THE EFFECTS OF PRESENTING DIFFERENT TYPES OF VOCABULARY CLUSTERS
ON VERY YOUNG LEARNERS' FOREIGN LANGUAGE LEARNING

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ÖZET

Bu çalışmadaki temel amaç küçük yaş grubu öğrencilerinin yabancı dil sözcükler öğrenirken en çok hangi sözcük gruplama çeşidinden faydalandığını bulmaktır. Bu çalışmada üç çeşit sözcük grubu incelenmiştir; anlamsal, konusal ve bağlantısız. Ayrıca bu üç sözcük gruplama çeşidinin yabancı bir dildeki sözcükleri hatırlama üzerindeki anında ve gecikmeli etkilerine ışık tutmak amaçlanmıştır. Bu amaçları araştırmak için niceliksel araştırma yöntemleri (anında ve gecikmeli hafıza testleri) kullanılmıştır.

Amaçlara uygun olarak 51 küçük yaş grubu öğrencisi katılımcı olarak kullanılmıştır. Üç farklı çeşit sözcük grubundaki sözcükleri belirlemek için ön test yapılmıştır. Böylece çalışmada kullanılacak sözcüklerin hiç birinin katılımcılar tarafından bilinmemesi sağlanmıştır. Katılımcılara her sözcük grubunun öğretiminden hemen sonra anında hafıza testi yapılmıştır. Ayrıca her sözcük grubu için gecikmeli hafıza testleri de üç günlük tekrarlardan sonra yapılmıştır.

Araştırmanın niceliksel veri sonuçlarının analizleri yabancı dildeki sözcüklerin farklı gruplanma çeşitlerinde sunumunun, yabancı dil öğrenen küçük yaş grubu öğrencilerinin sözcükleri hatırlaması üstünde önemli ölçüde bir etkisi olduğu ortaya çıkmıştır. Sonuçlar katılımcıların yabancı dil sözcükleri bağlantısız bir şekilde gruplandığında önemli ölçüde daha fazla sözcük hatırladıklarını göstermiştir. Ek olarak, katılımcılar yabancı sözcükleri konusal gruplamada anlamsal gruplamadan önemli bir farkla daha çok hatırlamışlardır. Anlamsal gruplamanın yabancı dil öğrenen küçük yaş grubu öğrencilerinin mühim derecede az sözcük kazanıma sebep olduğu sonuçlardan açıkça görülmektedir. Ayrıca, anında ve gecikmeli hafıza testlerinin sonuçları karşılaştırıldığında, yabancı dil öğrenen küçük yaş grubu öğrencileri için hem kısa hem uzun süreçte sözcük gruplama çeşitlerinin etkilerinin varlığı ve aynı olduğu ortaya

çıkmı tır. Son olarak, katılımcıların sözcük gruplama çe itleri gözetmeksizin tekrardan önemli derecede faydalandıkları kanıtlanmı tır.

ABSTRACT

The main aim of this study was to find out which type of vocabulary cluster very young learners benefit from the most while learning foreign language vocabulary. Three types of clusters were investigated in this study; semantic, thematic and unrelated. The study also aimed at shedding light on the effects of these three vocabulary clusters on the immediate and delayed recall of foreign language vocabulary. Quantitative research methods (immediate and delayed recall tests) were used to explore the aims.

In accordance with the aims, 51 very young EFL learners participated in the study. A pre-test was administered to determine the target words in the three clusters so that all target words were new to all participants. The participants received immediate recall tests immediately after the instruction of L2 words in each cluster. Delayed recall tests were also administered for each cluster after three days of reviews of the words in the clusters. It took three weeks to complete the data collection.

The analysis of the quantitative data results of the study revealed that the presenting L2 words in different type of clusters have a significant effect on very young EFL learners' L2 vocabulary retention. The results showed that the subjects remembered significantly more L2 words when the words were grouped in unrelated clusters. In addition, the subjects recalled significantly more L2 words in the thematic clusters than semantic clusters. It is clear from the results that grouping L2 words in semantic clusters caused significantly lower gains of L2 vocabulary. Moreover, when immediate and delayed recall test results were compared it was revealed that in both long and short term, the effects of clusters types were present and the same for very young EFL learners. Lastly, it was also proved that very young EFL learners benefitted significantly from reviews regardless of the cluster types.

CHAPTER I

INTRODUCTION

Learning a second or a foreign language includes learning different aspects of the language such as vocabulary, phonology and grammar. During the 1940s-1960s, grammatical and phonological aspects were emphasized and practiced in the classrooms because of the linguistic theories which were thought to be valid at that time (Judd, 1978). Vocabulary was not given necessary importance. However, during the late 1970s and the early 1980s vocabulary gained more importance. Since then, it has been a popular field in foreign and second language learning/teaching studies (Coady & Huckin, 1997).

Vocabulary is an essential part of second language learning and provides many advantages to second language (L2) learners (Hippner-Page, 2000). To exemplify, according to Lynch (1996), acquiring vocabulary is a vital process in second or foreign language learning as it fosters learners' comprehension and can serve as a good step to make progress in language learning. With the growing interest in the studies of teaching and learning L2 vocabulary, various topics are investigated one of which is the organization and presentation of L2 vocabulary (Nation, 2001; Schmitt, 2000).

When considering the organization and presentation of L2 vocabulary, many researchers started to explore the effectiveness of grouping words in semantic clusters (Beck & Perfetti & McKeown, 1982; Gairns & Redman,1986; Seal, 1991). Though supported by several theories, teaching words in semantic clusters was claimed to impede learning (Tinkham 1993, 1997). After negative effects of semantic clusters were supported with empirical findings and theories such as "distinctiveness hypothesis" and "inference theory", many studies which compare the effects of semantic and unrelated clusters were conducted (Hunt & Elliot, 1980; Tinkham, 1993; Waring, 1997; Erten & Tekin, 2008). Besides these clusters, presenting L2 words in a thematic cluster was suggested and studies were conducted to compare it with the other clusters (Tinkham, 1997; Waring 1997).

However, the studies stated above gave conflicting results. As a result, more research is needed to contribute to this area.

This study aims to address the issue of different vocabulary clusters' effects while learning L2 vocabulary with very young EFL learners. Furthermore, it investigates immediate and delayed recall of L2 words in different clusters. As learning vocabulary is a vital step for very young learners when learning a foreign or second language, the results of this study will help foreign and second language teachers, ESL/ EFL course book writers, curriculum specialists, and ESL/EFL programme planners not only in organizing L2 vocabulary lessons but also learning about very young learners' nature and preferences of learning L2 vocabulary.

Purpose Of The Study

The starting point of the present study depends on my four years of experience in teaching English as a foreign language (EFL) to very young learners. Many EFL/ESL course books for very young learners such as "Cheeky Monkey" published by Macmillan, "My First English Adventure" by Longman, "Cookie and Friends" by Oxford University Press, are divided into units. For example, in a unit called "jungle animals" words like "tiger", "lion" and "crocodile" are presented together. It can be concluded that course books direct foreign/second language teachers to present L2 words in semantic clusters. However, while teaching L2 words, I have noticed that certain words are more difficult to learn than other words among students. For example, "tiger" and "lion", "shirt" and "jumper" need more trials to be remembered by the students. Since there are various findings about L2 vocabulary clusters and there is no study on this topic with very young learners in the field, the main purpose of this study is to explore very young learners' preferences of vocabulary clusters while they are learning a foreign / second language vocabulary. In addition, this study aims to explore the effects of different vocabulary clusters on not only immediate but also delayed recall of L2 vocabulary and find out if there is a difference in very young EFL learners' choice of vocabulary clusters.

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Research Questions

The following research questions have been developed for this study:

1. Does presenting second language vocabulary in different clusters have any effects on learning and retention of the target L2 words by very young learners of English?

2. Are there any differences between the immediate and delayed recall responses among the three vocabulary clusters? If so, what are they?

Significance Of The Study

Vocabulary learning in a second or foreign language is very important for learners' comprehension, self-expression, and communication in the target language. Therefore, a good amount of vocabulary is needed for successful communication in the four skills (Hippner-Page, 2000, p. 7). However, foreign and second language teachers may not have enough time to include all necessary vocabulary in their lessons. As a result, it is important to know about the most beneficial way to group L2 words so that students can learn more L2 words more effectively.

At schools or courses, when being exposed to L2 target vocabulary, learners are generally taught L2 words in semantic clusters. In addition, most of the course books in the market are also designed to present L2 vocabulary in this grouping format. This is also true for foreign language teaching in Turkey. However, there are studies (Tinkham,1993,1997; Waring, 1997; Erten & Tekin, 2008) which found that presenting new L2 words in semantic clusters impede learning. As a result, it is necessary to be aware of the empirical findings instead of relying solely on theories supporting semantic clusters.

Very young learners are generally a neglected population in many educational research studies. Though the body of studies on L2 vocabulary clusters has increased since the late 1970s (Tinkham, 1993; Waring, 1997; Finkbeiner & Nicol, 2003; Liu, 2003; Erten & Tekin, 2008), there is no research on very young EFL learners on this topic. This study will not only fill a gap by providing original data

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in this area but also contribute to the results of other research studies about the organization of L2 words to be presented together. Though the number of studies on this topic continues to increase, the majority of the studies include artificial or L1 words which makes them 'indirect' (Tinkham, 1994). However, this study includes genuine L2 words which validate the study.

The most important aspect of this study is informing teachers about the preferences of very young EFL learners' vocabulary learning. Foreign or second language teachers can take advantage of being aware of the results and start teaching L2 words in ways that are advantageous for very young EFL learners. So it can be said that those teachers start one step ahead of others by eliminating the disadvantageous ways of presenting L2 vocabulary.

To sum up, the results of this study will open up the category of very young learners in this research topic and provide relevant data. More research studies on very young learners about this topic can add new information contributing either for or against the findings.

Definition Of Significant Terms

Very young learners: Children under 7 years of age (Slatterly & Willis, 2003).

English as a Foreign Language (EFL): This refers to the language usually in the classroom setting, in a context where the target language is not widely used in the community (Lightbown & Spada, 2006, p. 198).

Semantic cluster: A group of words which share various semantic and syntactic characteristics (Gairns & Redman, 1986).

Thematic cluster: Words containing different parts of speech that are all closely associated with a common thematic concept (Tinkham, 1997).

Unrelated cluster: Words grouped together which do not share semantic and syntactic features and they are not associated in any concept (Mirjalili, Jabbari & Rezai, 2012).

Basic Assumptions

The researcher assumes that all participants listened attentively to all vocabulary instruction and reviews done by the researcher. It is also assumed that participants paid necessary attention while answering immediate and delayed recall tests. In addition, it is assumed that very young learners selected as participants were representatives of the target population considered in the study. Finally, the researcher assumes that recall tests administered in the study were acceptable for collecting the necessary data for the purposes of the study.

Limitations

Convenient sampling was used for this study and 53 very young learners studying at a private kindergarten, which the researcher worked at were the participants. As a result, the number of participants may be considered too small for the target population, which is very young learners learning a foreign/ second language. It can be concluded that generalizability of the study is limited due to the small number of participants.

Organization Of The Study

In this part, organization of the study will be presented. This thesis has five chapters. In the first chapter, the introduction of the study which provides necessary background information is explained. Moreover, purpose, significance and organization of the study, research questions, basic assumptions of the researcher and limitations are described. Overview of methodology is also found in this chapter which involves participants, setting, data collection and instrumentation.

In the second chapter, a detailed literature review is presented under five main headings; very young learners, memory, semantic clusters, thematic clusters and unrelated clusters.

Chapter three is called results and discussion. Findings related to the research questions of the study are described and discussed in detail.

In the fourth chapter, implications and limitations of the study are explained and recommendations for further research are given. References and appendices are found at the end of the thesis.

Overview Of The Methodology

Participants

54 very young learners who are studying at a private kindergarten participated in the study. The number of subjects was decreased to 53 due to absences during the instruction lessons. Participants were 5 year olds and they were at the beginner proficiency level in English as they started learning English for the first time at the beginning of the 2011-2012 educational year.

Setting

The study was conducted at a private kindergarten in Istanbul during the second term of the 2011-2012 educational year.

Data Collection

In this study, data was collected in five stages. In the first stage, a pre-test was conducted. The purpose of the pre-test was to ensure that none of the target L2 words in the three clusters were known by the participants. To achieve this, target L2 words chosen by the researcher were shown via flashcards to all participants one by one who were asked to name the flashcards in English. When a participant knew the correct name for a flashcard, it was replaced by another suitable L2 word and the process continued until none of the target L2 words were known by the participants.

The second stage of the study included instruction lessons which were planned and taught by the researcher on Mondays. The instruction lessons which lasted 35 minutes were given by the researcher three times as the study includes three types of L2 vocabulary clusters. The aim of the

instruction lessons was to teach the participants new L2 words' pronunciation and meaning, and practice those words during the instruction lessons.

The third stage was an immediate recall test which required the participants to point to the correct flashcard when the researcher pronounced its name. Immediately after the instruction lessons, the participants were invited to a class one by one and asked to complete the picture naming task with all L2 words in a cluster. This step was done three times during the whole study as there were three L2 vocabulary clusters to be investigated.

The fourth stage included the review of the target words in L2 vocabulary clusters. This stage lasted for three days for each cluster type. Participants practiced the target L2 words during a review lesson planned and taught by the researcher. As a result, participants reviewed each cluster three times in three days.

The last stage of the data collection was called delayed recall test which was in the same format as the immediate recall test. After three review days on Fridays, participants were called to a classroom one by one and a picture naming task was applied by the researcher.

Instrumentation

Three instruments were developed and used in this study:

1. Pre-test: In accordance with the aims of the study, a pre-test was developed by the researcher. The pre-test included eighteen target word picture flashcards. All the participants were called to a classroom one by one and were asked if they knew the names of the pictures in English. The aim of the pre-test was to avoid any known words by the participants which might cause ease in remembering L2 equivalents of the pictures. Therefore, if any L2 words had been known by any participants, those words would have been replaced with another suitable word and the pre-test would have been continued until none of the participants knew the eighteen target words.

The pre-test was applied to 54 participants before teaching the target words. Fortunately, the target words chosen by the researcher weren't known.

2. Immediate and delayed recall tests: A recall test was developed by the researcher according to the aims of this study. The recall test included six target L2 words' pictures on flashcards as materials. Participants were required to point to the correct picture when the researcher said the names of the pictures on the flashcards. The recall test included only speaking and listening skills as very young learners do not know how to read and write. The recall tests had been used in the pilot study. Therefore, the instruments' usability and effectiveness were tested.

The recall test was administered twice. Firstly, the participants received a recall test immediately after the instruction lesson of each cluster. This test is called immediate recall test. Secondly, the participants received a recall test after three days in which three review lessons were taught. This test is called delayed recall test. The participants were tested individually by the researcher in an empty class. The same flashcards used in the instruction lessons were used during both recall tests to avoid any misunderstanding of the pictures. The target words in each cluster were asked in random order in both recall tests so that the participants weren't able to memorize the order of the words instead of their meanings. The researcher didn't correct or confirm participants' answers during both recall tests.

3. Instruction and review lessons: Instruction and review lessons were planned by the researcher and taught for all type of clusters to all participants. Three materials were used in the instruction lessons; flashcards, PowerPoint slides and mini cards. Instruction lessons lasted 35 minutes. The aim of the instruction lesson is to introduce new L2 words to participants and teach them the meaning and the pronunciation of the target words. In the

first 10 minutes, 6 new L2 words were introduced to participants via flashcards. In the next 10 minutes, the words were practiced through the use of a PowerPoint game. The game required the participants to choose the correct picture that the researcher pronounced among the several pictures found on the screen. A correct answer directed them to the following picture whereas a wrong answer led them to the same pictures. Final 15 minutes, all participants were given mini cards of the 6 target L2 words. The participants were asked to raise the correct card that the researcher pronounced.   The review lessons which were taught three times included the PowerPoint game and the mini cards.

