



**COMPARISON BETWEEN KAHOOT! AND A TRADITIONAL  
EXERCISE IN TERMS OF VOCABULARY RETENTION IN EFL  
LEARNERS**

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**MA THESIS**

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İngilizce Adı : Comparison between Kahoot! and a Traditional Exercise in  
terms of Vocabulary Retention in EFL Learners

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*To my family*

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**İNGİLİZCEYİ YABANCI DİL OLARAK ÖĞRENEN  
ÖĞRENCİLERİN KELİMELERİ AKILDA TUTMASI BAKIMINDAN  
KAHOOT! İLE BİR GELENEKSEL EGZERSİZİN  
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**ÖZ**

Kelime öğretimi ve öğrenimi, dil öğretiminin merkezinde yer alır ama uzmanlar ikincisinin dil öğretiminin daha zorlayıcı bir yönü olduğu konusunda hem fikirler. Öğretmenler, öğrenciler kısa bir sürede çok büyük miktarda kelime öğrenmeleri gerektiği için kelimeleri sunmanın ve pratik etmenin etkili yollarını uzun zamandır aramaktalar. Teknoloji, öğretmenlerin faydalanıp yüklerini hafifletebileceği yeni araçlar ve yöntemler sunuyor. Öğretmenlerin iş yükü düşünüldüğünde, öğrencilerin kelimelerin kelimeleri etkili bir şekilde akılda tutmasına yardımcı olabilen bu araçların öğretmenler arasında önem kazanması bir sürpriz değil. Bir oyun temelli öğrenme platformu yardımı ile yeni kelimeler öğrenmek diğer metotlardan akılda kalma açısından daha etkili olabilir. Bu çalışma Kahoot! adlı, internet üzerinden oynanan bir oyunu ve onun kelimelerin akılda kalıcılığına etkisini araştırıyor. Araştırmayı yürütmek için karma yöntemler yaklaşımı benimsenmiştir. Nicel veriler öntest-sontest-kontrol grubu tasarımı ile toplanmıştır. Kontrol grubu, geleneksel egzersizlerle hedef kelimeleri pratik etti, deney grubu ise Kahoot! yoluyla bunu gerçekleştirdi. Çalışma 5 hafta sürdü. Kelimelerin kalıcılığı bir adet hemen sonradan test ve bir tane kalıcılık testi ile ölçülmüştür. Araştırma sonunda, uygulama hakkında görüşlerini almak üzere deney grubuna bir anket uygulandı ve başka bir anket de Kahoot! kullanmış olan 15 tane öğretmene Kahoot! ile ilgili düşüncelerine dair biraz iç görü edinmek amacıyla uygulandı. Testlerin sonuçlarına bakarak gruplar arasında anlamlı bir farklılık yoktur denebilir. Fakat hem öğretmenler hem de öğrenciler Kahoot!’un kelime öğrenmek için etkili bir araç olduğu düşünüyorlar.



Anahtar Kelimeler : kelimelerin kalıcılığı; Kahoot!; oyunlaştırma; dijital oyun temelli öğrenme

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**(M. A. Thesis)**

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## **ABSTRACT**

Vocabulary learning and teaching are at the core of second language learning, but there is a consensus among the scholars that the latter is a challenging aspect of language instruction. Teachers have been seeking ways of presenting and practicing vocabulary effectively for a long time due to the large amount of vocabulary the learners need to master in a short period of time. Technology offers new ways and tools that the teachers can make use of to ease their burden. Considering the workload of the teachers, it is not a surprise that these tools which can help learners retain words effectively have gained importance among the teachers. With the help of a game-based learning platform, learning new words may be more effective than other methods regarding retention. This study investigates an online game called Kahoot! and its effect on vocabulary retention. A mixed-methods approach has been adopted to conduct the research. The quantitative data have been collected through a pretest-posttest-control group design. The control group practiced the target words by conventional exercises while the experimental group did it by means of Kahoot!. The study lasted for 5 weeks. The vocabulary retention of the groups has been assessed through an immediate post-test and a retention test. At the end of the study, a survey was given to the experiment group to gather their opinions about the application, and another survey was given to 15 teachers who have used Kahoot! to gain some insights into their thoughts about Kahoot!. By looking at the results of the tests, it can be said that there was no significant difference between the groups. However, both the teachers and the learners thought that Kahoot! was an effective tool to learn vocabulary.

