemporaries.
22. An unforgettable _____.
23. _____ of police in violent situations.
24. Due to changing _____, we cannot decide.
25. The lowest _____ of the ocean.
26. We need an _____.
27. Turkey's economy _____ immediately.
28. A _____ enmity between two tribes.
29. They respect their _____.
30. _____ in eating can cause to obesity.

Paused dictation key

1. I prefer to have **inconspicuous** lenses instead of glasses.
2. Japan is an **industrialised** country.
3. The clouds were a **guarantee** of rain.
4. He is well-known in our **neighbourhood**.
5. He **emphasised** that I should take you too.
6. I **appreciate** your help.
7. I dispelled their **suspicion**.
8. We don't know if that is **sustainable** or if the catch is increasing dramatically.
9. Don't **embarrass** the child in front of the guests.
10. Lemurs were moving **ghostly** everywhere.
11. He wanted to make the country a **haven** of peace and prosperity.
12. He has intimate **colleagues**.
13. The **redundancy** of 19th-century heavy plant machinery.
14. He was **anxious** about the health of his son.
15. **Aerospace** engineering is the primary branch of engineering.
16. Territories occupied by the various **dynasties** and states throughout the history of China.
17. A **hieroglyph** is a character of the ancient Egyptian writing system.
18. You shouldn't **interrupt** your teacher when he is talking.
19. Here are the 100 most often **mispronounced** English words.
20. Most of us understand what it is like to have an emotional connection with a cherished **possession**.
21. A **gimmick** is a unique or quirky special feature that makes something "stand out" from its contemporaries.
22. An unforgettable **spectacle**.
23. **Intervening** of police in violent situations.
24. Due to changing **circumstances**, we cannot decide.
25. The lowest **regions** of the ocean.
26. We need an **incinerator**.
27. Turkey's economy **thrived** immediately.
28. A **devastating** enmity between two tribes.
29. They respect their **customs**.
30. **Excess** in eating can cause to obesity.

Appendix 3. Lesson Plan

Class: Experimental Group		Date : 2015.04.13
Content: Introduction to Etymological Instruction		Duration: 45 minutes
Proficiency Level of Participants		Students are in B1 level according to the placement test of their school.
Topic		Introduction to Etymology, morphology and affixation
General Aims		Enabling learners getting familiar with the strategy of learning through etymology and its importance in retention and fast learning.
Objectives of sessions	Linguistically	Familiarizing learners with etymology, its components and raising awareness of learners in learning process
	Lexically	Teaching new words (roots, morphemes and affixation) plus guessing words meaning from the components in a fast and permanent way.
	Expectation	Lessening rote learning of vocabulary, Getting them more attentive to morphemes, using schema in learning new words to enable learners not only to materialize their receptive and productive vocabulary learning fast but also to improve their written spelling skills better than before.
Sample words taught		breakfast, curfew, widow
Problems		Students may not be familiar with roots or morphemes or may not recall them
Solutions		Providing extra examples of words sharing the same roots or morphemes
Tools for instruction		a) A multi-touch TV computer b) whiteboard c) Course Book: Life Book 3 (by Helen Stephenson et.al). d) Common list of prefixes, suffixes, Latin and Greek roots in English.
Resources		Online Etymological and morphological dictionaries
Duration of		Three 45 minute-sessions per week; 8 weeks in total
Words		All words in pre-test in addition to words that students asked during class time

Appendix 4. A Sample Handout

Words	Origin	V-P-PP	Other forms	affixation
Augmented [increase, enhance- musical instrument]	Old French <i>augmenter</i>	V1-Augment (Ag`ment) P and PP- Augmented	Augmenter Augmenting Augments	+er (n) +ing (v-n) + s (plural)
sophisticated[i mpure; no longer simple or natural]	soph [of Greek origin, meaning: wisdom] 15 th century	V1- sophisticate (si`fistikeyd) P and PP- sophisticated	sophisticates sophisticating sophisticatedly	+s +ing (v-n) + adv
Interface[inter+ face] To connect or Relate	Medieval Latin Greek 1882	V1-Interface (`intirfeis) P and PP- Interfaced	Interfacer Interfaces Interfacing Interfacial	+er +s (v) + n (collar fabric) +ial (adj)
illustrate [light up, shed light on]	Latin Illustrates 1520	V1-illustrate (`ilistreit) P and PP- illustrated	illustrates illustrating illustration illustrative illustrations	+s +ing (v-adj) + n +ive (adj) +tion (n)+s (p)
Dwindle [to become steadily less]	Middle English From dwine=waste away 1596	V1-dwindle (`duvindl) P and PP- dwindled	dwindles dwindling	+s +ing (v-adj)
Optimist [person thinks the best possible thing will happen, and hopes for it]	French <i>Optimiste</i> 1759 <i>Opt=</i> <i>see, light</i> <i>optical</i>	adj (`aptimist)	optimists optimism optimistic	+s (plural) +ism (n) +ic (adj)

Words*	Origin	V-P -PP	Other forms	affixation
inconspicuous [<i>in-</i> "not, opposite of, without"] <i>conspicuous</i> "visible, open to view, striking," from <i>conspicere</i> "to look at, observe, see, notice,"	Latin <i>inconspicu</i> <i>us</i> 1620	adj (`inkɪnsɪkɪju vis) -----	In+conspicuously in+conspicuousnes s	in+,+ly +ness (n) (eg; fit+ness)
Gimmik [a device for controlling gambling apparatus]	unknown	n (`gɪmɪk)	gimmiks	+s (plural)

Appendix 5. Open-ended Questionnaire

Katılımcı adı ve Soyadı:

Sevgili Öğrenciler,

Doktora çalışmam için sizlerle beraber yapmış olduğumuz sözcük öğretimi seansları ile ilgili aşağıda bulunan iki soruyu olabildiğince detaylı olarak cevaplamanızı rica ederim.