CHAPTER II

REVIEW OF LITERATURE

Vocabulary learning and teaching has become a vital area for second and foreign language acquisition studies since the 1970s though it was undervalued due to the importance given to syntax and phonology in the past (Coady & Huckin, 1997). This can be proved by the increase in the number of vocabulary specialists' studies since the 1970s (Carter, 1998). As the importance of vocabulary has been accepted, it is now placed at the heart of foreign and second language learning and is considered to be a central aspect of language (Zimmerman, 1997). Among many different topics of research studies about vocabulary, ways to group new second / foreign words have been investigated by many researchers (Channel, 1981; Gairns & Redman, 1986; Seal, 1991; Tinkham, 1993, 1994, 1997; Waring, 1997, Wharton & Race, 1999; Jullian, 2000). Studies, mostly conducted with teenagers and adults, provided controversial results and more research is seen necessary on this topic. As this study involves very young learners – a very limited area of research-, this chapter includes information about very young learners' characteristics and memory. In addition, rationales and studies of three main cluster types – semantic, thematic, and unrelated- are explained in detail.

Very Young Learners

Very young learners have their own characteristics and as in all age groups, it is vital to acknowledge these while developing very young learners' educational life. To start with, as very young learners can be mistaken for young learners, it is necessary to take into consideration the age range of very young learners which determines their characteristics. Slatterly & Willis (2003) explain the importance of this and provide the age range of young and very young learners:

> Children show different characteristics at different ages, we make a distinction between very young learners (VYLs) aged under seven and young learners (YLs) aged seven to twelve (p. 4)

Similarly, Phillips (1993) defines young learners as the children from the first year of formal schooling to eleven or twelve years of age. This definition also matches the Turkish Ministry of National Education's (2011) definition of young and very young learners. It is stated that 'young learners' include children who start the first year of formal schooling who are in the age group of six to 13, whereas 'very young learners' are in the age group of three to five and have not reached the age of compulsory schooling. As a result, it can be deduced that very young learners are children six years old and under who may or may not have attended kindergarten before the first year of formal schooling.

Every age group has different characteristics and developmental stages. Curriculum planners and teachers should take these into account while determining learners' education. Language teachers of very young EFL learners should also be aware of learners' characteristics and abilities in order to provide them with a suitable L2 learning environment.

Phillips (1993) points out important issues about very young learners which should be considered while teaching a foreign language. According to Phillips (1993), children learn a foreign language in accordance with their developmental stages. It is vital to consider children's developmental stages, cognitive readiness while teaching a foreign language to ensure that language teachers do not set unrealistic goals. In addition, very young learners do not think of an abstract system and its rules while learning a foreign language. They like having fun with the language. Therefore, it is essential to involve enjoyable tasks such as songs, and games, creating a fun learning atmosphere that results in more durable acquisition.

It is also emphasized that language learning activities should be at the appropriate level for very young learners. They should be simple and clear; however, if the activities are too simple or too

challenging, this will impede the satisfaction and feeling of success which can easily demotivate very young learners. Language teachers should also be aware that for very young learners language is orally based. Listening and speaking activities take up majority of the classroom work as they do not know how to read and write. Finally, language teachers should take advantage of a child's ability to imitate as well as their high motivation for learning during the teaching process.

Reilly & Ward (2003) define very young learners as children who haven't started the first year of compulsory schooling or reading and writing, they also provide teaching clues and more characteristics of very young learners. According to Reilly & Ward (2003) very young learners need individual attention from their teachers. In addition, as they have a short attention span, it is vital to have a variety of activities available which can be changed in short periods to keep the learners engaged with an activity. It is also mentioned that very young learners go through a 'silent period' during which they prefer to remain silent and absorb language before they produce. Hence, language teachers should not move with haste for the production phase. Very young learners are imaginative and creative as they do not yet restrict themselves with logical constraints. As a result, various and interesting activities can be done in the classroom. Moreover, very young learners are interested in themselves and the environment around them and language teachers should create a learning atmosphere in which learners can talk about their own lives. Finally, as very young learners are receptive, curious and very open to learning, language teachers should provide them with new and intriguing language activities all the time.

As mentioned before, foreign language learning should be hand in hand with very young learners' development. Reilly & Ward (2003) and Mcllvain (2012) describe very young learners' development and suggest necessary teaching activities. To start with, it is mentioned that very young learners develop hand-eye coordination. They start to draw more detailed pictures and do simple art and crafts. They learn by repetition which they also enjoy. Besides sorting and matching

objects, they begin to learn the concepts of quality, position, size and amount. They can follow a story and they enjoy books with pictures. As they learn through their five senses, they need multi-sensory experiences to learn successfully. In addition, they are not ready to learn abstract concepts as they are still in the phase of concrete objects. As a result, including hands-on and concrete experiences for their learning process is vital. During this period, their first language (L1) is still developing. L1 and L2 learning involves more comprehension than production. They are not ready for complex structures in L1 and L2.

Healy (2012) gives some more important information about how very young learners learn and provides some effective strategies. Firstly, very young learners learn best when they are actively involved. This means that they need to explore not only the environment around them but also the language in a way that is enjoyable. Secondly, vocabulary that they can come across in their daily lives should be included. Cameron (2001) emphasizes these two important points, as teaching 'basic level' words. Cameron (2001, p. 79) defines basic level words as the most commonly used and short words which are used in neutral contexts. Children learn basic words first before they learn higher or lower hierarchy words, for example, a basic level word is 'dog' whereas a lower level hierarchy word is 'spaniel'. In addition, basic level words include those of which children can relate other shapes, usages, and create similar mental images in their minds. For example, when the word 'chair' is considered children imagine a chair on which they sit. As a result, it can be said that a child's experiment with the word is directly connected to their development of vocabulary and concepts which provides them with an 'entry point' for learning a foreign word. Healy (2012) emphasizes the importance of using real objects and pictures when teaching very young learners new vocabulary. In addition, for very young learners learning to be social is important which requires group work and interaction with adults. Healy (2012) also mentions about several effective strategies. First of all, playing is the most effective teaching and learning tool for very young learners. They not only explore, understand and create the language but also have fun doing

so. Total Physical Response (TPR) which combines language and action enables very young learners to learn new vocabulary by actively involving physical movement. Finally, use of stories is another effective strategy for very young learners as it helps create meaning through context and pictures.

Besides all the information above, children are known to be natural language learners (Curtain & Dahlberg, 2009). When very young learners start learning a foreign language, they can start functioning in that language naturally within a short time. It is possible to find the reasons for this in Lenneberg's (1967) critical period hypothesis. According to Lenneberg (1967) language can be acquired within a critical period which starts from early infancy and lasts into puberty. Though critical period hypothesis was originally formed by taking first language acquisition into consideration, it is vital to acknowledge this hypothesis to have an understanding of L2 acquisition at very young ages.

Lenneberg not only investigated all the available evidence relating to language learning especially during childhood but also proposed a mechanism which causes a maturational change in learning abilities (Johnson & NewPort, 1989). Newport & Supalla's (1987) study also contributed to the presence of this mechanism as the study was conducted with early and late learners revealing that as age increases, the ability to acquire L1 decreases.

Many researchers started to investigate if the effect of a critical period was present for second language learners and two interpretations of the critical period hypothesis were formed for L2 acquisition, for very young learners (Johnson & Newport, 1989, p. 63). The first one is called "exercise hypothesis" which claims that one has a superior capacity for acquiring languages in early life. If language learning is not exercised during this stage, this ability will decrease over time. However, if it is exercised, further language abilities will remain. According to this explanation, L2 learning ability for children and adults is equal, although due to greater skills in L1

adults are more successful. The second interpretation is called "maturational state hypothesis" which hypothesizes that one has superior capacity for acquiring languages early in life but this capacity disappears with maturation. This hypothesis' claim for L2 learning is that children have a special ability in learning a language but this ability declines as they grow older whereas adults do not have this ability.

There are many L2 learning studies which yield data in favor of maturational state hypothesis. Subjects who begin learning a second language not only show superiority in phonology, but also in syntax and pronunciation (Asher & Garcia,1969; Oyama, 1978; Snow & Hoefbagel-Hohle,1977). Johnson & Newport's (1989) study showed important results which gave insights into children's second language learning. It was found that children had an advantage over adults in L2 acquisition. Children were better in the ultimate performance -in the long run-. Children who started learning L2 before the age of seven can reach native performance whereas those older than seven perform at a poorer level. There was a linear decline in performance through puberty. Performance gradually declines from approximately the age of seven –well before puberty-. The Critical period is not only a L1 phenomenon but a L2 phenomenon as well.

To conclude, very young learners have a unique and distinctive way of learning a foreign language. Therefore, language teachers should take into consideration all the information above when planning their lessons.

<div align="center">**<u>Memory</u>**</div>

As this study includes two recall tests –immediate and delayed- which require subjects to retrieve information from their memories, it is suitable to mention the types of memory and how they work. Baddeley (1990, p. 13) defines memory as "a system for storing and retrieving information, information that is, of course, acquired through our senses". This definition tells us that humans

record everything around them via their senses and store that information in their memories for further use.

A commonly accepted model of retention involves three types of memory: sensory memory, short-term memory and long-term memory (nanç, Bilgin & Atıcı, 2004). Being the "shortest-term memory", sensory memory enables humans to remember information received through the five senses after a stimulus ends (Mastin, 2010). Sensory memory is the first step in getting information from our environment. This type of memory does not include a cognitive process and is out of one's control. The five senses are instantaneously and constantly receiving information from stimuli in our environment. Some of this information can be ignored and disappear or be perceived in which case the information then enters the sensory memory automatically. This information can be retained accurately but for a very short time; it is lost in 200-500 milliseconds. Sensory memory, which is estimated as having a capacity of up to 12 items, is a vital step for transferring the information to short term memory via attention.

Short-term memory stores temporary information which is gained by sensory memory. The information stored is available for a short time, at most 30 seconds (nanç, Bilgin & Atıcı, 2004). The amount of information stored in the short term memory is also limited (Al-Jabri, 2005). The limited capacity of short-term memory is estimated to be between five to nine items (Mastin, 2010). nanç, Bilgin & Atıcı (2004, p. 140) state that short- term memory can store seven items not longer than 30 seconds. In addition, if the information in the short-term memory is not practiced and repeated, the information can be lost. Repetition, rehearsal, giving the information a meaning, association, and motivation are important factors that affect the durability of information in the short-term memory (Mastin, 2010). Siegler (1989) also supports this by highlighting a child's inability to solve some problems. According to Siegler, the reason for this is the lack of necessary information as it is not practiced enough.

Long-term memory stores more deeply processed and durable information than short-term memory. The storage of the long-term memory is also larger than short term memory. However, the time required to store information in long-term memory is also longer, at approximately 10 seconds (Ericsson & Kintsch, 1995). Unlimited amounts of information can be stored for an indefinite period of time in the long term memory and rarely disappears over time (Martis, 2010). Consolidation, rehearsal and meaningful association are necessary elements to store information in long term memory. The information stored in the long term memory can be recalled with or without stimuli after days, months or years.

To sum up, although these three types of memory differ in duration and capacity in regard to storing information, there are three necessary steps to form a long lasting memory in one's brain. It is vital to know properties of memory as learning and memory are closely linked to each other. According to Canadian Institutes of Health Research (2012), memory has the "concrete traces" one's learning in neural networks on the brain.

Vocabulary Cluster Types

In literature, there are three main types of vocabulary clusters; semantic, thematic and unrelated. Some of the studies compare two of them and some compare three of them altogether. Studies differ from each other in terms of participants, data collection procedure context and findings. Under this heading, the three types of clusters' properties, rationales, related studies and their results are presented in detail.

Semantic Clusters

One of the groups that words can be organized into is semantic clusters. Researchers use different names for this kind of grouping; Gairns & Redman (1986) use the term 'lexical sets', whereas Marzano & Marzano (1988) and Tinkham (1994) prefer to use 'semantic clusters'. The

latter will be used throughout this study relying on Tinkham's (1994) and Marzano & Marzano's (1988) explanations which aim to emphasize that words in semantic clusters are closely-related words from a semantic field.

Semantic clusters include words which are grouped together and share various semantic and syntactic characteristics (Gairns & Redman, 1986). Many ESL / EFL course books provide vocabulary in semantic clusters. Below are some examples of those course books;

- *New Horizons of English 1* presents the words "mother, wife, father, husband, son, brother daughter, sister" together (Walker, 1991, p.74)

- *Crossroads 1* presents the words "single, married, divorced, separated, widowed" together (Franklin & Mayers, 1991, p. 95)

- *Inside Out* groups the words "aubergines, beans, cauliflower, celery, spinach, courgettes" (Kay & Jones, 2000, p. 104)

- *Incredible English 3* introduces the phrases "do a handstand, do a headstand, do a somersault, walk on stilts, walk on your hands, ride a horse, ride a bike, swing on a trapeze" together. (Phillips & Morgan, 2011, p. 67)

As can be seen above, all the words share syntactic and semantic properties and can be listed under a covering term. For example, all the words in the first example are in the same syntactic category which is noun. They share semantic properties; they are the names of different family members. They fall under a covering term "family". Ausubel (1968) refers to the covering term as an 'advance organizer' which helps learners not only have a 'stable cognitive structure' but also form a mental picture of the general concept to store the words. Brown(1993) and Scarcella & Zimmerman (1998) state that the formation of a concept makes the learning of a new word easier

as learners will already have the familiar concept in their minds before they are exposed to a new related word to that concept.

There are many motivations provided by different researchers to teach L2 words in semantic clusters in ESL/EFL classrooms. Tinkham (1997) mentioned two of these motivations. To begin with, semantic clustering fits well with two second language development approaches. One of these approaches is the 'structure-centered' approach. Words listed in semantic clusters easily fit into substitution drills through which students can change the meaning of a sentence to some extent by using different words from a semantic cluster. A course book which uses this is *New Horizons in English* (Walker, 1991). Students are expected to fill in the blanks of a sentence with different words from a semantic cluster. To exemplify, students can say different colours to complete "But this is a _____ jacket" sentence, they can say different names of food to complete "Do you like _____?" question. The other approach is the 'learner-centered' approach which focuses on the communicative needs of students and organizes units according to situations, tasks, notions and functions. Semantic clusters again fit naturally with this approach. For instance, Wilkins (1976) groups the words "tell, inform, proclaim, assert" to teach the notion of "information asserted" to students in a notional syllabus.

The second motivation for using semantic clusters is that many researchers' (Channel,1981; Seal, 1991; Wharton & Race, 1999; Jullian, 2000) claim that semantic clustering facilitates learning of new words. Gairns and Redman (1986, p. 31) state it is necessary to use semantic clustering to "provide a useful framework for the learner to understand semantic boundaries: to see where meaning overlaps and learn the limits of use of an item." Seal (1991) supports this idea by claiming that as students will be able to differentiate the meanings of the similar words in semantic clusters, their understanding will be affected positively and learning of one word will reinforce the learning of another related word. Channel (1981) and Jullian (2000) also agree with this view,

emphasizing that semantic clusters provide students with the full semantic content of related words and helps them find the differences and similarities among the words in a semantic cluster.

Gairns and Redman (1986) explain more advantages of semantic clusters. Gairns and Redman (1986) resemble semantic clusters to 'building blocks'. These blocks expand as students progress and practise while learning a language. In addition, they also claim that semantic clusters provide students with a clear context for practice of the vocabulary. Seal (1991) adds that learners can experience a feeling of progress when they have finished learning a semantic set and move on to another.