Key Words : vocabulary retention; Kahoot!; gamification; digital game-based learning

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## SİMGELER VE KISALTMALAR LİSTESİ

|      |                                          |
|------|------------------------------------------|
| CALL | Computer-Assisted Language Learning      |
| DGBL | Digital Game-Based Learning              |
| EFL  | English as a Foreign Language            |
| GBL  | Game-Based Learning                      |
| GBRS | Game-Based Response System               |
| ICT  | Information and Communication Technology |
| LTM  | Long-Term Memory                         |
| MALL | Mobile-Assisted Language Learning        |
| SLA  | Second Language Acquisition              |
| SRS  | Student Response System                  |
| STM  | Short-Term Memory                        |
| TEFL | Teaching English as a Foreign Language   |

# CHAPTER 1

## INTRODUCTION

### **Statement of the Problem**

Learning a foreign language calls for the acquisition of a large number of words (Hulstijn & Laufer, 2001). According to Zimmerman (1997), knowing vocabulary is vital to learn a language, and vocabulary and language are so tightly intertwined that it is not possible to learn a language without learning its vocabulary (p. 5). Lewis (1993) expresses his perception of vocabulary as “language consists of grammaticalized lexis, not lexicalized grammar”. Wilkins (1972) emphasizes the importance of vocabulary with these words “without grammar very little can be conveyed; without vocabulary, nothing can be conveyed” (p. 111). Schmitt (2010, p. 4) also expresses that the teachers and the learners agree that learning vocabulary is a fundamental part of mastering a foreign language. Recent studies have revealed that the learners consider vocabulary learning as an essential but difficult part of foreign language learning (Shen, 2003). A similar study conducted by Cortazzi and Jin (as cited in Shen, 2003) shows that most of the learners describe vocabulary learning as the most important thing in the language learning process. It is a widely accepted fact that vocabulary learning is absolutely necessary and challenging. One of the most common problems that the learners encounter when learning vocabulary is that they have difficulty in retaining and remembering English vocabulary even if they have a high level of English (Lam, 2014).

It is undeniable that vocabulary learning is crucial to language learners as it helps them improve their language proficiency. However, teaching vocabulary has been a controversial issue among foreign language teachers for a long time (Coady & Huckin, 1997). Traditional methods of vocabulary teaching have proven to have little effect on active learner

involvement. According to Nguyen and Khuat (2003), the learners are not attracted to traditional ways of learning vocabulary. In fact, they seem to be tired and bored with these kinds of exercises, and they prefer playing games over conventional exercises. Some of these exercises such as fill-in-the-blanks worksheets, matching exercises, and multiple-choice exercises remain beneficial. However, technology is advancing every day, and both learners and teachers experience a major shift towards technology integrated lessons. The teachers, especially, should keep up with the technological developments as the learners are technologically savvy (Nahmod, 2017, p. 2). It is important to meet the needs of the learners and adapt the lessons and materials according to their interests, so using digital games can be a good way to achieve this.

Prensky (2010) lists digital games' advantages as being fun, interactive, purposeful, competitive, and meaningful, and adds that nothing else provides all of these at the same time. Moreover, Prensky (2003) states that phones are the future of education and utilizing them can have lots of advantages. Lately, a new online game has emerged, which is called Kahoot!. It is a free and accessible platform that can be used in different ways. It is basically an online quizzing website in which the teachers create their own exercises. Its popularity keeps increasing. Recent studies suggest that using this online tool to teach something is highly motivating for the learners (Yeung, 2017). Seeking out new ways to retain words and reinforce vocabulary learning has been an ongoing issue in the field of Teaching English as a Foreign Language (TEFL).

### **Purpose of the Study**

The main aim of this study is to investigate the effects of Kahoot! and a traditional exercise, which is multiple-choice exercise, on vocabulary retention of EFL learners. The research is going to seek out answers to the questions below.

1. Is there a significant difference between Kahoot! and multiple-choice exercises in terms of their effects on vocabulary retention?
2. What are the opinions of EFL learners on Kahoot!?
3. What are the opinions of EFL teachers on using Kahoot! in vocabulary teaching?

## **Significance of the Study**

Learning vocabulary is an essential part of language learning. Therefore, teaching it is also a significant and inseparable part of language teaching. Thereby, further research is needed to find ways that can boost vocabulary learning, and teachers constantly seek new and effective ways of teaching vocabulary. As a result of this search, using new methods, tools, and online games has gained importance recently. As educational technology has been developing, the learners have also been changing. They expect to see novelty in the classrooms. Since most of them use technology almost every day, they are willing to try out new things when learning vocabulary. Furthermore, their cell phones play an important role in their daily life. Their cell phones can be a distraction or an opportunity depending on how they are used. They can offer a medium for vocabulary instruction. Online games which are compatible with cell phones have a great potential for increasing motivation and a friendly competitiveness in the classrooms, which can lead to learner engagement and involvement in the lesson. There have been few studies on using online gaming platforms to consolidate newly learned vocabulary and assess their effectiveness on retention. Most of these studies worked with either young learners or adolescents. The case is true, especially for Kahoot!. In our case, the groups consist of young adults who are university students at the preparatory school of a state university based in Ankara. There is a gap in the literature regarding Kahoot!'s effect on young adults' vocabulary retention. Also, our study gathers the opinions of the learners and the teachers about implementing Kahoot! in English classes. This study's purpose is to make a contribution to the field and find out whether Kahoot! is useful or not in terms of vocabulary retention.