Taher Mahmoudi

Dear Students,

Please answer the following questions in detail about the vocabulary training sessions that we have done with you for my doctoral studies.

1. Sözcük öğretimi seanslarında yaptığımız sözcük öğretimi ile ilgili genel görüşlerinizi belirtiniz.

Please indicate your general opinions about the vocabulary learning strategy of our teaching sessions.

2. Şu ana kadar size uyguladığımız sözcük öğretme yöntemi ile öğrenmiş olup hatırladığınız sözcüklerden birkaç tane sıralayarak bunların hatırlanması ve kullanımında en etkili olduğunu düşündüğünüz bir kaç neden belirtiniz.

Please give some examples of the words you have learned and used in practice so far by this method and specify a number of reasons you think have been most effective by applying this strategy of learning words.

Appendix 6. Common list of prefixes, suffixes, Latin and Greek roots in English.

Rank	Prefix	Definition	Sample Words	Percentage of All Prefixed Words
1	un	not	unhappy, unafraid, undefeated	26
2	re	again, back	recede, regress	14
3	in, im, il,	not	invisible, impolite, illegal	11
4	dis	not	dislike, disengage, discomfort, disentangle	7
5	en, em	in, into, cover	entangle, empathy	4
6	non	not	nonfiction, nonstop, nonsense, nonviolent	4
7	in, im	in	incorporate, include, inhale, infect	3
8	over	above, beyond	overdue, overpriced, overactive	3
9	mis	wrongly	misbehave, misconduct, mistake	3
10	sub	under, beneath	submarine, subject, subhuman	3
11	pre	before, prior	precede, predict, preview, prehistoric	3
12	inter	among	international, intervene, interstate, Internet	3
13	fore	before, in front of	forewarn, forearm, forenoon, foreshadow	3
14	de	downward, undo	descend, decrease, degrade, depart	2
15	trans	across	transport, transatlantic, transfer, translate	2
16	super	above, beyond	superman, superior, supernatural, supervise	1
17	semi	half	semiannual, semicircle, semiconscious	1
18	anti	against, opposed	antiwar, antisocial, antifreeze, antislavery	1
19	mid	middle	midsemester, midnight, midway, midsummer	1
20	under	too little	underpaid, underfed	1

Rank	Suffix	Explanation	Sample Words
1	s, es	plural	boys, boxes
2	ed	past tense	wanted, tested
3	ing	present tense	playing, singing
4	ly	characteristic of	friendly, loudly
5	er, or	someone who does	teacher, singer, doctor, actor
6	ion, tion, ation, ition	state or quality of	companion, champion, attention, caution, inspiration, starvation, intuition
7	able, ible	is, can be	likeable, comfortable, terrible
8	al, ial	action or process; relating to	refusal, revival, natural, royal, commercial, remedial
9	y	characterized by, being or having, state or quality of	funny, fruity, sunny
10	ness	state of being	kindness, happiness, goodness
11	ity, ty	state or quality of	necessity, civility, loyalty, honesty, unity
12	ment	action or process	enjoyment, experiment, government, development
13	ic	having characteristics of	comic, historic, public
14	ous, eous, ious	like, full of, state or quality of	joyous, nervous, gracious, religious, righteous
15	en	to make; adjective suffix; verb suffix	strengthen, fasten, weaken; stolen, chosen; eaten, frozen
16	er	one who	teacher, painter, seller, shipper
17	ive, ative, tive	inclined to	active, negative, positive, talkative,
18	ful	full of, tending toward	joyful, fearful, careful, thoughtful, cupful,
19	less	without	thoughtless, tireless, joyless, ageless, careless
20	est	most	smartest, closest, lightest, smallest, fastest

Root	Meaning	Origin	Examples
aud	hear	Latin	audiophile, auditorium, audition
astro	star	Greek	astrology, astronaut, asteroid
bio	life	Greek	biography, biology
dict	speak, tell	Latin	dictate, predict, dictator
geo	earth	Greek	geology, geography
meter	measure	Greek	thermometer, barometer
min	little, small	Latin	minimum, minimal
mit, mis	send	Latin	mission, transmit, remit, missile
ped	foot	Latin	pedestrian, pedal, pedestal
phon	sound	Greek	phonograph, microphone, phoneme
port	carry	Latin	transport, portable, import
scrib, script	write	Latin	scribble, manuscript, inscription
spect	look	Latin	inspect, spectator
struct	build, form	Latin	construction, destruct, instruct

CURRICULUM VITAE

Taher MAHMOUDI

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Taher MAHMOUDI was born in a small town in Malekan, Iran. He took his BA and MA degree from Islamic Azad University of Maragheh in English Language Teaching in 2011. He started teaching English as a foreign language at some private English schools in Iran. Simultaneously he tried to learn Turkish and taught Turkish to Iranians for a short time. He got acceptance from Çukurova University and started his Ph.D. in the same field of study in 2011.

He worked at Özgun Trade firm and Adana Court as a multilingual translator and interpreter for 1 year. In 2015 he was employed as an English teacher at Turkish American Association English School in Izmir. He worked as a Persian language instructor at Turkish American Association schools, as well. He continued his carrier as a coordinator at three branches of the same school later.

He started working as an English teacher at British Culture Language schools in Izmir in 2016 and resigned in 2017.

His scopes of interest are translation, teaching languages, applied linguistics and contrastive linguistics.