Hashemi and Gowdasiaei (2005) indicate that as learners make extra effort to differentiate the words' meanings in a semantic cluster, a deeper level of mental processing is needed during the learning process and resulting in more durable target words in learners' memories.

There are also different theories that support semantic clusters. Ausubel's (1963) 'expository teaching' emphasizes that when a teacher prepares materials before going in to class, students can find themselves actively studying meaningful material. 'Levels of processing theory' also holds the position that words are processed at a deep level with semantic clusters so that students develop greater vocabulary (Craik & Lockhart, 1972). 'Semantic field theory' proposed by linguistics claim that related words can be organized in semantic sets (Cruse, 1986; Leech, l974; Lehrer, 1974; Lyons, 1977). Beside these, cognitive psychology presents two theories which support semantic clustering. The first one is 'semantic activation theory'. According to semantic activation theory, there are 'nodes' through which words are processed in the memory (Colins & Loftus, 1975). When a node is activated, all connected links activate related concepts so that these concepts are more available for cognitive processing (Balota & Lorch, 1986). As a result, students can remember related words more easily. Another idea that cognitive psychology provides is

'associative priming'. Associate priming suggests that when associated items are presented at the same time, it becomes easier to access the information (Anderson, 1995).

Semantic clustering is also supported by the organization of mental lexicon in L1. Aitchinson (1987) defines 'mental lexicon' as the collection of words that speaker of a language knows in that language. Lexical semanticists try to reveal if a lexicon is organized if so how. They base the concept of semantic clusters on the term of 'semantic fields' (Al-Jabri, 2005). The concept of mental lexicon reflects the brain theories which support the view that there is an organization of semantic fields in the human brain (Lewis, 1997; Rogers, 1996; Carter & McCarthy, 1998; Grandy, 1992; Aitchinson, 1994). According to Aitchison (1994) semantic clusters reflect the natural organization of mental lexicon and speakers remember words depending on the semantic fields in the brain. Therefore, using semantic clusters facilitates the learning process as words in our mental lexicon are related in associative networks (Aitchinson, 1987).

There are many researchers who favor using semantic clusters while teaching vocabulary (Seal, 1991 ; Grandy, 1992; Haycraft, 1993; Stroller & Grabe, 1995; Hashemi & Gowsasiaei, 2005). L1 acquisition studies also provide information supporting semantic clustering. Clark (1993) mentions that when children start learning a lexical field in their L1, it is more possible to learn several words from the same lexical field. As a result, it is hypothesized that learners can learn several words from lexical fields in L2 when they start learning a lexical field. Beck, Perfetti, & McKeown (1982) also reported from a L1 study in which 27 students of 4th grade learnt 104 words in a five-month period completing tasks such as single-word semantic decisions, and simple sentence variation. Results showed that semantic grouping was beneficial for learning words. There are also monolingual memory studies which were conducted in two phases: study and test. During study phases, subjects were expected to memorize known words that were given to them as a list and during study phases they were expected to remember or recognize the words found in the lists. Results from

monolingual memory studies showed that semantic clustering facilitated recall and recognition of the target words (Bousfield,1953; Cofer,1966; Cohen,1963).

Besides L1 studies, L2 studies considering vocabulary clusters are also being conducted in recent years. There are some studies which yielded results that favor semantic clusters. To start with, Hashemi and Gowdasiaei (2005) conducted a study to find out whether lexical set (LS) or semantically-unrelated set (SU) was more effective for L2 learners' vocabulary learning. They also explored if lower and upper level English proficiency levels benefitted differently from these two sets. L2 words in LS included words belonging to 13 semantic clusters whereas L2 words in SU were grouped in randomly. 60 subjects, aged from 20 to 30, studying at two intact EFL classes in Iran were included in the study. Four groups of students were formed each involving 15 students; upper LS, lower LS, upper SU and lower SU. Two weeks before introducing target words, students received a pre-test to arrange the target words in the study. According to the results of the pre-test, students were taught the determined 100 vocabulary items in 45 minute lessons twice a week. While learning target vocabulary, LS students were given a topic and target words were presented to them in sentences and they were asked to guess the meanings of the words with support from their teacher when necessary. Students in SU groups were taught in a similar way. However, as their target words were grouped randomly, they were not as successful as LS students while guessing the meanings of target words; therefore, the meanings were generally provided by their teacher. A post-test was conducted a week after the instruction of L2 words was finished. The post-test required the subjects to show their breadth and depth of 100 items by assigning a number from one to five for each word. If subjects knew the target word very well, they were supposed to assign number five and form a sentence using that word. According to the results of the post-test, it was found that both groups gained vocabulary knowledge from two types of clustering. However, upper and lower LS group students gained significantly more words in terms of vocabulary breadth and

vocabulary depth than their peers in the SU group which indicated that the subjects took more advantage of semantic clustering of L2 words than unrelated clustering.

Hoshino (2010) conducted a study involving semantic clusters which also contributed to this topic. However, this study not only aimed to investigate five types of vocabulary lists - synonyms, antonyms, semantic, thematic, and unrelated- but also their effects on different types of learners. 46 Japanese university students who were learning English as a foreign language were the participants. There were 40 target L2 words in each word list. However, in each list the target words were related in pairs as antonyms and synonyms including two words. As a result, there were 20 pairs of target words. These pairs were divided into two five-pair and one ten-pair words in order to avoid the piling up of too low or too high scores. In the lists, Japanese meanings were written next to each English word. There were two different sessions in this experiment; learning and testing. Learning sessions were conducted fifteen times. From the first to the tenth learning session, participants received two five item lists in the order of synonyms, antonyms, semantic, thematic and unrelated sets. From the eleventh to the fifteenth session, they received ten pair word lists in the same order. Participants were allowed to take the word lists to their homes. Learning sessions were done three or four days before the testing session. The testing session required the participants to write Japanese equivalents of L2 words. Two minutes were given to answer a five-pair L2 list and four minutes were given for the completion of a ten-pair list. After the testing session, participants were given a questionnaire which yielded results about what strategies the participants used during the learning sessions. The questionnaire showed that there were four main types of learners. The first type learnt L2 vocabulary by writing and pronouncing repeatedly, the second type learnt best by grouping vocabulary, the third type learnt the target vocabulary best by memorizing and not writing, and the final type learnt best by pronouncing L2 words. The results of the study showed that there was no relationship between the participants' vocabulary learning styles and the types of vocabulary clusters. In addition, it was found that L2 words in the semantic

cluster were memorized more than the other four types of clusters. No other significant difference was found.

Despite of some positive findings, semantic clustering is criticized for two main reasons. The first criticism by many researchers is that semantic clustering is based on methodology rather than research (Waring, 1997; Tinkham, 1994, 1997; Finkbeiner & Nicol, 2003). The second criticism is that there is little empirical evidence that supports semantic clustering but and that the evidence comes from L1 studies (Finkbeiner & Nicol, 2003) and monolingual memory studies conducted for L1 words misleading the researchers to think that the same can happen for L2 words (Finkbeiner & Nicol, 2003). Finkbeiner & Nicol (2003) explain the difference between the acquisition of L1 and L2 words. While learning L2 words, learners need to create new form-meaning relations at the same time. This includes forming a strong connection with a concept. In addition, they need form connection between concepts and both L1 and L2 forms. It was also mentioned that the connection between a concept and its L2 form is weak at the beginning stages of learning (Finkbeiner & Nicol, 2003, p. 371). As a result, L2 learners not only need to establish a meaning form connection but also strengthen it and these are quite different from learning L1 words.

To sum up, though the semantic cluster is criticized heavily as most of the related findings generally come from L1 studies and depends more on theories than empirical findings, more and more studies are being conducted with L2 words. The two studies mentioned above showed that semantic clustering was beneficial for L2 learners but they only involved teenagers and adults as subjects which causes a vital research gap for young and very young learners' L2 vocabulary cluster choices.

Unrelated Clusters

Though semantic clustering was found useful by many researchers, there are studies which point out that semantic clustering actually impedes learning rather than facilitates it (Waring,1997; Tinkham,1993,1997; Erten & Tekin, 2008). The background of this view comes from McGeoch & McDonald's (1931) study on vocabulary learning in first language/mother tongue (L1) context. In this study, subjects showed the least successful performance in learning synonyms. It was concluded that similar words interfered with each other in the learning process. This result and similar results showing the interfering effect of semantic clusters contributed to the formation of "Interference Theory" by McGeoch (Baddeley, 1990; Baddeley, 1997; Higa, 1963). According to this theory:

> As similarity increases between information learned as a target and other information either before or after the targeted information, the difficulty of learning and remembering the target information increases (Tinkham, 1994, p. 3)

Basically, inference theory supports that when learning several words at the same time, if the words are very similar to each other and they have too many common semantic and syntactic features, it is difficult to learn and remember them. To give an example, high-heels, sneakers, boots belong to the same covering term "shoes" so taking this theory into consideration, those words should not be presented together.

Waring(1997, p. 261) supported this view by stating that: "Memory traces compete with each other." Hence, if several words are to be presented, they should not be in semantic clusters. Due to the presence of too many common features among the words, the learner need to put extra effort to separate the words in his/ her brain. This increases the learning load and impedes retention of the words (Waring, 1997, p. 261-262). In addition to these, the negative effect of interference results in cross-association which puts an extra load on short-term memory was emphasized by many researchers (Higa, 1963; Laufer, 1989; Tinkham, 1993, 1997; Waring, 1997; Nation, 2000; Finkbeiner & Nicol, 2003).

In the 1980s another more support came from a hypothesis called "distinctiveness hypothesis" which was in line with "interference theory" (Hunt & Elliot, 1982). There were also many studies carried out on the distinctiveness hypothesis (Hunt & Elliot, 1980; Hunt & Mitchell, 1982; Schmidt, 1985). According to distinctiveness hypothesis:

> As the distinctiveness (non-similarity) of information to be learnt increases, the ease of learning that information also increases (Tinkham, 1997, p. 140).

In other words, people remember distinct items better than related items. As a result, distinctiveness of information facilitates memory and learning. Hunt & Elliot (1980) conducted a study with 346 undergraduates which aimed to investigate the orthographic distinctiveness by finding out retention rates for distinct and common words. 20 orthographically distinct and 20 orthographically common words were tested in the study. Free recall tests showed that the subjects remembered orthographically distinct words better than those that were orthographically common. It was concluded that "non-semantic information is useful and perhaps essential in long-term memory" (Hunt & Elliot, 1980, p .71).

Hunt and Mitchell (1982) added the conceptual distinctiveness dimension to another study which again resulted in the favor of distinctiveness hypothesis. The subjects were 128 undergraduates. 20 target words which included four 'critical words' and 16 'surrounding background words' were given to the subjects in four conditions. In all conditions, 16 words were orthographically common and from the same conceptual category but the properties of critical words were different in each condition. In the first condition, the critical words were from the same conceptual category but orthographically distinct. In the second, they were orthographically common but from different concepts. The third condition involved both orthographically distinct and conceptually different critical words and in the last condition the critical words were from the same conceptual concept of background words that were also orthographically common. The results of free recall tests showed that conceptual and orthographic distinctiveness had positive

effects on recall tests. Schmidt (1985, p. 570) also agreed with the previous studies' findings after a study was conducted to investigate the learning of the distinctive words, stating that conceptually distinctive words were better recognized than those that were conceptually the same.

With the results from interference theory and distinctiveness hypothesis, researchers started to investigate the unrelated clusters' effects on learning and remembering L2 vocabulary. In the literature 'semantically-unrelated' term is widely used but in this study 'unrelated cluster' term will be used to avoid any confusion as the words in this type of cluster are neither semantically nor thematically related.

Unrelated clusters include words which do not share any semantic or syntactic features and that have no association in an concept (Mirjalili, Jabbari & Rezai, 2012). For instance, the words "pencil, drink, sad, mouse, fly" can be a good example of unrelated clusters. They neither share semantic nor syntactic features nor can they be listed under a covering term or a theme.

Several research studies in second/foreign language education (Tinkham, 1993; Waring, 1997; Erten & Tekin, 2008) yielded data in favor of presenting unrelated vocabulary that do not belong to any semantic sets.

Tinkham (1993) compared two types of clustering in his study. The subjects were university students who were given words of two different clusters; semantic clusters (shirt, jacket, sweater) and unrelated clusters (rain, car, frog). These English words (L1) were paired with artificial words (L2) offered by the researcher. During testing, the subjects needed to remember the L2 equivalence of an English word. The study explored the number of trials needed to remember the L2 words by the subjects. In two experiments conducted during the study, L2 words in unrelated clusters took fewer trials to be learnt than L2 words in semantic clusters. The findings strongly suggested that students had more difficulty in learning words in semantic clusters than in words in unrelated clusters.

Waring(1997) replicated this study in Japan with 18 natives and two non-natives who were at the advanced proficiency level in Japanese to find out whether the interference effect was also present using Japanese and in turn providing generalizability for Tinkham's (1993) study. Subjects' age range was between 18 and mid-sixties. Waring (1997) followed Tinkham's (1993) procedure and carried out two experiments. In both experiments, Japanese words (L1) were paired with artificial (L2) words. Pronunciation variety was taken into consideration while choosing the words. In the first experiment, he formed six-word sets which included semantic and unrelated words all together. In the second experiment, there were again, two clusters of L2 words; one included words in a semantic cluster (fruits) and the other one included words in an unrelated cluster but this time they were presented in separate lists. Both experiments were carried out the same way. A trials-to-criterion test was used as an instrument and the subjects were tested individually and orally. The subjects heard all L1 and L2 words before they started testing. During testing, they listened to a L1 word and a three-second gap was given for them to say the L2 equivalent and finally the correct answer was provided which meant subjects had the opportunity to learn the target words in each trial. The exact pronunciation of target words was not essential; similar pronunciation was accepted as correct. Testing continued until all the subjects had learnt all L2 words and the researcher recorded the number of trials that each subject needed to learn the words. The results showed that in both experiments, the subjects remembered L2 words in semantic clusters more at a slower rate, needing significantly more time to learn them, whereas learning L2 words in the unrelated clusters took nearly half the time of the semantic clusters. Waring (1997, p. 270) concluded his study considering semantic clusters as "a potential problem for learning" and an issue that language teachers should avoid in their lessons.

Finkbeiner and Nicol (2003) also explored if semantic clusters had any effects on their subjects' performances on translation tasks. In this study, the subjects were 24 graduates of the University of Arizona who were monolingual speakers of English. 32 artificial words (L2) were

paired with pictures of familiar concepts (animals, kitchen utensils, furniture, body parts). The words were categorized in two clusters: semantic and unrelated. The procedure lasted for two days in a five-day period. There were three main stages in the procedure but before the first stage, the subjects were individually seated in front of computers placed in a sound proof space and were shown a picture on the computer. The subjects were also required to write name of the picture in English to provide a name agreement as they did not see the L1 names in written form until the third stage. The first stage was vocabulary training which lasted 45 minutes. The subjects, seated in front of the computers, heard the L2 word and its picture for 500 milliseconds and heard the L2 word again and they were required to pronounce the L2 word twice to the microphone so that they could also learn the L2 words by repetition. In following, the second stage -recognition task- was established. The recognition task included pictures and L2 word pairs. 64 picture-word pairs were formed half of which were correct and half of which were incorrect. The subjects needed to click on either the 'yes' or 'no' button to confirm or refute the match. Feedback on accuracy was provided at this stage. The last stage was the translation task. The subjects were given the English words and were required to say the L2 equivalent as quickly as possible. The same procedure was also followed translating from L2 to L1. The results showed that in both translation tasks the subjects spent significantly more time in completing the tasks with words in semantic clusters. There was a significant difference in the subjects' performance regarding the amount of time for providing the answers in favor of unrelated clusters. It can be concluded that the interference effect was present during the phase of both encoding the information into the memory and retrieving that information for translations.