## **Limitations of the Study**

This study is limited to 32 students at a state university based in Ankara, and only two kinds of vocabulary exercises are going to be examined in terms of their impacts on vocabulary retention, which are Kahoot! and multiple-choice exercises. The results may be affected by autonomous learners and learners with a retentive memory. Another thing that may have a negative influence on the study is that Kahoot! requires a strong Internet connection, which may be problematic for some classes. Additionally, the current study assesses the retention of a limited amount of content words. Therefore, drawing a conclusion that either of the exercises is effective to teach all kinds of vocabulary can be wrong. The groups had different teachers, so this is a variable which cannot be controlled.

### **Assumptions of the Study**

It is supposed that the samples represent the population, and the instruments chosen are appropriate for this study. Another assumption is that the participants who took part in the study answered the questions with honesty and sincerity.

### **Hypotheses of the Study**

It is hypothesized that Kahoot! exercises will have a better effect on vocabulary retention of the learners compared to the traditional exercises. Finally, it is expected that the learners will give a positive feedback about the integration of an online game into the lesson. As a result, the study may help the researchers gain some insights about gamifying vocabulary learning, and eventually more games can be used to facilitate language learning in foreign language classes. These hypotheses are going to be tested with the help of this study.

### **Definitions of Key Concepts**

Delayed Post-test: The test which is applied after a certain period of time passes after the words have been learned; the retention test

Gamification: It is the integration of game components into non-game settings (Lee & Hammer, 2011).

Kahoot!: It is a game-based learning platform, used as educational technology in classrooms and other learning institutions (Wikipedia, 2017).

Post-test: The test applied right after the vocabulary teaching

Pre-test: The test implemented before the study to identify the learners' prior vocabulary knowledge

Retention: The ability to recall or remember things after an interval of time (Longman, 2010).

Treatment: In this study, the treatment is one of the vocabulary exercises: Kahoot! exercises or conventional exercises

Vocabulary: A set of lexemes, including single words, compound words, and idioms (Longman, 2010).

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **Introduction**

Demirbilek, Yılmaz, and Tamer (2010) state that learning a second language has been a requirement of our era due to globalization and constantly developing information and communication technologies (ICTs). As a result of the advances in ICT, education has experienced lots of changes as well. Language teaching is evolving every day. It cannot be denied that vocabulary is an important component of language learning and teaching. Teachers seek out new ways of teaching vocabulary effectively. There are new ways and methods of teaching vocabulary thanks to technological developments. In this chapter of the study, one of the latest trends in vocabulary teaching, which is gamification, is reviewed. The main concepts and issues related to vocabulary and digital games are presented in detail. First, the main concepts, which are vocabulary, vocabulary learning, and teaching, vocabulary retention, games, gamification, digital game-based learning, and motivation are defined respectively. Finally, studies related to this area of research are listed.

#### **Vocabulary**

Longman Dictionary of Language Teaching (2010) defines vocabulary as a set of lexemes, including single words, compound words, and idioms. “Generically, vocabulary is the knowledge of meanings of word” (Kamil & Hiebert, 2005, p. 2). McCarthy, O’Keeffe, and Walsh (2010) suggest that vocabulary is all about words, but it is hard to make a definition of what a word is. In their comprehensive research, they try to define the word as a representative of a unit of meaning. However, they add that it is challenging to identify where the boundaries of the words apply and what elements make up a word, considering that some

lexical items consist of more than one word (pp. 1-5). The terms lexeme, lexis, and lexical unit are referred to as a single meaningful unit no matter how many words it is made up of (Schmitt, 2010, p. 50). “Lexical items are the minimal units for certain syntactic purposes” (Lewis, 1993, p. 90). Also, Lewis (1993) states that the learners associate vocabulary with words, but many language ‘bits’ consist of multiple words. Because of the straightforward grammar/vocabulary dichotomy, the learners and the teachers often simplify one of the most complex aspects of language. It is obvious that vocabulary bears more meaning than grammar (p. 8). Krashen and Terrell (1983) express their view on vocabulary as

Vocabulary is basic to communication. If acquirers do not recognize the meaning of the keywords used by those who address them they will be unable to participate in the conversation. If they wish to express some idea or ask for information they must be able to produce lexical items to convey their meaning. Indeed, if our students know the morphology and the syntax of an utterance addressed to them, but do not know the meaning of key lexical items, they will be unable to participate in the communication (p. 155).

It is not an easy task to define vocabulary. Therefore, some scholars break it down to categories to analyze it thoroughly. Ellis and Tomlinson (1980, p. 64) divide the vocabulary into two categories: passive/receptive vocabulary and active/productive vocabulary. “A learner’s passive vocabulary consists of the total number of the lexical items which he can understand correctly... A learner’s active vocabulary consists of the total number of lexical items which he can accurately use in speech and writing” (Akar, 2010, pp. 16-17). Passive vocabulary encompasses all the lexical items a learner knows. It is larger than active vocabulary. Kamil and Hiebert (2005, p. 3) distinguish two types of vocabulary. One of them is productive vocabulary, which is the group of words a learner can use while speaking or writing. These words are frequently used by the learner. They can also be called active vocabulary. The other one is called recognition or receptive vocabulary. It refers to the set of words which learners can assign meanings while reading or listening. These words are less frequently used, but the learner can recognize them when encountered. The latter is usually larger than the former.

### **Learning Vocabulary**

Thornbury (2000, p. 14) claims that vocabulary was neglected for a long time in the language teaching field. The researchers mostly dealt with grammar and the ways to teach it. However, in the 1970s, vocabulary started to gain popularity and has preserved its place since then. The main reason why vocabulary became the center of attention is the rise of the Communicative Approach. How language learners learn vocabulary is one of the most



studied phenomena of second language acquisition. According to Boogards and Laufer (2004), vocabulary is learned either receptively or productively. Sometimes a combination of two is also possible (p. 80). Learning second language vocabulary entails learning not only the words but also the meanings that they have (Cook, 1996, p. 55). Nation (2008) claims that knowing a word includes knowing its form, meaning, and use (p. 61). First language and second language vocabulary learning are different from each other in terms of acquisition. The former one, as Schmitt (2000, p. 19) explains, is acquired through direct experiencing and figuring out the operations and the existence of the things in the real world. However, foreign language learners have the knowledge about the things and the objects in the world, and they have labels for everything in their mother tongue. While learning another language, they relabel these concepts that are already familiar to them with different words. McCarthy et al. (2010, pp. 102-108) have a similar explanation for learning foreign language vocabulary, which is relabelling the world. They also claim that the acquisition of the new words occurs through implicit, accidental, or unconscious learning.

### ***Learning Vocabulary in the First Language***

A child first interacts with an object and then hears its name during the first years of childhood. The object usually has a special importance for the child. By means of the object, the child has a direct experience with the word (Allen, 1983, pp. 9-13). Human beings have the ability to store thousands of words in their lexicon in their mother tongue. Educated adult speakers can easily and quickly use thousands of words. This storage and usage can be illustrated by a metaphor. If we think of our brains as machines, the speed of our processing highly depends on the memory size and processor speed. It is also directly related to how we input, store, and retrieve data which mean the ways we keep a record of, retain, and recall the words respectively (McCarthy et al., 2010, p. 101). Another view of L1 vocabulary acquisition proposes that the acquisition of words in the mother tongue is not mostly a result of explicit formal instruction, yet it is a product of incidental learning. The learners receive a large amount of language input, either orally or written, in their daily life (Cunningham, 2005, p. 46). Schmitt (2000, p. 116) explains this phenomenon as obtaining words through exposure in life. Another accepted view on this topic is Read's (2000, p. 43). He asserts that most of the words in L1 are acquired by interacting with other people. They are neither learned through formal education nor with the help of a tutor or a parent. It is the speech and writing of other people that foster L1 vocabulary acquisition.

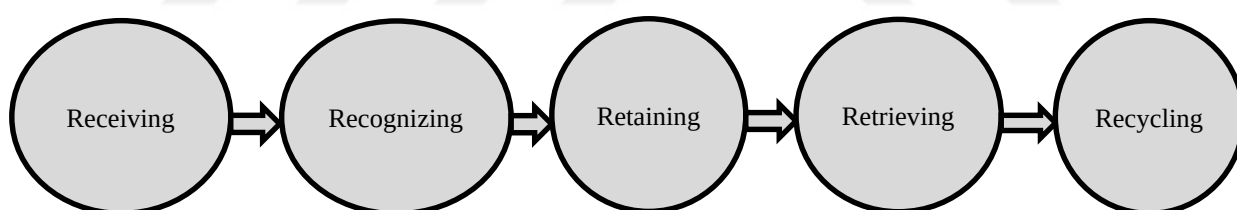
### ***Learning Vocabulary in a Second Language***

According to behaviorism, vocabulary learning is nothing but a habit formation. Through repetition and reinforcement, the words are transferred from L1 to L2 (Skinner, 1953). Nonetheless, Schmitt (1997) claims that the learners enjoy more cognitively challenging activities rather than rote memorization and drills. McCarthy et al (2010, p. 102) argue that learning a second language is dramatically different than learning our first language as we learn our first language when we are babies and have little world knowledge. However, most L2 learners start learning the target language when they are older. Infants receive spoken input most of the time while L2 learners get mostly written input all around the world. Long (1983) suggests that learning occurs as a result of interaction between the teacher and the learners. If meaning is negotiated, then vocabulary learning can be maximized. The learners should ask for clarification and check the meaning and confirm understanding. From a sociocultural perspective, second language learning is a social activity. When applied to vocabulary learning, it requires the teachers to set common goals for the learners. By doing this, the learners can work on these goals together to realize them. McCarthy et al (2010, p. 21) assert that learning words and their meanings is an incremental process. They also define the entailments of learning a word thoroughly. Learning a word includes knowing its spelling, pronunciation, form, meaning, derivations, collocations, connotations, and register. In addition, being able to retrieve a word when it is needed is an important characteristic of knowing a word. According to Krashen and Terrell (1983), if the learners receive comprehensible input, they can benefit from vocabulary learning. On the other hand, Ellis (1997) uses the term connectionism to explain the process of word accumulation in the mind. What is meant by connectionism is that the new words and the old ones form connections among themselves in order to store the new ones. These associations are never finished. One of the most profound studies in the field of vocabulary learning undoubtedly belongs to Lewis (1993). He draws the attention of vocabulary learning to learning chunks. If vocabulary is learned in the form of chunks, then it eases the burden and the stress of the communicators as the retrieval is going to be easier. Jiang (2004) argues that