Erten and Tekin (2008) contributed to the area by conducting a study with 55 Turkish students of 4th graders who were 10 years old. They were studying at a public school and learning English for the first time. Erten and Tekin's study has a vital place in the present study as it is the only study conducted in Turkey and one of the only studies which had the youngest age group as

subjects. In addition, it included real L2 vocabulary teaching in a real classroom atmosphere. The study aimed at investigating the effect of semantic and unrelated clustering on the retention of L2 words. A pre-test including 100 words was conducted to ensure whether the subjects knew the target L2 vocabulary. The pre-test included L2 words as well as their pictures and were to be matched by the subjects. 20 known L2 words were excluded and the remaining 80 words were divided into four clusters of 20 words two of which were semantic clusters (animals and foods) and two were unrelated clusters. The words were equal in length, there were no cognates and idiomatic words, and they were all concrete words. All the students were taught all of the vocabulary through the use of flashcards which included both the pictures and the written forms of L2 words. The subjects were tested on those words within a time limit. The procedure of data collection lasted three weeks. The first week, in the first lesson, the subjects were presented the L2 vocabulary of a semantic cluster (animals). The presentation of the target vocabulary was delivered through the use of repetition, gestures and flashcards so that each class had the same exposure. Immediately after the presentation, they had an immediate post-test which was in the same format of the pre-test. Review of target L2 words was done on the next day using flashcards to which the subjects answered orally. In the second lesson, they were presented L2 words from unrelated clusters and had an immediate post-test again. These words were also reviewed on the next day. At the beginning of the second week, the subjects had a delayed post-test for both clusters. In both types of the post-tests the subjects raised their hands when they were finished so that the researcher was able to record their individual completion time. The same procedure was followed in the second week with the other semantic (food) and unrelated cluster of L2 words. The subjects again had immediate and delayed post-tests for these clusters. The results showed that L2 words in unrelated clusters yielded better results than L2 words in semantic clusters in both immediate and delayed post-tests. The test completion time of the subjects while studying the L2 words in semantic clusters was slow, which revealed that semantic clusters caused slow recall.

Another related study came from Papathonasiou (2009) which aimed to find out which type of L2 vocabulary presentation was more helpful for L2 learners who were at different ages and proficiency levels; semantic or unrelated clustering. The subjects were Greek EFL students. There were 31 intermediate level children and 32 beginner level adults. Two classes at each age group were formed. All the subjects were given vocabulary translation tests before the instruction of the target vocabulary which included a list of words in English and their Greek equivalents so that it was ensured that the subjects knew all L1 words. In each age group (children and adult) class A learnt 60 L2 words in a semantic cluster and class B learnt 60 unrelated L2 words for three weeks. There were two lessons in a week, which ran for 45 minutes. The teaching process had three steps; noticing, retrieval, and generation. Noticing lasted for 10 minutes. The subjects saw 10 English words on the board and the teacher pronounced those words. Then, they were given the L1 equivalents of the words. Following this, the subjects wrote L2 words on one side of a small card and the L1 equivalents on the other side. By this method, the researcher enabled the subjects to keep small cards of the target words with their L1. In the second stage, the retrieval stage, the subjects were made to go through the cards five or six times and they were orally asked the L1 equivalents of the target words. Lastly, the generation step included two fill in the blank exercises to review the target words. At the end of three weeks, a short-term 'definition recall test' was applied and two weeks later a long-term 'definition recall test' was applied. These tests included writing L1 equivalents of given L2 words. The classes then switched the vocabulary instruction types and the same procedure was followed again. This study was different than others since it was conducted with two different levels and age groups, and included a large number of real L2 vocabulary. Findings showed that the vocabulary presentation type had an important effect on vocabulary recall. The subjects remembered the words presented in unrelated clusters more than the words in semantic clusters both during short and long term tests. Unrelated clustering created significantly different results for adult beginner learners whereas for children intermediate learners

there was no significant difference. The reasons why only beginner level adults' learning was facilitated by unrelated clusters was anticipated. Firstly, the adults had a high level of concentration because of professional and personal reasons. Secondly, they were able to master specific aspects of language in adulthood (Papathanasiu, 2009). Moreover, the completion of words in semantic clusters' test took more time than unrelated clusters' words which showed that semantic clustering slowed down the recall process.

Despite many studies yielding results in favour of unrelated clusters, Tinkham (1994, p. 4) claimed that these results should not suggest that clustering impedes the learning of L2 words. As a result, a different way of clustering may facilitate learning of L2 words and this was thematic clustering. Following this suggestion, many researchers conducted many studies about thematic clusters (Tinkham, 1994, 1997; Hippner-Page, 2000; Mirjalili, Jabbari & Rezai, 2012).

Thematic Clusters

With the presence of conflicting results for and against presenting an L2 vocabulary in unrelated and semantic clusters, Tinkham (1994) came up with a suggestion of L2 vocabulary presentation method: presenting words in thematic clusters. Many researchers started conducting studies comparing the semantic and thematic clusters' effect on the learning of L2 vocabulary (Tinkham, 1994, 1997; Hippner-Page, 2000; Mirjalili, Jabbari & Rezai 2012).

There are two theoretical processes involved in literature regarding vocabulary learning (Tinkham,1997). One of the processes is called 'linguistic process' which favours semantic clustering, and the other one is 'cognitive process' of which words are clustered within one 'schema' or 'frame'. Lexical semanticists proposed the latter. According to lexical semanticists, speakers organize words in 'frames' or schema' subconsciously (Fillmore, 1985). Information is organized with regards to background knowledge rather than semantic fields. Filmore & Atkins (1992) explain schemas and frames:

> Speakers can be said to know the meaning of the word only by first understanding the background frames that motivate the concept that the word encodes. Within such an approach, words or word senses are not related to each other directly, word to word, but only by way of their links to common background frames and indications of the manner in which their meanings highlight particular elements of such frames (p.77).

Schema theory supports the background of thematic clustering. Schema theory developed by Bartlett (1932) investigates how old information affects the acquiring of new information, and it has a psychological perspective of people's interpretation of the words. Bartlett (1932, p. 201) defines schema as "…an active organization of past reactions, or of past experiences, which must always be supposed to be operating in any well-adapted organic response".

Tinkham (1997, p. 139) lists example words, which can be taken from the schema "frog" of a speaker's mind. The words "pond, hop, swim, green, slippery" are words related to "frog" schema. These words share different syntactic properties such as verb, noun, and adjective. They are associated with a common thematic concept of 'frog'. An example of a course book which provides L2 words in thematic clusters is *Coast to Coast 3* (Harmer and Maybin, 1989). The words "Haunted, moonlight, yell, ghost, groan" were presented together which form a thematic cluster of fright associated words.

One of the studies that involved thematic clustering is Hippner-Page's (2000) quasi-experimental study which aimed to compare the use of semantic and thematic clusters for L2 learners. The subjects were 3rd, 4th, and 5th grade students from two schools with similar characteristics. The subjects were divided into two groups: group A, including eight ESL students from one school and group B, six ESL students from the other.

To begin with, the subjects were given a written survey so that information about how they had previously been learning L2 words could be elicited. Then, they received a pre-test to identify which words were known or unknown by the subjects. All the tests in this study involved matching pictures with related words. Following this, group A was taught 10 semantic words whereas group B was taught 10 thematic words. The teaching process included giving the subjects picture cards with written

forms of target words and discussion. Each group was given a written task after the instruction of the target words which required them to fill in the blanks of some sentences with the target words. They had a post-test immediately after the introduction lesson and another post-test three weeks later. The groups switched treatments and the same procedure was followed. Finally, interviews were conducted with all the subjects to find out how they felt about each instruction type. There was no significant difference found between presenting words in semantic or thematic clusters, and there was a "small difference between average number of words learnt after each treatment" (Hippner-Page, 2000, p .46). Results showed that both clusters were beneficial for students, and Hippner-Page (2000, p. 46) suggested language teachers use combination of vocabulary presentation strategies.

Contrary to the results of Hippner-Page (2000), Tinkham (1994, 1997) and Waring (1997) claimed that presenting L2 words in thematic clusters rather than in semantic clusters may avoid the negative effects of semantic clusters which cause confusion.

Tinkham (1994, 1997) conducted two studies, which were similar in terms of the data collection procedure and analysis. The aim of these studies was to compare the semantic, thematic and unrelated clusters of L2 words and both studies yielded results contributing to each other. In Tinkham's (1997) empirical study, subjects were 48 native English, sophomore level university students. The target words were artificial words created by the researcher and they were grouped in four clusters, in semantic, thematic, unrelated and unassociated. The difference between unassociated and unrelated cluster of words was that unrelated words were all from the same syntactic category but were not related with each other under any super ordinate concepts whereas unassociated cluster words were from different syntactic categories and were not related with each other in any kind of theme.

Two experiments were performed each including four studies two of which were in an oral modality and two in a written modality. The two experiments were different in terms of inclusion of target words; experiment 1 tested semantic and unrelated, thematic and unassociated words together whereas experiment two tested four clusters separately. In both experiments, the subjects were tested

in recognizing and recalling sessions of artificial L2 words. While recognizing in oral modality, the subjects listened to the artificial words and their corresponding words in English from a tape-recorder in sentences like '*Moshee* means *shirt',* and they were required to say the artificial word when they heard English words in the recognition sessions.

There was a two-week time gap between recognition and recall sessions and the time of subjects' trials to recall the artificial words were silently noted on a checklist by the researcher. The written modality followed the same procedure of oral modality, the only difference being that the subjects read the sentences from a computer during recognizing sessions and needed to type the artificial words during recall sessions. Finally, the subjects were also asked questions about their learning experiences with different clusters during the experiments. Tinkham (1997) pointed out the main result of the study:

> The major findings of this research were that semantic clustering of new L2 vocabulary items appeared to serve as a detriment to the learning of vocabulary while thematic clustering appeared to serve as a facilitator of learning (p.160).

In both experiments, the subjects learnt L2 words in unrelated clusters easier than those in semantic clusters. In addition, L2 words in thematic clusters were learnt easier than those in unassociated clusters. However, while the detrimental effect of semantic clusters was evident in the results, the effect of thematic clusters was 'less strong' and 'less consistent' over unassociated clusters. Qualitative data from the subjects yielded that L2 words in semantic cluster were difficult as the words were "too similar" or "all related" for both modalities. Most of them reported that the thematic cluster was the easiest to learn and some preferred unrelated cluster but none preferred semantic clusters. Tinkham (1997) calls for more research about thematic and unassociated clusters both of which gave positive but unclear results during the tests.

Tinkham (1997) concluded his study by suggesting:

> EFL teachers and coursebook writers in particular should take note of these results to
> ensure that learners do not meet new words that have been grouped semantically (p.267).

Waring (1997) agreed and advised:

> …to mix these words into a thematic rather than semantic arrangement instead. For example, *sweater, changing room, try on, cash register, wool, navy blue, striped* and so on may not show the same interference effects as *scarf, tie, coat, pants* and *skirt* (p.270).

Folse (2004) also notes that there is no definite result about the best way to organize new L2 vocabulary but there is a result about the wrong way to organize new L2 words: in semantic clusters. Folse (2004) agreeing with Tinkham (1997) and Waring (1997), suggested teaching L2 vocabulary in thematic clusters and provided an example:

> Here is a simple example of how words from the semantic sets of family members, animals, and days of the week could be distributed into the thematic set of a trip to the beach: Last Saturday I went to the beach with my brother and cousin. My brother wanted to take his pet bird with us, but my cousin and I talked him out of such a crazy idea. My cousin called his parents to make sure it was all right for him to go with us. Of course they said yes. We had a great time at the beach. We saw lots of people and lots of fish. When we got home Saturday night, we talked about going to the beach again on Sunday. We really tired, so we decided to get up late on Sunday morning (p.4).

Al-Jabri (2005) presented another study which aimed not only to compare the effects of using semantic, thematic and unrelated clustering but also to find out if meaningful context had an effect on learning L2 words. The subjects were 160 male native speakers of Arabic who were studying at university. 60 of them were freshmen, 60 sophomores and 40 were juniors. The study conducted had two parts: quantitative and qualitative. In the quantitative part, three levels of the subjects were divided into two groups: one receiving instruction of L2 words in semantic and unrelated clustering, and the other group in thematic and in context instruction. All groups were given two-page hand outs which included eight low frequency L2 words and their L1 equivalents on the first page and were asked to learn these words in four minutes. For contextualized presentation, they were given a text with underlined words of which meanings were written on the page, and five minutes were given to learn the target words. In following, the subjects were given an immediate recall test, which required them to write the L1 equivalents of L2 words. One week later, they were given a delayed recall test in the

same format. The second part of the study involved semi-structured interviews with 12 subjects from each level; six who learnt the highest number of words and six who learnt the lowest number. Results of the quantitative part of the study showed that in both immediate and delayed recall tests, the subjects recalled more words from thematic clustering which was followed by contextualized presentation, unrelated and semantic clustering. The qualitative part of the study yielded that the subjects used repetition, key word method, and use of sentences the most to learn L2 words. There was no clear preference of clusters but some subjects stated that semantic clustering was confusing as the words were too related, and some reported that they preferred unrelated clustering as the unrelated words were easier to learn.

A very recent study by Mirjalili, Jabbari & Rezai (2012) contributes to L2 vocabulary clustering research. The aim of the study was to examine three types of clusters (semantic, thematic, and unrelated) and two instructional approaches (isolation and context) with subjects from three different proficiency levels at the same time. Subjects were 90 female students studying at a language institute. They were aged between 18 and 25 who were at the elementary, pre-intermediate, and intermediate levels of English. L2 words were English and L1 words were in Persian. The subjects learnt six different vocabulary lists each containing eight L2 words (semantic cluster in context, thematic cluster in context, unrelated cluster in context, semantic cluster in isolation, thematic cluster in isolation, unrelated cluster in isolation). L2 words were similar in terms of structure and difficulty, and they were determined according to the results of a pre-test given to the subjects before the sessions started. The pre-test included writing the L1 equivalents of L2 words. If they knew any words, those words were excluded from the study. The first three sessions included semantic, thematic and unrelated clusters in isolation. In each session, the subjects were given a two-page handout. The L1 and L2 equivalents were listed on the first page and they were required to memorize them in four minutes. After four minutes, they turned to the second page and wrote the L1 equivalents of given L2 words. In the last three sessions, the same

procedure was followed for three clusters in context, but this time on the first page of the handouts L2 words were underlined in a text, and the subjects needed to read the text and understand the meanings. Results showed that semantic clusters impeded learning as subjects at all English proficiency levels recalled the semantic cluster words the least in both context and isolation. In addition, they recalled the highest number of words from unrelated cluster in isolation. On the other hand, L2 words in thematic cluster were recalled the most in context. Finally, proficiency level was not found to have a significant effect in determining the choice of L2 vocabulary clusters.

Despite all these studies which yielded results in favor of thematic clustering, a very similar study showed conflicting results. Al Shaikhi (2011) conducted a study in an EFL context with 58 adult male Saudi students who were at advanced level of an English intensive programme in a higher education institution. Target L2 words were divided into three lists; semantic, unrelated and thematic. The subjects were also divided into three groups where each received teaching in one clustering type. Each list included 15 L2 words and their L1 equivalents. The subjects studied these lists and immediately after received an L2 to L1 translation recall test. A week later, they were given a delayed test in the same format. The results showed that there was no significant difference among the three types of clustering for immediate translation recall tests. However, for delayed translation recall test, semantic and unrelated clusters yielded higher scores over thematic clustering. As a result, this study indicated that cluster types did not affect adult EFL students' retention of L2 words in short term whereas semantic and unrelated clustering was caused significantly more gains in the long term.