learning new words in an L2 is a complicated process involving a variety of sub-processes and tasks. Before a word becomes a part of one's automatic linguistic competence, it has to be recognized as a word, its morphosyntactic and semantic properties have to be learned, and it has to be integrated into one's mental lexicon so that it can be retrieved automatically when needed (pp. 101-102).

He also mentions two dimensions of vocabulary acquisition. The first dimension deals with the condition of lexical entry in the lexicon. In other words, it is related to the retention,

consolidation, and automatization of words in the mental lexicon. The other dimension involves the content of a lexical input. Namely, it is concerned with the enrichment, expansion, and refinement of a lexical item. Learning the meaning of L2 words is a cumulative process, but it can be separated into two phases. The first one is the primary comprehension of the word, in which the learner creates the first word maps in his/her mind. This part of L2 word learning is crucial to retention and production because learning the meaning is a pre-requisite of retention for long-term use. The second phase is all about the gradual elaboration and adjustment of the meaning. The former is called as comprehension stage and the latter is referred to as the development stage (Jiang, 2004, p. 103). Ellis (1997) offers an explanation for L2 vocabulary learning. He explains L2 vocabulary learning process as mapping the new information onto the prior concepts or L1 translation counterparts within the mind. Brown and Payne (1994, as cited in Shen, 2003) offered a five-step model of vocabulary learning. The steps are encountering new words, obtaining the word form, getting a clear image, learning the meaning of the words, and utilizing the words. This model was called as 5R model: receiving, recognizing, retaining, retrieving, and recycling in four skills. The figure below explains illustrates this model clearly.



*Figure 1.* Vocabulary learning model of Brown and Payne (1994). Adapted from Shen, W. W., 2003, Current trends of vocabulary teaching and learning strategies for EFL settings. Feng Chia Journal of Humanities and Social Sciences, 7, 187-224.

There are some factors that are likely to influence a learner's L2 vocabulary learning. Schmitt (2000, p. 116) states that this process is affected by the learner's L1, age, amount of exposure, motivation, and culture. Also, the frequency of words has an undeniable effect on vocabulary learning. According to Read (1988, as cited in Schmitt, 2010), the more frequent a word occurs in a discourse, the more likely the learners are going to acquire it. Schmitt (2008) states that it takes 7-10 exposures to learn the primary form-meaning link. However, it is not always possible to recycle every word 7-10 times in a classroom. The amount of vocabulary to be learned is too much to be learned through intentional teaching/learning

activities. Therefore, incidental learning is an absolute necessity. The learners are also responsible for their own vocabulary learning outside the classrooms. Apart from homework, the learners can learn a substantial amount of vocabulary through doing extensive reading.

### **Teaching Vocabulary**

Allen (1983) argues that little importance was attached to vocabulary teaching in the twentieth-century language programs since some teachers thought that grammar should be emphasized more than vocabulary. Others feared that the learners would make mistakes in sentence construction if they were taught too many words before they had learned basic grammar. However, vocabulary started to gain importance once again after a number of studies had dealt with lexical problems. These studies' suggest that people who lacked the ability to use the right words frequently experienced communication breakdown. Therefore, a major shift of interest towards vocabulary teaching has been observed both in teachers and in academicians (pp. 3-5).

All of the language learners, regardless of their education level, know a large number of words approximately 15-40,000 words in their first language. This body of words is called 'lexicon' (Çelik, 2013, p. 92). One corpus study by O'Keeffe, McCarthy, and Carter (2006, p. 32) examined the total number of words that native speakers of English use on a daily basis. According to their findings, an average native speaker knows 50,000-60,000 words in general, yet about 2000 word-forms out of the corpus have been frequently used in everyday conversations. These top 2000 words account for 83 percent of the whole corpus. These findings propose important insights for vocabulary teaching. The teachers need to teach at least 2000 word-forms to their learners in order for them to understand everyday language. McCarthy et al (2010 p. 11) enumerate three advantages of teaching the first 2000 words: the learners have the ability to read, write, speak, and listen to everyday topics. Knowing these words helps motivate the learners as they are frequently encountered in the texts, and they can be used to make guesses about the unknown words. Dictionaries use 2000-2500 words to define words, which means that the learners can understand definitions in the dictionaries easily.

How to teach words is another confrontational issue in language teaching. In his study, Schmitt (2008) claims that the words can be taught explicitly with beginner learners. However, as the learners advance in the target language, incidental learning should be

incorporated into the program carefully. The learners should be trained to learn the words on their own. Since it is not possible to teach every aspect of words (e.g. polysemous words, idioms, and collocations) explicitly, the learners can fully understand the words via a lot of exposures to the words in diverse contexts. Therefore, explicit teaching and incidental learning should be used together in vocabulary teaching. Furthermore, he suggests that the teachers should teach lexical inferencing strategies to the learners and utilize extensive reading to speed up their vocabulary learning. Lewis (1993) argues that vocabulary teaching can be divided into two categories. The first one is random teaching, which is a response to a learner question. The second one is the formal presentation of the word (p. 117).

Akar (2010) lists the vocabulary teaching techniques as

1. Visual techniques: using realia, flashcards, videos, facial expressions and body language, crossword puzzles, miming, demonstration, computer-based technology,
2. Aural techniques: using natural sounds, poems, audios, computer-based technology, dialogues, and songs,
3. Verbal techniques: using definitions, connotations, synonyms, antonyms, word formation and families, cognates, games, riddles, consulting dictionaries, pronunciation, spelling, contextual guesswork, concept forming, role-play activities, collocations, translation, and semantic mapping,
4. Kinaesthetic, olfactory, gustatory techniques: smelling, tasting, and touching objects.

Allen (1983) summarizes some of the vocabulary teaching activities as using visual aids, miming, using a dictionary, word formation activities, paraphrasing, vocabulary games, and word families. McCarthy et al. (2010, p. 23) argue that the teachers should activate the prior schematic knowledge of the students before a reading or a listening activity. With the help of a picture or a question, the learners try to retrieve the words related to the topic. Therefore, pre-task work on vocabulary is essential. Molinsky and Bliss (1994, pp. vii-viii) summarize the strategies for introducing and practicing words:

1. Previewing the vocabulary: Activating students' pre-existing knowledge and semantic maps
2. Presenting the vocabulary: Drawing the students' attention to the word's meaning and pronunciation.
3. Vocabulary Practice: Having the students practice the words in pairs or in groups

4. Model Conversation Practice: Practicing the words in a meaningful model dialogue
5. Writing and Spelling Practice: Having the students practice the spelling of a word by using it in a written context.
6. Discussion, Composition, Journals, and Portfolios: Using the words to discuss a topic, write a journal or keep a student portfolio etc.
7. Communication Activities: Games and role-plays that can boost interaction among students

According to the findings of the National Reading Panel (NRP, 2000), five vocabulary teaching methods were determined:

1. Explicit Teaching: Definitions and other features of the words are provided to the students explicitly.
2. Implicit Teaching: The words are presented within texts to the learners, and taught through multiple exposures.
3. Multimedia Methods: It is integrating other modalities into vocabulary instruction such as graphic representations and hypertext.
4. Capacity Methods: Expanding capacity through automatization of reading with the help of lots of practice.
5. Association Methods: Establishing links between what learners already know and the words they come across that they do not know.

Oxford and Crookall (1990, as cited in Shen, 2003) classify vocabulary teaching methods in four groups. The table below shows this categorization.

Table 1.

*Classification of Vocabulary Teaching Strategies*

| Decontextual                               | Semi-Contextual                                                                                                       | Fully Contextual                            | Adaptable               |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-------------------------|
| Word Lists<br>Flashcards<br>Dictionary Use | Word Grouping<br>Association<br>Visual Imagery<br>Aural Imagery<br>Keyword<br>Physical Response<br>Physical Sensation | Reading<br>Listening<br>Speaking<br>Writing | Structured<br>Reviewing |

Adapted from Shen, W. W., 2003, Current trends of vocabulary teaching and learning strategies for EFL settings. *Feng Chia Journal of Humanities and Social Sciences*, 7, 187-224.

Akar (2010, p. 25) emphasizes the importance of actively engaging the learners in inferring the meanings of the new words and adds that the teachers should pre-teach only a few words to help learners comprehend the lesson. According to her, keywords should not be pre-taught. Which words to teach and how many words to teach have been some of the conflictual issues of vocabulary teaching. According to Nation (2006), a learner needs to know 98 percent of the words in a discourse to understand it well. In order to reach this level of coverage, the learner needs to know around 8,000-9,000 word families for reading texts. The number may be smaller for spoken discourse about 5,000-7,000 words. A word family is made up of the root, its inflections, and its derivations. However, not every learner needs to know this many words. The teachers can make decisions based on the learners' needs and can get help from lists like Word Frequencies in Written and Spoken English (Leech, Rayson, & Wilson, 2001) to choose which words to teach. Lewis (1993) states words are not 'equally useful'. The teachers may select the useful ones regarding the frequency, range, and coverage (p. 39). In their vocabulary teaching materials, McCarthy and O'Dell (2001) found that 15 to 18 words per hour/unit is a realistic target. 10 or 12 of these words will possibly be retained if they are recycled, revisited and practiced as well.