Below there is a table which presents all vocabulary cluster studies conducted with L2 words. As can be seen, all studies yielded data in favor of different clusters. However, it is necessary to mention that none of the studies included very young learners as subjects. Moreover, most of the studies used artificial L2 words and used memorization as a L2 vocabulary teaching method, which does not relate to a real L2 vocabulary teaching and learning atmosphere.

Table 1

Summary of L2 vocabulary cluster studies

Researcher(s) & Year	Subjects	Clusters Compared	L2 Words	Procedure	Results In Favor Of
Tinkham (1993)	University students.	Semantic and unrelated.	Artificial L2 words were used.	-L1 to L2 translation. (Number of trials noted).	Unrelated cluster.
Tinkham (1997)	48 university students. (sophomores)	Semantic, Thematic, unrelated, unassociated.	Artificial L2 words were used.	2 experiments. (oral & written) -Hear and say. (L1 to L2) -Read and write. (L1 to L2) Trials were noted. Interview.	Unrelated cluster.
Waring (1997)	20 (aged between 18-60).	Semantic and unrelated. L2 words	Artificial translation. were used.	L1 to L2 cluster. (Number of trials were noted).	Unrelated
Hippner-Page (2000)	14 3rd, 4$^{th, 5th}$ grades.	Semantic and thematic.	Real L2 words were used.	-Pre-test. -Teaching. -Written task. -Immediate post test. -Delayed post test.	Semantic and thematic.
Finkbeiner & Nicol (2003)	24 university graduates.	Semantic and unrelated.	Artificial L2 words were used.	-Computer-based. -Teaching (training, recognition, recognition.) -Translation in both ways.	Unrelated cluster.
Al Jabri (2005) (males)	160 university students.	Semantic, thematic, and used.	Real L2 words were -Memorization.	-Two page handouts. -Immediate test. (L2 to L1 translation.)	Thematic cluster.

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(Table 1 continued)

				-Delayed test. (L2 to L1 translation.) -Questionnaire.	
Hashemi & Gowdasiaei (2005)	60 (aged between 20-30)	Semantic and unrelated.	Real L2 words were used.	-Pre-test. -Teaching. -Post-test.	Semantic cluster.
Erten & Tekin (2008)	55 4th graders.	Semantic and unrelated.	Real L2 words were used.	-Pre-test. -Teaching. -Immediate post-test. -Delayed post-test.	Unrelated cluster.
Papathanasiou (2009)	31 intermediate children, 32 beginner adults.	Semantic and unrelated.	Real L2 words were used.	-Teaching (noticing, retrieval, generation). -Short-term definition test. -Long-term definition test.	Unrelated cluster.
Hoshino (2010)	46 university students.	Semantic, thematic, and unrelated.	Real L2 words were used.	-Teaching. (memorization). -Immediate testing. -Questionnaire.	Semantic cluster.
Al-Shaiki (2011)	58 male adults.	Semantic, thematic, and unrelated.	Real L2 words were used.	-Lists given to be studied. -Immediate test. (L2 to L1 translation). -Delayed test. (L2 to L1 translation).	Delayed tests favored semantic, and unrelated.
Mirjalili, Jabbari & Rezai(2012)	90 females (aged between 18-25).	Semantic, thematic, and unrelated in context and isolation.	Real L2 words were used.	-Pre-test. -Two page handouts. -Memorization. -Immediate test.	Unrelated in isolation, thematic in

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(Table 1 continued)

| | (L2 to L1 translation). | context. |
| | -Delayed test. (L2 to L1 translation). | |

To sum up, all the findings about the three clusters of presenting new L2 words and research gaps were conflicting, and more studies need to contribute to this controversial area of L2 vocabulary clusters.

The present study aims to fill this gap by adding the dimension of very young EFL learners to L2 vocabulary clusters topic. A pilot study was conducted to determine the procedure and to test the credibility of the data collection tools. In the pilot study, 32 five year old EFL learners were included and data was collected through a pre-test that aimed to determine the target L2 words to be used in the study and an immediate recall test which aimed to explore whether or not cluster types had any effects on the retention of L2 words by very young EFL learners. Immediate recall test was conducted right after instruction lessons for each cluster. The pilot study's surprising results in favor of unrelated clusters over the other two types of clusters enabled the researcher to design a more detailed procedure for data collection for the present study which can yield more information about very young EFL learners' choice of vocabulary clusters. With the experience and outcomes from the pilot study, this study aims to investigate if the effect of vocabulary clusters is present for very young EFL learners. Moreover, immediate and delayed effects of vocabulary clusters are explored to find out if there are any effects of vocabulary cluster types in short and long term and if these effects are similar or different from each other.

CHAPTER III

METHODOLOGY

The purpose of this study was to find out if presenting new L2 words to very young EFL learners in semantic, thematic or unrelated clusters had any effects on the retention of the target words. Moreover, short and long term effects of different clusters were explored. To achieve these aims, quantitative research methods were used. Retention of the target words was measured using immediate and delayed recall tests and the results were assessed with quantitative methods.

So, the following two research questions were addressed in this study:

1. Does presenting new L2 vocabulary in different clusters –semantic, thematic, and unrelated- have any effects on learning and retention of the target words by very young EFL learners?

2. Are there any differences between the immediate and delayed recall responses among the three vocabulary clusters? If so, what are they?

In this chapter, the research questions, setting, subjects, the procedure followed, data collection instruments used in line with the purposes of the study, and methods of analysis were explained in detail.

Setting

The setting of the present study was a private preschool in Istanbul, Turkey. It is necessary to mention two important issues related to the setting: the language context and pre-primary education in Turkey.

In Turkey, English is a foreign language. It is essential to explain the distinction between a foreign and a second language which is clearly made in the literature. A second language has social

functions and it is actively used in the community where it is learnt whereas a foreign language is generally learnt in a classroom setting for the purpose of communicating outside one's community (Littlewood, 2006, p. 2). In Turkey, English is not spoken in the community as a second language. Students learn English at schools but do not need to speak English in their daily lives which often results in less effective and/or slower acquisition of the language.

Pre-primary education in Turkey is given at different institutions which are listed under the main heading "pre-primary education" in the National Education Statistics (2011, p. 11). These institutions include independent kindergartens, nursery classes within a primary school (public/private), summer kindergartens, and mobile kindergartens. Summer kindergartens only provide education to 60-72 month-old students whose parents are working during summer time. Mobile kindergartens are for 36-72 month-old students whose families' have low incomes. Besides these two kindergartens, very young learners go to either independent kindergartens or private/public nurseries within a primary school. However, public pre-primary education institutions do not have foreign language lessons in their curriculum. Being aware of this deficiency, the Ministry of Education in Turkey is planning to have a foreign language education system for the forthcoming years (Alpman, 2010). Independent kindergartens may have contractual foreign language teachers However, as it is not obligatory, the presence of English lessons and the number of English lesson hours vary among all independent kindergartens. On the other hand, private schools' nurseries have a good number of foreign language lessons in their curriculum and they provide students with a specified number of English lessons. The lesson hours also vary among private nurseries.

This study took place at a nursery within a private primary school. There were 10 English lessons per week in the curriculum. Five of these lessons were taught by native teachers and five were taught by Turkish English teachers. The English syllabus was designed according to the coursebook's units. As the target words were grouped semantically in the coursebook which was used by both English teachers, the target words in the syllabus were also grouped in semantic sets. Students were to

master the pre-determined L2 words in a semantic set and when that semantic set were taught for several weeks, L2 words in a different semantic set were to be taught. English lessons included songs, games, listening, point/colour/draw/number/speaking and role play activities which involved target words in a semantic set.

Subjects Of The Study

The target population of this study is very young learners of English as a foreign language, studying at private preschools. Convenient sampling was used in this study to determine the participants because of the time constraints and availability. As a result, three classes at a private nursery where the researcher taught at were included in the study. Class A had 17 students, whereas class B had 19 and class C had 18. In total, the sample consisted of 54 students including 25 males and 29 females. However, during the different stages of data collection the number of participants decreased to 53 due to the absences during teaching and review sessions, which is also explained in the results and discussion section.

The participants' mother tongue was Turkish and came from families with a high socio economic background. The participants were five years old and started learning English at the beginning of the 2011-2012 academic year. Therefore, they were all at the beginner level of proficiency in English. They received 10 hours of English lesson weekly. There were two English lessons in a day: one in the morning and one in the afternoon. Each lesson lasted 35 minutes and one of these lessons was taught by a Turkish teacher and the other by a native speaker of English. The current English course book and yearly plan for very young learners included teaching L2 words in semantic clusters.

Research Design

This is a study which employs quantitative research methods. Quantitative research methods not only aim to clarify a cause and effect relationships but also provide positive evidence for education. Moreover, it helps the researcher look at common or specified characteristics of a chosen population, which enables him/her to generalize the relationships among variables in the study (Hochman, 2006). Quantitative research method was chosen as this study investigates the cause and effect relationship of three different clusters and L2 vocabulary retention. There were three independent categorical variables: semantic, thematic and unrelated clusters, and one dependent variable: retention of L2 words. The collection of data was fixed and the design was made prior to the data collection. Setting was controlled in order not to cause any differences during the teaching, reviewing and testing stages among the three classes. The data was collected through the immediate and delayed recall tests to answer the two research questions. The aim was to explain the quantitative results which makes this study an explanatory research. Quantified data was analyzed with SPSS to report the results objectively. With a sample of the target population and statistical results about their retention of L2 words, very young learners' choice of vocabulary clusters while learning L2 words was aimed to be investigated.

The study is a quasi-experimental one as variables were controlled by the researcher and as the subjects were selected by convenient sampling. The data was collected by the researcher which also makes this study a primary research.

Data Collection Instruments

Data collection was done through three instruments: pre-test, giving instruction using 3 different clusters and immediate/delayed recall tests.

Pre-test. A pre-test designed by the researcher was used in this study. The aim of the pre-test was to determine the target L2 words to be included in the study and to assure that all of those words were new for all the subjects. This was essential for the reliability of the results. As, any previously known L2 words by any subject would have caused ease of retention which would have affected the results negatively. Pre-tests were used in many of the studies mentioned in chapter two. Mirjalili, Jabbari & Rezai (2012) expected their subjects to write the L1 equivalents of given L2 words in the pre-test whereas Hippner- Page (2000) and Erten & Tekin (2008) made the subjects match the target L2 words with related pictures. The format of the pre-tests was determined by the age group of the subjects. Mirjalili, Jabbari & Rezai's (2012) subjects were university students but Hippner-Page's (2000) and Erten & Tekin's (2008) subjects included participants from the 3rd, 4th, and 5th grades. For this study, as the subjects did not know how to read and write in neither English nor Turkish, a matching or a translation format was not suitable for the pre-test. As a result, the subjects were called to an empty classroom one by one and they were shown all the pictures of the target L2 words. The researcher asked them if there were any words that they knew in English among the pictures. If the subjects knew the English equivalent, that word was to be excluded from the study and substituted with another suitable word and tested again. If the subjects could not give any answers, L2 words were not spoken by the researcher at this point.

The pre-test took place a week before the instruction lessons started. The subjects, one by one, saw all the target word pictures and were asked to provide their L2 equivalents if they knew any. None of the chosen target words were known by the subjects. This was predicted from the pilot study's pre-test process. As a result, there was no need to substitute the target words.

Instruction and review lessons with three cluster types. Instruction and review lessons were planned by the researcher both based on the experience got through the pilot study and in line with the aims of the study. The aim of the instruction lessons was to present and introduce new L2 words to the subjects. The instruction lessons lasted 35 minutes which was divided into three stages: introduction with flashcards (App. B) -10 minutes- , review with PowerPoint slides -10 minutes-, review with mini cards -15 minutes-. Through the instruction lesson, the subjects learnt the target six words in each cluster for the first time and repeated those words in the lesson with two different activities. The instruction lessons helped the researcher introduce the L2 words for the first time and prepare the subjects for the immediate recall tests. Review lessons were also planned by the researcher and were taught three days in a row for 25 minutes which included last two stages of the instruction lesson: review with PowerPoint slides -10 minutes-, review with mini cards -15 minutes-. The aim of the review lessons was to make the subjects to transfer and store the target L2 words in their long-term memory and to prepare them for the delayed recall tests.

Immediate and delayed recall tests. Immediate and delayed recall tests were developed for this study by the researcher according to the objectives and subjects' characteristics. In the literature, recall tests, in other terms 'post-tests' or 'definition tests', used to evaluate the retention of L2 words, were designed in several formats. Some of these required the subjects to say/write the L1 / L2 words, some required them to translate, and some to match the pictures with related L2 words. When the age group and their abilities were considered in this study, very young learners were not able to complete any of the recall test formats mentioned above as they include writing/ reading of L1/L2 words. As a result, in this study there was no reading or writing tasks; instead, the subjects were asked to show the correct picture of a L2 word which was spoken by the researcher. Immediate and delayed recall tests were both in the same format, and the same procedure was followed in both.

Immediate recall tests took place immediately after the instruction lessons. The aim of the immediate recall tests was to measure the subjects' retention of L2 words in the short-term and to compare their scores for three clusters. The subjects, one by one, were called to an empty classroom where there were six target word flashcards on the wall. The researcher pronounced an L2 word, and the subject was required to point to the correct picture. The L2 words were asked in random order to avoid any memorization of the words' order from the instruction lesson. While the subjects were showing the pictures, the researcher silently noted down if their answers were correct or incorrect. The subjects were informed that they could say they did not remember the answer. If they did so, this was noted as a wrong answer by the researcher. No feedback was provided while participants were pointing to the pictures. However, when they finished, the subjects were informed about their performance.

Delayed recall tests took place three days after the instruction lessons. The same procedure was followed as in the immediate recall tests. However, this time the aim was to measure the subjects' recall of target words after three days of review and to see if there was any significant difference among the three clusters' delayed recall test scores.

As there were three clusters included in this study, immediate and delayed recall tests were done three times for each class. Translation tasks were not chosen for recall tests since translation was not an English teaching method of L2 vocabulary at this private preschool. Making subjects translate from L1 to L2 or vice versa would have been a challenging task which may have hindered their true performance. As a result, a familiar task –listen and point- was chosen. It was also coherent with the format of the pre-test and the instruction lesson activities. The subjects' were not also made pronounce the words since a mispronunciation would not have meant that they did not know the L2 word.

Pilot Study

A pilot study was conducted a year ago to explore if very young learners show specific characteristics while learning new L2 words in different clusters. In addition, it was also aimed to identify any problems with the design and data collection process of the study. There were 32 subjects who were five year olds. They were the students of the same private preschool as in the present study. However, that year the lessons were 30 minutes. Three clusters were included in the pilot study: semantic, thematic, and unrelated. Six L2 words were chosen for each cluster. The subjects were divided into three groups, one group of 10 students, and two groups of 11 students. Each group received teaching of L2 words in only one type of cluster. There were three main stages of the study: pre-test, teaching session and immediate recall test.

A pre-test was designed to select the target words that the subjects did not know. Each group's students were called to a classroom one by one and were asked if they knew any of their groups' target words in English. Any known words were excluded and suitable words were included and tested in the same way. The teaching session was fixed and lasted 30 minutes. In the first ten minutes, the subjects saw the pictures of L2 words and the researcher pronounced the L2 equivalents. Through this step, the subjects noticed the pictures and pronunciation of the L2 words. In the second ten minutes, students individually went through the L2 words by showing corresponding pictures which the researcher asked in L2. This enabled the subjects to retrieve what they had learnt. In the last ten minutes of the lesson, students were asked to say the L2 words on the flashcards pointed to by the researcher. This was the generation and production part of the L2 words. Immediately after the teaching session, the subjects received an immediate recall test. They were called to an empty classroom one by one and were asked to point to the picture the researcher pronounced. Their answers were noted down by the researcher as correct or incorrect.

The results were analyzed with descriptive statistics. As can be seen in the table below, the subjects remembered the L2 words in the unrelated cluster the most followed by the thematic cluster. The lowest retention of L2 words were from the semantic cluster.

Table 2

Differentiation of total scores and means applied to set groups in the pilot study

	Groups	N	Mean	SD	F	p
	Semantic set	10	3,400	1,350		
Sum	Thematic set	11	4,091	1,868	1,529	0,234
	Unrelated set	11	4,727	1,902		

After having recognized a considerable difference in the retention of L2 words among the three clusters in the pilot study, the present study was designed and conducted. From the experience of the pilot study, some changes and additions were made to the present study. Following the experience and outcomes of the pilot study, in the present study all subjects received L2 word teaching in all types of clusters to avoid the effect of individual differences. Moreover, as the lessons were 5 minutes longer, a new instruction lesson plan was made. Finally, a delayed recall test was added in the present study to learn more about the three clusters' effect in the long term as well as the short term.

Procedure

The design of the study was fixed and the setting was controlled as explained in the following paragraphs. In this study, the procedure had four main steps. In the first step, six semantically-related, six unrelated and six thematic L2 words were pre-tested to discover if any of the participants knew any of the target words. This was done by calling the participants to a classroom one by one and showing them flashcards of all target L2 words on which only pictures were displayed. The participants were asked to say the names of the pictures in English if they knew them. The words which were known by the participants were to be excluded from the study and replaced by another suitable word. The

replaced words were to be pre-tested with all participants again until none of the participants knew any of the target words. When the participants did not know target words in L2, correct answers were not provided to them at this step of the study. This step enabled the researcher to ensure that all the target L2 words were new to all participants which was vital for the validity of the study. As previous knowledge of any L2 target words by any participant would have affected the results of the study negatively. Fortunately, none of the target L2 words chosen by the researcher were known by the participants. This must have happened since foreign language teachers are mostly the only source of information in an EFL setting. As a result, both as a researcher and language teacher, the target words were chosen according to the participants' previous knowledge of English.

Several issues were taken into consideration while forming the clusters. To begin with, all clusters included six words (see Appendix A). The reason for this was to avoid extra burden on the participants which contributed to the validity of the results. Had more words been used, the purpose of the study would have moved away from the effects of using different clusters to the effects of the number of words participants can retain. Moreover, when the cognitive readiness and capacity of very young learners are taken into consideration, teaching more than six to eight new L2 words at a time would have been an unrealistic goal for the study. The target words in all clusters were selected from concrete words which were suitable to the subjects' cognitive readiness. Moreover, none of the words were cognates which could have eased subjects' retention of the words (Erten, 1998). The length of the words was also taken into consideration. All the words in three clusters were of similar length – one or two syllables- so that the brevity of the words would not have any effect on any particular cluster of words. Finally, words were chosen according to their pronunciation differences. Words which sounded like each other were not included so that participants would not mix them up.

The second step of the procedure was the instruction lesson which was done in all classes with all clusters on the first day of the week. Six L2 words from the semantic cluster were presented to class A, B and C on the first day in the morning lessons. Instruction lessons for all classes lasted 35 minutes

during which the target words were presented and practiced with flashcards and orally by the subjects and the researcher. The subjects were provided with both visual and aural input at the same time. The instruction lessons were divided into three stages. First stage, which lasted 10 minutes, aimed at presenting the new L2 vocabulary. The participants were shown the flashcards of six target L2 words one by one. The researcher pronounced L2 equivalents of the flashcards and the participants pronounced the target words right after the researcher. Any misunderstanding of the meanings of L2 words were clarified by the researcher at this stage. The participants noticed the pictures, understood the meaning and pronunciation of L2 words at this stage. This was done three times by the researcher. The next two stages aimed at practicing new vocabulary in two different activities. In the first 10 minutes of the review, the researcher used a PowerPoint program which aimed at practicing the target words. The researcher pronounced an L2 word and the subjects were asked to find the correct picture of the L2 word among the target words' pictures. If the subjects chose the correct word, the Powerpoint game gave positive feedback with an applause sound. However, if the answer was incorrect, the game provided a grumpy sound and directed them to the same pictures again. The next 15 minutes also included review. The subjects were given mini-cards of the target L2 words on which there were pictures of the target words. They showed the correct flashcard after the researcher pronounced its L2 equivalent. Repetition of the target L2 words was done as it helps very young learners learn the target L2 words. Below is a table which summarizes the introduction lessons:

Table 3

Three stages of instruction lessons

Stages	Time	Activity
Introduction of new L2 vocabulary	10 minutes	Presenting new L2 words via flashcards
Review of vocabulary	10 minutes	Practice of the L2 words via

a Powerpoint game.

Review of vocabulary	10 minutes	Practice of L2 words via
		mini-cards distributed to all students.

The third step was called the immediate recall test which was done immediately after the instruction lessons. The aim of this test was to find out the effect of different clusters on the participants' short-term memory which stores a limited amount of information for a short period of time. Right after the instruction lessons, subjects were called to another room one by one. The researcher pronounced the name of each flashcard and they tried to show the correct flashcards (picture naming task). Correct and incorrect answers were noted by the researcher. This provided data about the effects of different clusters of new L2 words on very young learners' L2 vocabulary learning. The recall tests were in line with the vocabulary instruction lessons so that students were not loaded with an extra burden of completing an unfamiliar task.

The fourth step of the procedure included the reviews of the L2 words learnt in the instruction lessons and were carried out after the instruction lessons for each cluster. The aim of the review was to enable the participants to transfer their knowledge of words from short term memory to long term memory and store them there. Reviews were done three days in a row. Each day a review lesson was done with all the classes. Review lessons lasted 25 minutes. The last two steps of the instruction lessons were applied in the reviews. As a result, a 10 minute review with the PowerPoint game and a 15 minute review with mini-cards was done on each day of the review.

The last step was carried out at the end of the week and this step is called delayed recall test. The participants were again called to a classroom one by one by the researcher and the same picture naming task as the immediate recall test was carried out. This step provided data on the delayed effects of different clusters after reviews.

Total time needed for the procedure to be completed was sixteen days. The procedure explained above was carried out three times with three different cluster types. Below you can see a summary of the whole data collection process:

Table 4

The procedure followed in the study

Pre-test with all classes

Week 1

	Class A	Class B	Class C
Day 1	Semantic-cluster instruction lesson	Semantic cluster instruction lesson	Semantic cluster instruction lesson
	Semantic-cluster immediate recall test	Semantic cluster immediate recall test	Semantic cluster immediate recall test
Day 2	Semantic cluster review	Semantic cluster review	Semantic cluster review
Day 3	Semantic cluster review	Semantic cluster review	Semantic cluster review
Day 4	Semantic cluster review	Semantic cluster review	Semantic cluster review
Day 5	Semantic cluster delayed recall test	Semantic cluster delayed recall test	Semantic cluster delayed recall test

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Week 2

	Class A	Class B	Class C
Day 1	Unrelated cluster instruction lesson	Unrelated cluster instruction lesson	Unrelated cluster instruction lesson
	Unrelated cluster immediate recall test	Unrelated cluster immediate recall test	Unrelated cluster immediate recall test
Day 2	Unrelated cluster review	Unrelated cluster review	Unrelated cluster review

(Table 4 continued)

	Class A	Class B	Class C
Day 3	Unrelated cluster review	Unrelated cluster review	Unrelated cluster review
Day 4	Unrelated cluster review	Unrelated cluster review	Unrelated cluster review
Day 5	Unrelated cluster delayed recall test	Unrelated cluster delayed recall test	Unrelated cluster delayed recall test

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Week 3

	Class A	*Class B*	*Class C*
Day 1	Thematic cluster instruction lesson	Thematic cluster instruction lesson	Thematic cluster instruction lesson
	Thematic cluster immediate recall test	Thematic cluster immediate recall test	Thematic cluster immediate recall test
Day 2	Thematic cluster review	Thematic cluster review	Thematic cluster review
Day 3	Thematic cluster review	Thematic cluster review	Thematic cluster review
Day 4	Thematic cluster review	Thematic cluster review	Thematic cluster review
Day 5	Thematic cluster delayed recall test	Thematic cluster delayed recall test	Thematic cluster delayed recall test

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Data Analysis

In this study, data collected through immediate and delayed recall tests was analyzed using SPSS (Statistical Package for Social Sciences) 17.0 version for Windows. Data was evaluated with descriptive statistics (number, percentage, average, standard deviation).

While data is being analyzed, if the subject number is not enough or though the subject number is enough but the data does not fulfill parametric assumptions, non-parametric methods are used (Kalayci, 2008). As the variables in this study do not show a normal distribution, non-parametric methods were chosen for the data analysis. As a result, Wilcoxon test was used for comparing the

differences of quantitative data between two dependent variables. Kruskal Wallis test was used to compare parameters among groups when there are more than two variables. In addition, Man Whitney U test was administered to identify which group the differences derive from.

Data gathered for this study was evaluated with a 95% reliability range and a 5% level of significance.

Summary

In this chapter, the methodology of the present study is presented in detail. Research questions, data collection tools and data analysis of the study is summarized below:

Table 5

Summary of the study

Research Questions	Data Collection	Analysis
1. Does presenting L2 vocabulary in different clusters –semantic, thematic, and unrelated- have any effects on learning and retention of the target words by very young EFL learners?	-Pre-test.	-Kruskal Wallis test.
	-Immediate recall test.	-Man Whitney U test.
2. Are there any differences between the immediate and delayed recall responses among the three vocabulary clusters? If so, what are they?	-Delayed recall test.	-Wilcoxon test.

CHAPTER IV

RESULTS AND DISCUSSION

In this chapter, the results of the statistical analysis of the data collected with the immediate and delayed recall tests are reported. Firstly, the results of the statistical analysis for the following research questions are presented.

Research Question 1: Does presenting second language vocabulary in different clusters have any effects on learning and retention of the target L2 words by very young learners of English?

Research Question 2: Are there any differences between the immediate and delayed recall responses among the three vocabulary clusters? If so, what are they?

Finally, more results in relation with the study are presented under the title of other results related to the study.

Findings Related To The Research Questions

This part presents the statistical analysis of data collected to answer the research questions in the study. To begin with, the immediate and delayed recall test responses of the subjects to L2 words in three types of vocabulary clusters and the comparisons of the three clusters' recall test results are reported in order to answer the second research question concerning the immediate and delayed effects of three clusters and their comparisons. Finally, recall test results and the comparisons of three clusters are used to answer the first research question which aims to find out if presenting new L2 words with different types of clusters has any effects on the retention of the target L2 words.

All subjects received immediate recall test of each cluster type right after the instruction lesson of six new L2 words. The results of this test enabled the researcher to explore if there was any

significant difference in subjects' retention of L2 words among three clusters in short term. Below is a table which shows subjects' immediate recall test mean scores of L2 words' retention in three clusters and their comparisons.

Table 6

Kruskal Wallis H and Mann Whitney U analysis results showing the distribution of the three clusters' immediate recall test scores

	Clusters	Number	Mean	SD	KW	p
Total Scores of	Semantic	53	2,717	1,277		
Immediate Recall	Thematic	51	4,373	1,038	82,349	**0,000**
Tests	Unrelated	51	5,392	0,85		

Kruskal Wallis H test was applied to identify whether or not there was a significant difference in the mean scores of immediate recall test among cluster variable. Kruskal Wallis H test enabled the researcher to compare parameters among groups when there were more than two variables. Results of Kruskal Wallis H test revealed that there is a significant difference among three clusters' total immediate recall test average scores. (KW=82,349; p=0,000<0,05). *P* value less than 0,05 indicates a significant difference whereas, *p* value greater than 0,05 indicates no significant difference among the clusters. Mann Whithey U test was applied to find out which group the differences derived from. According to the results of Mann Whitney U test, thematic cluster's immediate recall test mean score is significantly higher than semantic cluster's (Mann Whitney U=443,000; p=0,000<0,05). This shows that very young EFL learners benefitted from learning L2 words in thematic cluster significantly more that learning L2 words in semantic cluster. Unrelated cluster's immediate recall test mean score is also significantly higher than semantic cluster's (Mann Whitney U=133,000; p=0,000<0,05). This clearly shows that the subjects learnt significantly more L2 words in unrelated cluster than in semantic cluster. Finally, unrelated cluster immediate recall test mean score is significantly higher than thematic

cluster's (Mann Whitney U=592,000; p=0,000<0,05) which indicates subjects learnt significantly less number of L2 words in thematic set than in thematic cluster. In other words, very young EFL learners got the highest scores in immediate recall test from unrelated cluster of which total mean score is 5,392. This score was followed by thematic cluster with a total mean score of 4.373. Finally, the lowest scores were from semantic cluster of which total mean score is 2,717.

The subjects also received delayed recall tests for three clusters after three days of review. By doing this, the researcher was able to compare the results of subjects' new L2 words' retentions among three clusters in long term. Below is a table which shows subjects' delayed recall test mean scores of L2 words' retention in three clusters and their comparisons.

Table 7

Kruskal Wallis H and Mann Whitney U analysis results showing the distribution of the three clusters' delayed recall test scores

	Clusters	Number	Mean	SD	KW	p
Total Scores of	Semantic	53	4,358	1,388		
Delayed Recall	Thematic	51	5,627	0,720	58,956	**0,000**
Tests	Unrelated	51	5,922	0,392		

Kruskal Wallis-H test was applied to identify whether or not there was a significant difference in the mean scores of delayed recall test among cluster variable. Results of Kruskal Wallis H test revealed that there is a significant difference among three clusters' delayed recall test mean scores (KW=58,956; p=0,000<0,05). *P* value less than 0,05 indicates a significant difference whereas, *p* value greater than 0,05 indicates no significant difference. This explicitly indicates that L2 vocabulary cluster types had a significant effect on the retention of L2 words by very young learners. Mann Whithey U test was applied to learn about which group caused the differences. According to the

results, thematic cluster's delayed recall test mean score is significantly higher than semantic cluster's (Mann Whitney U=614,000; p=0,000<0,05). Unrelated cluster's delayed recall test mean score is also significantly higher than semantic cluster's (Mann Whitney U=431,500; p=0,000<0,05). Finally, unrelated cluster delayed recall test mean score is significantly higher than thematic cluster's (Mann Whitney U=1050,500; p=0,005<0,05). In other words, the subjects got the highest scores in delayed recall tests from unrelated cluster of which total mean score is 5,922. This score was followed by thematic cluster with a total mean score of 5,627. Finally, the lowest scores were from semantic cluster of which total mean score is 4,358. These results clearly suggests that L2 vocabulary retention in long-term is significantly enhanced by using unrelated clusters than the other clusters. Moreover, it is evident that presenting L2 words in semantic clusters hinders the retention of those words significantly in long term by very young EFL learners.

When immediate and delayed recall test mean scores are compared, it is clear that in both recall tests, subjects followed a similar pattern; they recalled most L2 words from unrelated cluster which is followed by thematic cluster. The subjects recalled the least L2 words from the semantic clusters in both recall tests. This clearly shows that there is no difference between immediate and delayed effects of clusters.