### **Vocabulary Retention**

Retention is defined as "the ability to recall things after an interval of time. In language teaching, retention of what has been taught may depend on the quality of teaching, the interest of the learners, or the meaningfulness of the materials" (Longman, 2010, p. 498). The literature on vocabulary retention highlighted some key points about the process of retaining vocabulary. Klatzky (1975, pp. 8-9) explains how memory works in detail. She claims that human beings take in a sensory input via sensory register, which can store the items for a very short amount of time. If the attention is given to the input, then it moves to short-term memory (STM), which can keep the information for an indefinite amount of time if it is rehearsed. Finally, the information is passed onto the long-term memory (LTM), where it is stored more permanently. Forgetting can occur in both memories, yet it happens more frequently in STM. Storing a new vocabulary item into long-term memory is not

related to how long it is kept in the short-term memory, but there is a strong relationship between this item' being processed in depth initially and transferring it to the long-term memory (Hulstijn & Laufer, 2001). On the other hand, according to Tulving (1975, as cited in Hulstijn & Laufer, 2001), in-depth semantic processing alone is not enough for retention, elaboration on the item is also necessary. Schmitt (2010, p. 23) expresses that forgetting some words is an inevitable part of vocabulary learning. Both learning and forgetting are going to occur until the word is acquired. McCarthy, O'Keeffe, and Walsh (2010, p. 101) remind that human beings are capable of learning, retrieving, and using thousands of words competently.

According to Thornbury (2002), learning is a result of remembering which is directly related to memory. Schmitt (2000, p. 131) asserts that there are two basic types of memory: Short-Term Memory (STM) which holds a small amount of information for a short period of time and Long-Term Memory (LTM) which is responsible for storing a large amount of information for a relatively longer time than STM. The main aim of vocabulary teaching is to facilitate the transition between STM and LTM. Also, the number of exposures has a substantial impact on vocabulary retention. According to Nation (1990, as cited in Lam, 2014), learning a new word in a second language learning necessitates 5 to 16 exposures. Schmitt (2008) has a similar view on this. He states that it takes 7-10 exposures to grasp the initial form-meaning link.

Another factor that affects retention is engagement. The more attention is given to a word, the more likely that it is going to be learned and remembered ( Craik & Lockhart, 1972). Also, using visuals and words together increases the retention of the words (Mary & Anderson, 1991, as cited in Ebrahimzadeh & Alavi, 2017). Schmitt (2008) highlights the effects of engagement on retention. Activities or methods that lead to better engagement, increased attention, and motivation have a positive impact on the learners' retention. Even testing the learners' knowledge of the words increases the retention. Nation (2001) explains the steps of vocabulary retention, which are noticing, retrieving, and creative use. The first one is essential in turning input to intake. The second process, if effectively accomplished, leads to better vocabulary retention. The final step refers to using the new words in different contexts. Previous literature established the importance of teachers on vocabulary retention. McCarthy et al (2010, p. 106-111) stress the importance of the teacher regarding the facilitation of the retrieval of the words. The faster the students recall the words, the more



fluent they get. As a result, finding new ways to help learners store and recall new words is crucial.

## **Games**

Human beings have been playing games for centuries. Games have been a part of human life throughout history (Demirbilek et al., 2010). García-Bárcena and García-Crespo (2006) claim that the history of playing games dates back to three thousand years before Christ. Therefore, it can be said that playing games has been a part of human life for ages. According to Rifkin (2009, pp. 95-96), human beings play to socialize, imagine, and explore. Humans become a single entity when they play. Playing a game bears more meaning than a trivial pursuit. Human beings can become free and be fully human when they play. However, It is difficult to define what a game is. Bright and Harvey (1984, as cited in Hogle, 1996, pp. 5-6) offer a definition for games:

The activity is usually a contest of physical or mental skills and strengths, requiring the participant(s) to follow a specific set of rules in order to attain a goal. Games may involve an element of chance or fantasy. A game involves competition with others, with a computer, or with oneself. Games can be instructional or not, they can be interactive or not, and they can be computer-based or not.

Games, in general, are organized activities that have a particular task or objective, a set of rules, competition, and communication between the players. Games in computer-assisted language learning (CALL) refer to the games that have rules, time limit, and/or visual properties. The learners need to obtain or manipulate information to achieve the objective (Longman, 2010). Games have different types. For example, some of them are table top games, party games, video games, computer games, mobile games, and educational games etc. (Wikipedia, 2018). Prensky (2001) claims that mankind's two of the most appealing pastime activities are computer and video games. Human beings socialize and interact through these games. According to Vygotsky (1978, p. 79), interaction plays an important role in the cognitive development of human beings. Computer games refer to the games that are PC-based while the term, video games, refers to the games that are console-based. However, these terms are used interchangeably nowadays. There is an umbrella term for these games, which is digital games (Kirriemuir & McFarlane, 2004). Gee (2003) argues that people not only have fun but also learn things at the same time while playing a well-designed digital game. Schools, workplaces, and even families can make use of game technologies to boost learning. Peterson (2010) investigates the psycholinguistic and socio-cultural aspects of games and simulations in CALL. In his study, he suggests that games

have a big potential for better language learning. He claims that the learners get motivated and enthusiastic about learning when games are utilized.