Figure 1
 Immediate and delayed recall tests' mean scores.
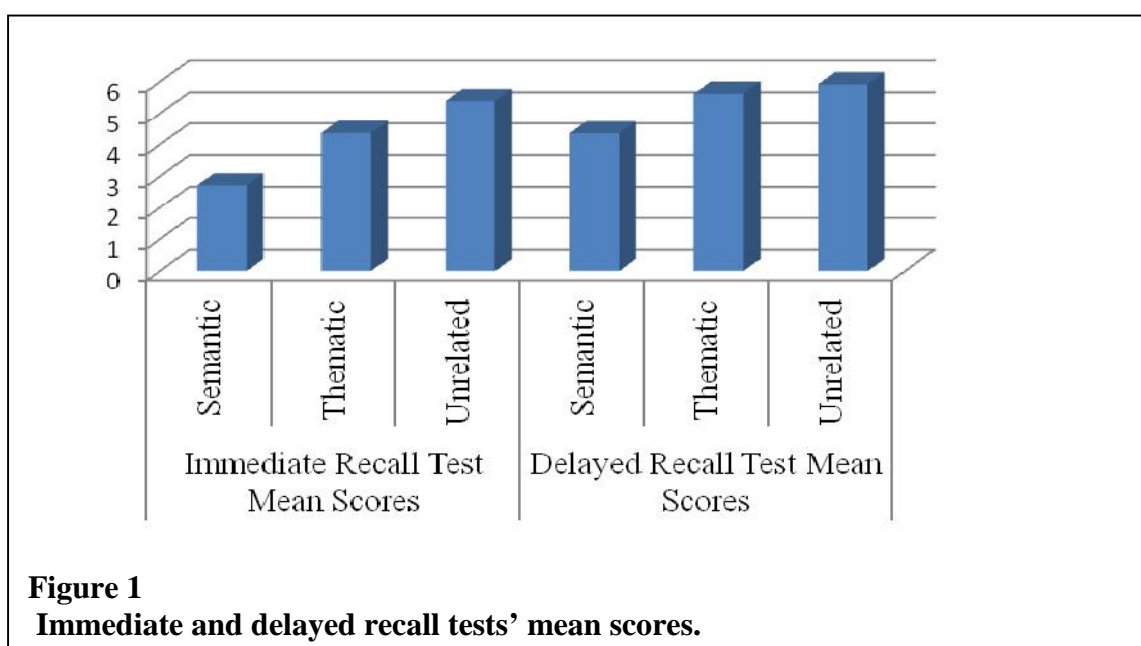
To sum up, results of the recall tests and their statistical analyses showed clear answers to both research questions of the study. Kruskal Wallis H tests applied to both immediate and delayed recall test scores yielded significant differences among all clusters. This explicitly showed that cluster types had vital effects on very young EFL learners L2 vocabulary retention. Mann Whitney U tests also proved that in both immediate and delayed recall tests unrelated cluster type had a positive effect on the subjects' L2 vocabulary retention whereas; semantic cluster had a negative effect. This makes it evident that while learning new L2 words, very young EFL learners benefit from the same cluster types in both short and long term.

Other Findings Related To The Study

This part presents the results of Kruskal Wallis H tests and Wilcoxon test which were applied to increase the reliability of the study and to show the effect of L2 vocabulary reviews done during the study. Though these tests do not directly answer the research questions of the study, they are vital for the reliability and different studies' findings which are related to the learning characteristics of very young EFL learners.

To begin with, as mentioned in the methodology part, since having more participants with similar characteristics can provide more reliable clues about the common L2 vocabulary learning style of the target group, three classes were involved in this study. As the subjects started learning English as a foreign language at the same time and they were at the same age, they were expected to be at the same level of proficiency in English. To support this with quantitative research methods, Kruskal Wallis-H test was applied to identify whether or not there was a significant difference in the mean scores of immediate and delayed recall tests among class variable.

According to the results, there is not a significant difference across three classes in immediate recall test total scores of semantic clusters.(KW=0,509; p=0,775>0,05).Besides, there is not a

significant different among three clusters in delayed recall test total scores of semantic clusters. (KW=0,056; p=0,973>0,05). This is one of the indications that there is no English proficiency level difference among three classes.

Table 8

The differentiation among classes in semantic clusters

	Group	N	Mean	SD	KW	p
Semantic Cluster Immediate	Class 1	17	2,824	1,074		
Recall Test Scores	Class 2	19	2,632	2,632	0,509	0,775
	Class 3	17	2,706	2,706		
Semantic Cluster Delayed	Class 1	17	4,412	0,870		
Recall Test Scores	Class 2	19	4,316	1,493	0,056	0,973
	Class 3	17	4,353	1,730		

The results of Kruskal Wallis-H test applied for thematic cluster yielded similar results. No significant difference was found across the three classes' immediate recall test total scores of thematic clusters. (KW=0,229; p=0,892>0,05). Similarly, a significant difference was not found among three classes' delayed recall test scores of thematic cluster. (KW=0,670; p=0,715>0,05). These results contribute to the previous results and show that three classes English proficiency levels are similar.

Table 9

The differentiation among classes in thematic clusters

	Group	N	Mean	SD	KW	p
Thematic Cluster Immediate	Class 1	17	4,353	0,996		
Recall Test Scores	Class 2	18	4,278	1,074	0,229	0,892
	Class 3	16	4,500	1,095		
Thematic Cluster Delayed	Class 1	17	5,765	0,870		
Recall Test Scores	Class 2	18	5,556	1,493	0,670	0,715
	Class 3	16	5,563	1,730		

Finally, the Kruskal Wallis-H test was applied for unrelated cluster scores of three classes. No significant difference was found across classes' in either immediate recall test scores(KW=5,009; p=0,082>0,05) or delayed recall test scores (KW=1,020; p=0,600>0,05). In other words, according to results of Kruskal Wallis H tests applied to find out if there is a significant difference among the classes immediate and delayed recall tests for all cluster types, it is found that all classes are at the same English proficiency level and they do not significantly differ from each other in terms of English vocabulary knowledge and learning.

Table 10

The differentiation among classes in unrelated clusters

	Group	N	Mean	SD	KW	p
Unrelated Cluster Immediate	Class 1	17	5,471	1,125		
Recall Test Scores	Class 2	17	5,529	0,717	5,009	0,082
	Class 3	17	5,176	0,636		
Unrelated Cluster Delayed	Class 1	17	6,000	0,000		
Recall Test Scores	Class 2	17	5,882	0,485	0,670	0,600
	Class 3	17	5,882	0,485		

This study also yielded results about the effect of reviews done during the teaching of L2 words for each cluster type. Below is a graph which shows immediate and delayed recall tests mean scores in each cluster.
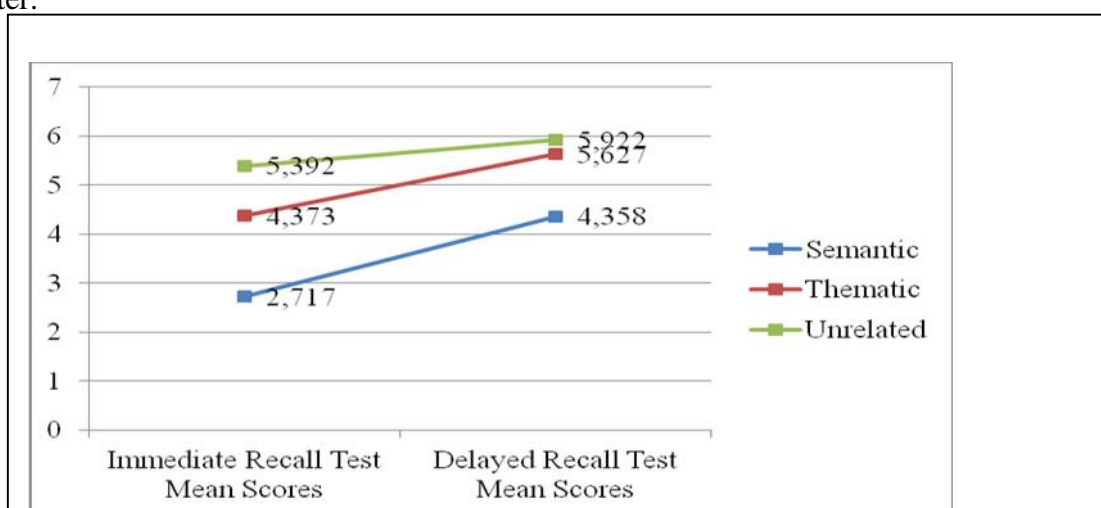

Figure 2
Immediate and delayed recall test mean scores

It is clear from the graph that there is an increase of scores between immediate and delayed recall tests in each cluster type. The increase was expected due to the reviews done after immediate recall tests. Wilcoxon test was applied to identify whether or not the increase between immediate and delayed recall test mean scores in each cluster type is significantly high. Wilcoxon test was chosen as the aim was comparing the differences of quantitative data between two dependent variables. According to the results, there is a significant difference between the increase in semantic, thematic and unrelated clusters' immediate and delayed recall test mean scores. In other words, it is evident from the results of Wilcoxon test, very young EFL learners significantly benefit from reviews while learning L2 vocabulary.

Table 11

Wilcoxon test results showing the significant difference between immediate and delayed recall tests in all cluster types.

Quantitative Measures	Immediate Recall Test (Before)		Delayed Recall Test (After)		N	Z	p
	Mean	SD	Mean	SD			
Semantic Cluster							
Delayed Recall Test and Immediate Recall Test Mean Scores	2,717	1,277	4,358	1,388	53	-5,585	**0,000**
Thematic Cluster							
Delayed Recall Test and Immediate Recall Test Mean Scores	4,373	1,038	5,627	0,720	51	-5,479	**0,000**
Unrelated Cluster							
Delayed Recall Test and Immediate Recall Test Mean Scores	5,392	0,850	5,922	0,392	51	-4,130	**0,000**

To sum up, the results of this study yielded a strong indication that vocabulary cluster types had a significant effect on the retention of L2 words by very young EFL learners. There is a strong and consistent evidence that in both short and long term, unrelated cluster was the most effective cluster type among three cluster types for L2 vocabulary retention whereas grouping L2 words in semantic cluster had a deterring and dilatory effect on the retention of those words by very young EFL learners. With all these empirical results about very young EFL learners L2 vocabulary learning preferences, it is necessary to organize the learning environment and curricula accordingly.

CHAPTER V

CONCLUSION

This part of the study includes discussions of findings and final conclusions drawn from them. In addition, implications related to the findings which can be applied for real classroom environment are explained. Finally, limitations of the study and suggestions for further research are presented.

This study had one main aim which was to investigate whether or not presenting new L2 words to very young EFL learners in different cluster types had any effects on learning and retention of those words. The effects of three cluster types were explored: semantic, thematic and unrelated. However, to investigate the main aim more profoundly, three more aims were also included in the study: (a) to find out if three cluster types had any effects on learning and retention of new L2 words by very young EFL learners in short-term (b) to explore if three cluster types had any effects on learning and retention of new L2 words by very young EFL learners in long-term (c) to detect any similarities or differences between short and long term effects of three cluster types by comparing very young EFL learners' retention rates.

When the first research question is considered, which is, "Does presenting L2 vocabulary in different clusters –semantic, thematic, and unrelated- have any effects on learning and retention of the target words by very young EFL learners?" findings show that type of grouping L2 words has significant effects on the retention of those words by very young EFL learners. In detail, very young EFL learners recalled significantly more new L2 words in unrelated cluster than in thematic and semantic clusters. In addition, they recalled significantly more new L2 words in thematic cluster than in semantic cluster. This clearly shows that presenting new L2 words to very young EFL learners in semantic clusters has a negative effect on their retentions of the target words whereas presenting new L2 words in unrelated clusters has a positive effect.

In relation to the second research question, which is "Are there any differences between the immediate and delayed recall responses among the three vocabulary clusters? If so, what are they?"

findings indicate that very young EFL learners benefitted significantly more from unrelated cluster than from thematic and semantic cluster in short term. Moreover, when short term effects are considered the subjects recalled significantly less number of L2 words from the semantic cluster than from unrelated and thematic clusters. Long term effects of three types of clusters on very young EFL learners are similar. In long term, the subjects remembered significantly more words from unrelated cluster than from thematic and semantic clusters. Besides, very young EFL learners' retention of L2 words in thematic cluster was significantly lower than unrelated cluster. Recall score of L2 words in semantic cluster were significantly lower than thematic and unrelated clusters in long term as well. These findings explicitly show that there is not a difference between the short and long term effects of three cluster types in terms of new L2 words' retention by very young EFL learners.

A final finding of this study should also be mentioned though it is not directly related with the research questions of the study. Review of target vocabulary in all types of clusters resulted in significantly higher gains by very young EFL learners. This study frankly shows that repetition is vital for expanding very young EFL learners' vocabulary size no matter which type of clustering is used.

When all findings of this study are considered, in both long and short term very young EFL learners benefitted from unrelated cluster significantly more than the other clusters. In addition, they recalled significantly less L2 words from semantic clusters than the other clusters. Although these findings contradict with Chanel's (1981), Gairns & Redman's (1986), and Seal's (1991) claims about benefits of learning words in semantic clusters, Aitchinson's (1994) explanation of mental lexicon organization, and findings of Hashemi & Gowdasiaei (2005) and Hoshino's (2010) studies, they are in line with interference theory and distinctiveness hypothesis, and the findings of Tinkham's (1993,1997), Waring's (1997), Finkbeiner & Nicol's (2003), and Erten & Tekin's (2008) studies. In other words, presenting new L2 words in semantic clusters impeded learning and retention of new L2 words and served as a 'detrimental effect' for very young EFL learners just like for Tinkham's (1993,

1997) university students, Waring's (1997) teenagers and adults, Erten & Tekin's (2008) young learners.

These results may be surprising and confusing for foreign/ second language teachers since it has been a long standing belief to present new L2 words in semantic clusters. This belief is also supported by the foreign/ second language course books' organization of presenting L2 words in semantic clusters. However, as mentioned in the literature view part, it is essential to base vital decisions about foreign/second language teaching on empirical findings rather than beliefs and theories.

There has been several explanations made by researchers (Finkbeiner & Nicol, 2003; Erten & Tekin, 2008, Papathanasiou, 2009) why presenting new L2 words in unrelated clusters but not in semantic clusters led significant gains in subjects' vocabulary knowledge which can also apply for this study. To begin with, learning new L2 words may not be in the same way that the mental lexicon is organized (Erten & Tekin, 2008). Aitchinson (1994) explains that one's mental lexicon is organized in semantic fields. However, this does not necessarily mean that the learning process of L2 words has to be in the same way. The subjects, as mentioned in inference theory, had to discriminate the meanings of L2 words in semantic clusters in their present lexicons which caused confusion due to similarity between vocabulary items and resulted in low retention of the target words. In other words, very young EFL learners may learn L2 words in unrelated clusters better but may store those words in their mental lexicons as an end product in semantic sets.

Another explanation can be that as one hears a word and activates all the interrelated words in his/her mind which is also supported by activation theory. This spread of related items' activation may have interfered with each other while learning L2 words in semantic clusters. Consequently, this may have affected learning and retention of the target words negatively. Finkbeiner & Nicol (2003) also supports this view by explaining the 'heightened' interference caused by presenting related words one after each other. That is to say, the extra burden of related words' repeated activation and the effort of discriminating among them may have weighed upon subjects' short term memories. Moreover, as

short term memory has a limited capacity and presenting new L2 words in semantic clusters resulted in weak connections between L2 words and their meanings. Though Hashemi & Gowdasiaei (2005) claim that the deep mental processing to discriminate words in semantic cluster is requisite and it results in permanent learning, the findings of this study shows that valuable and limited memory capacity tried to discriminate the meanings of the words in semantic sets instead of internalizing them. However, this obstacle disappeared when new L2 words were presented in unrelated cluster and distinctiveness of L2 words helped the memory capacity to internalize and recall the target words easily.

A final explanation of the results can be based on critical period hypothesis. In short, the critical period hypothesis claims that language learning during the critical period which coincides with the age of very young learners is more natural and easier. It can be easily deducted that very young EFL learners preferred learning new L2 words not related to each other which is a natural way of learning new words. When how we learn L1 words is considered, this result is meaningful. While learning a word in our mother tongue, our parents or the environment do not present words in semantic or thematic sets. We pick them randomly from the environment in meaningful contexts and situations, hence learn them naturally. Erten & Tekin (2008, p. 418) supports this view by commenting "We do not seem to learn words in semantic sets but as individuals in our natural language environment". As a result, very young EFL learners learnt and recalled L2 words in a natural way in this study as well in unrelated cluster.

To sum up, the findings of this study are clear indications that inference theory and distinctiveness hypothesis are present in very young EFL learners L2 vocabulary learning. They reflect their characteristics as natural language learners to their foreign / second language learning environment and benefitted significantly more from unrelated cluster whereas semantic cluster significantly hindered their retention of target words.

Implications

This study has essential implications for foreign/ second language teachers, L2 curriculum planners / writers, course book writers and educational researchers. As mentioned in the results and conclusions parts, the findings of the study showed that presenting new L2 words in semantic cluster impeded very young EFL learners' vocabulary learning. Thematic cluster resulted in significantly higher results than semantic cluster. However, very young EFL learners benefitted the most from presenting L2 words in unrelated cluster. These findings call for some fundamental changes in L2 vocabulary presentation for very young EFL learners. To begin with, curriculum planners / writers should avoid organizing target L2 words in semantic clusters in their curricula. As Waring (1997) points out close semantic sets such as numbers, ordinals, months, and days of the week can be taught together since teaching a number in a unit and another number in a another unit would be 'impractical'. With the exception of such close sets, words that can be grouped in a semantic cluster should be scattered in different units to avoid the effect of interference during teaching semantically-related words. This can be done by preparing a syllabus which includes tasks, stories, real-life related topics, situations which require problem solving. The course book writers should also include units which have the name of a task, a story, a real life related topic or a situation which requires problem solving in their books. This can enable them to mix thematic words with unrelated words which result in retention of significantly high number of words by very young EFL learners according to present study's findings.

The hardest part of these changes waits for foreign/ second language teachers. The reason is that most syllabi and course books which are presently used and available are designed with grouping L2 words in semantic clusters. However, as Waring (1997) also emphasizes, semantic clusters create a 'potential problem' for course books and language teachers should avoid presenting new L2 words in semantic clusters. Though foreign/ second language teachers are surrounded with problematic course

books and syllabi at the moment, they should present semantically-related L2 words separately from each other. They can prepare lessons and plans which include tasks, stories, situations, real-life related topics and present thematic and unrelated L2 words together, and as Waring (1997) suggests they can use present course books as revision books after students learnt semantic words separately. However, for the following years, foreign/ second language teachers should pay attention to choose course books and include syllabi in which L2 words are not presented in semantic clusters. In addition, they should also include review of target vocabulary and enable the students to hear the words repeatedly as the findings of this study explicitly indicates that reviews led to significant gains of L2 vocabulary by very young EFL learners. Moreover, with the absence of a national or a specific foreign language curriculum for very young learners is considered, curriculum planners should take the results of this study as an empirical ground and organize and offer a foreign language curriculum accordingly.

Finally, researchers can contribute to this topic by conducting related studies and they can also conduct researches on preparing a course book / syllabi which does not present L2 words in semantic clusters, but in unrelated and thematic clusters and evaluate its usability with very young EFL learners.

To sum up, considering the findings of this study, foreign/ second language teachers, L2 curriculum planners / writers, course book writers and researchers should pay close attention not to group new L2 words in semantic clusters to hinder the effect of inference which causes significantly low gains of target vocabulary. To provide very young EFL learners, it should be borne in mind that very young EFL learners are in a critical period and they learn a second/ foreign language naturally which requires the presentation of new L2 words in unrelated clusters.

Limitations

There were a number of limitations of the present study. To begin with, there was a limited number of subjects who studied a limited number of L2 words. So, more participants and more number

of target words needs to be considered for further studies. Secondly, this study took place at a private nursery in Turkey which had 10 English lessons per week. The findings may not be generalized to other school contexts. Thirdly, the study only involved teaching and testing of each cluster type for a week due to time restrictions. More time may be required to observe subjects' performances in an extended time period. Another limitation is that the recall tests and the teaching process required the subjects to listen and speak. Other skills may also be needed to be involved to learn more about cluster types' effects with older young learners. Finally, recall tests and the procedure was developed by the researcher for the present study. Replications of the study are needed to check the reliability of the data collection tools. Although this study has some limitations, it is vital for foreign/ second language teaching as it fills a research gap and gives a way to similar studies by providing an example.

Recommendations For Further Research

There are several recommendations for further research regarding the present study. First of all, to reach more generalizable findings about the preference of cluster type by very young EFL learners, studies with more number of subjects should be conducted. In addition, more number of L2 words can be included in the study to find more reliable results. Besides, researchers conducting a similar study can keep time while the subjects are giving their answers during recall tests to explore if cluster types also affect the speed of retention of very young EFL learners. Moreover, though generally very young learners do not know reading and writing, in some countries reading and writing are taught in nurseries. The study can be conducted with older young learners including reading and writing skills. Finally, a longitudinal study can be conducted in to order to see whether or not the effects of cluster types are present or there are any differences of their effects on very young EFL learners in the long run.

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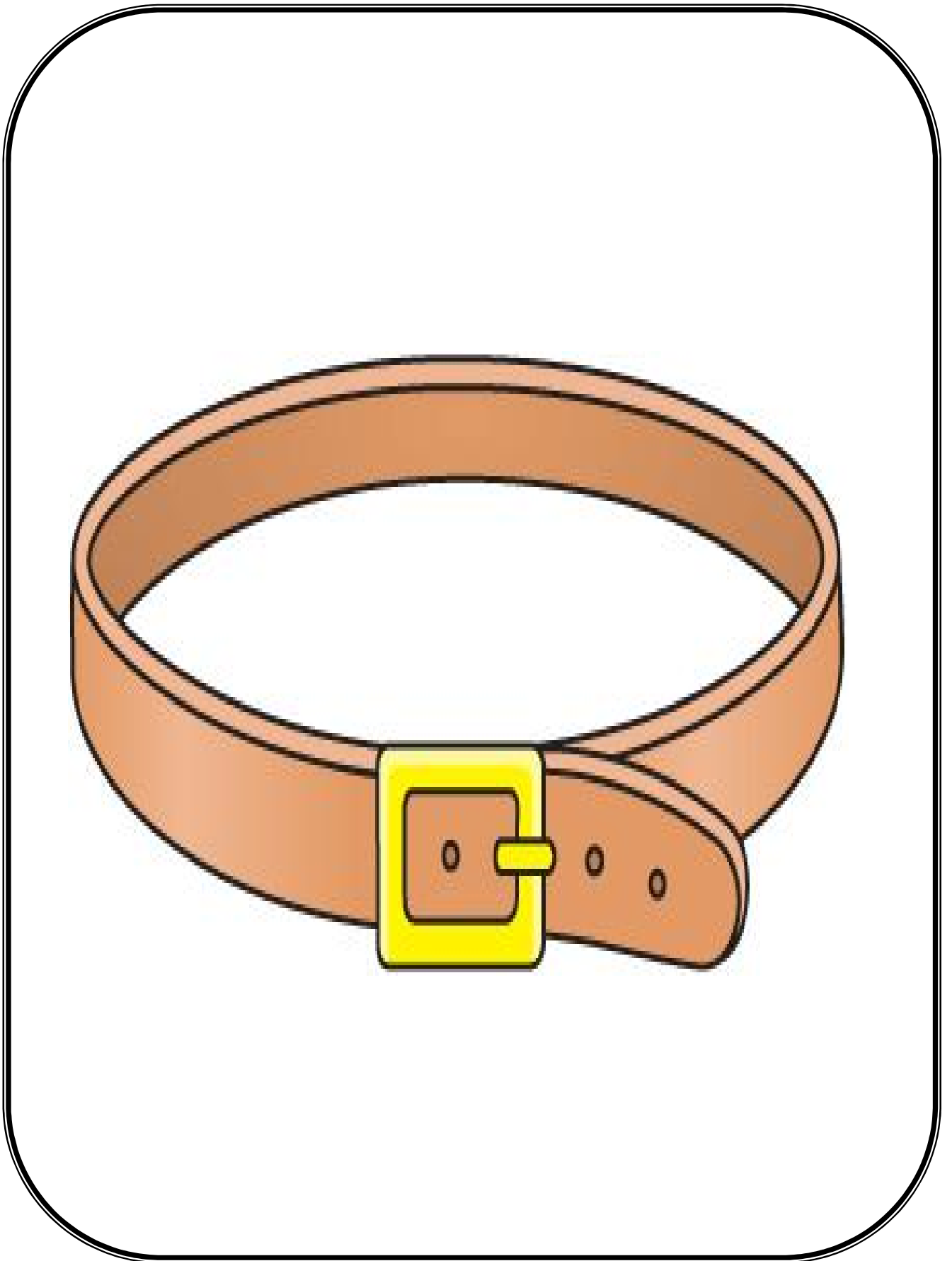
APPENDIX

APPENDIX A

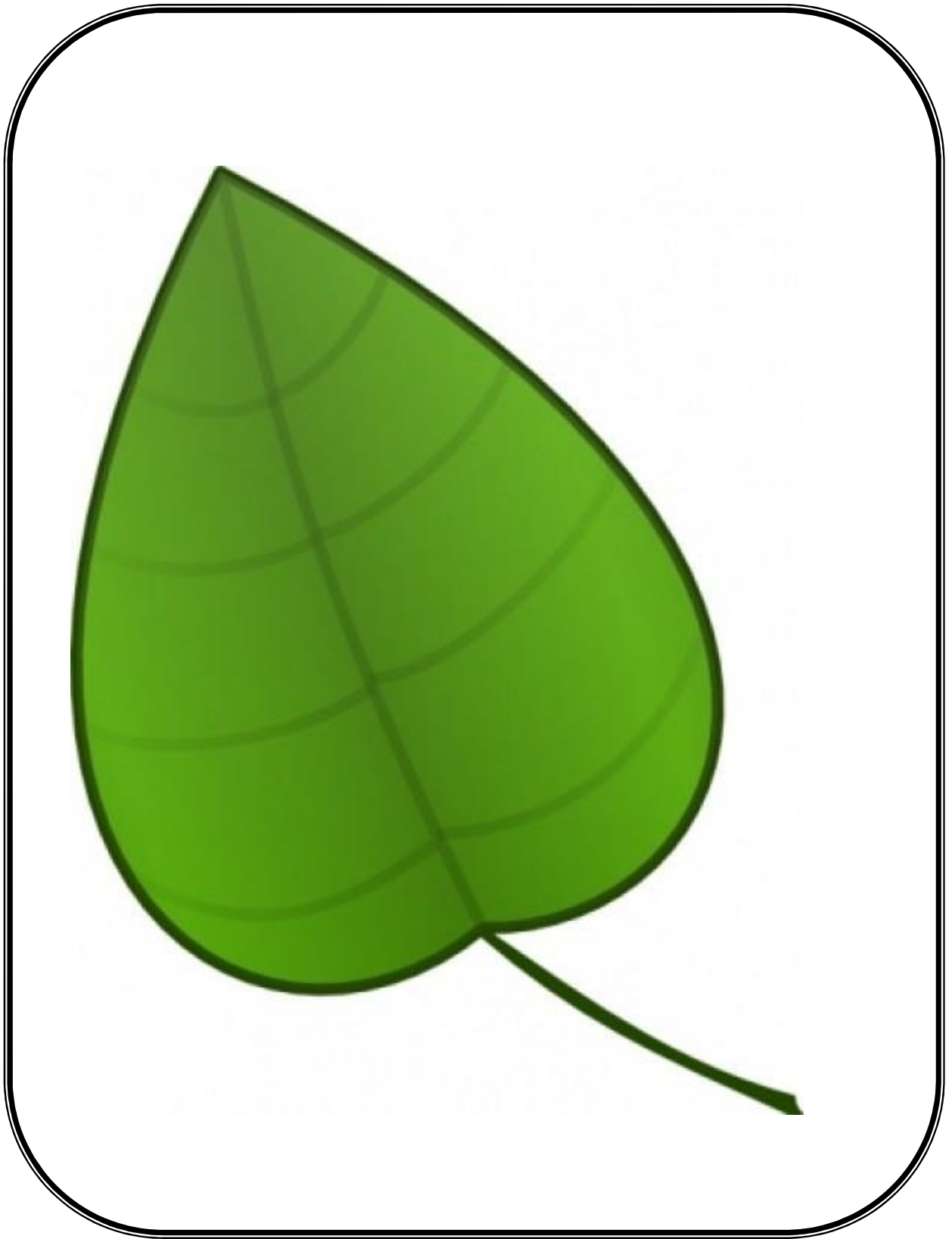## LIST OF TARGET L2 WORDS USED IN THE STUDY

Semantic Cluster	Unrelated Cluster	Thematic Cluster
Necklace	Lizard	Applaud
Bracelet	Break	Clown
Glasses	Rich	Ticket
Belt	Salt	High
Tie	Kennel	Rope
Purse	Leaf	Tent

EXAMPLES OF FLASHCARDS USED DURING INSTRUCTION LESSONS

POWERPOINT GAME

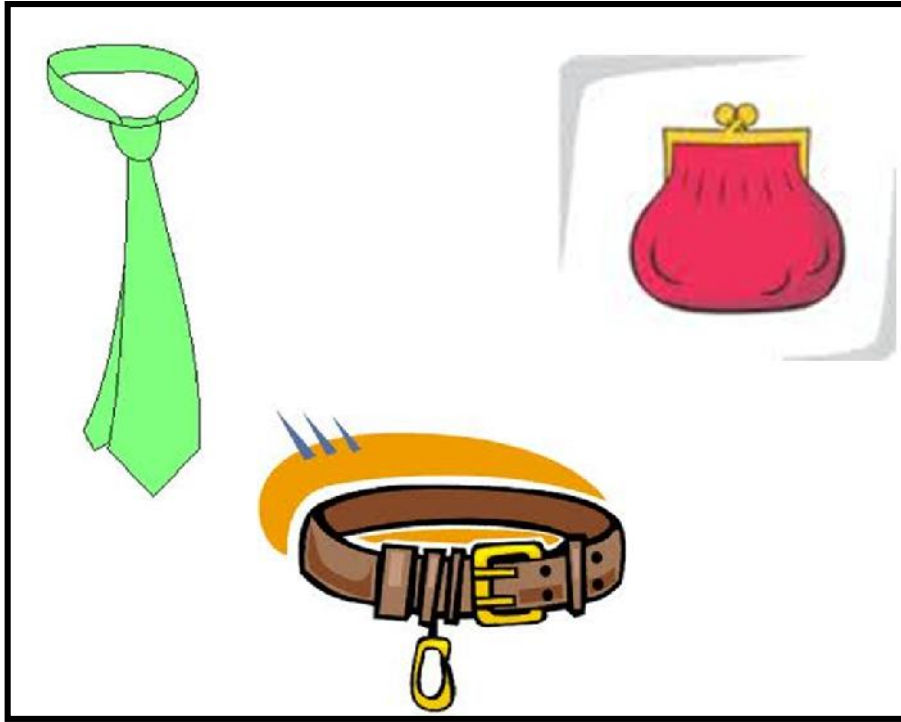Question slide

Correct answer slide   Incorrect answer slide