Ibrahim & Jaafar (2011) provide a detailed description of educational games. According to them, educational games are “games technology for teaching or learning that integrates educational content of specific subject designed to meet desired learning outcomes for specific students” (p. 557). In a broad term, educational games are called as “learning-oriented games” or “edutainment”. They are designed for specific educational purposes and can be played either offline or online (Kirriemuir & McFarlane, 2004). While playing a fun online educational game, the learners fail repeatedly, but each time they fail they learn something. They do not feel discouraged because of the nature of the games. The immediate feedback they get may even make learning motivating. As a result, they get the idea that failure does not mean an end but a chance to learn something (Lam, 2014). Prensky (2005) states that learners generally perceive computers and video games as a source of entertainment and joy. However, these machines and tools’ capability of teaching should not be underestimated because the learners find them more appealing than other methods of teaching. According to García-Bárcena & García-Crespo (2006), formal education has some factors that demotivate the learners, unlike games. Kirriemuir and McFarlane (2004) list the characteristics of engaging educational games. According to this list, games should have tasks that have clear goals and that the learners can complete, the ability to engage, give immediate feedback, providing deep but effortless involvement (i. e. engaging with the task without worrying about losing), having a sense of control over actions, and alleviating the concerns about self during game but boosting self-confidence after the game. Prensky (2001, p. 106) covers the advantages of games as:

1. Games meet the needs and learning styles of today’s generations.
2. Games are motivating and fun.
3. Games are adaptable and versatile to almost any subject, information or skill to be learned.
4. Games have rules. That gives the learners structure.
5. Games have goals.
6. Games are interactive.
7. Games have feedback and outcome.

8. Games have win states that give ego gratification.
9. Games have competition that gives adrenaline.
10. Games have problem-solving.
11. Games are adaptive. That gives the learners flow.
12. Games have representation and story. That gives the learners emotion.

Utilizing games and game technologies have been proven to be favorable in terms of academic achievement, motivation, and classroom dynamics (Sharples, 2000, as cited in Wang, 2015). Lee and Hammer (2011) argue that games affect the learners in three ways. One of them is cognition. Games give the opportunity to learn or explore through direct experience. The learners also process information and solve problems. This aspect of games develops the learners' cognitive abilities. Additionally, games invoke a lot of emotions including joy, anger, happiness, satisfaction, competition, frustration, and curiosity. Human beings learn through feelings as well. Games can establish emotional associations with learning. Also, the learners can fail repeatedly in games until they achieve their goal. It can be said that games can decrease the level of anxiety due to their nature. The final aspect which games have an influence on is the social domain of the learners. Games offer chances to try on new identities or choose a different name. For example, an introverted learner can become a victorious commander in a game, or a shy learner can answer the questions without the fear of humiliation. Besides, the new generation spends a lot of time playing computer games and mobile games. They are also digital natives, which pushes the teachers to adjust their methods in accordance with their learners' preferences. Therefore, using games is favourable with regard to their attractive features that can meet the needs of today's learners. (Prensky, 2001). All in all, a well-designed game can result in a fruitful learning and a positive atmosphere in the classroom.

On the contrary, educational digital games are doubted by some teachers and curriculum developers because it is hard to find a game suitable for the lesson objectives, the games sometimes have irrelevant content, which may result in a waste of classroom time. In addition, some parents or some stakeholders do not support using games and disregard the potential benefits of them. Also, the teachers do not have enough time to familiarise themselves with the games. Moreover, if games become a compulsory component of the education, they may lose their effectiveness. The games should have a sense of freedom,

otherwise, the learners may feel forced to play the games, which is no different than traditional methods (Kirriemuir & McFarlane, 2004).

### **Gamification**

Gamification is defined as the use of video game features in non-gaming contexts, and it is generally used to enhance user experience and user engagement (Deterding, Sicart, Nacke, O'Hara, & Dixon, 2011). Therefore, it could be understood that gamification does not mean using video games. It is using qualities that make games attractive and motivating in contexts that are not games. There are two ways that can be used to gamify a context: one of them is providing rewards such as achievement badges and points. Also, leader boards and progress bars can be used to reinforce friendly competition among the learners. The second way of doing this is making the task feel more like a game. Briefly, it is incorporating game mechanics and dynamics in non-game settings (Wikipedia, 2018). Bicen and Kocakoyun (2018, p. 74) summarize the game mechanics as “points, levels, trophies, badges, achievements, virtual goods, leader boards, and virtual presents”. They also classify game dynamics as “rewards, achievement, status, self-expression, competition, and altruism”. Domínguez et al. (2013) express that gamification was first used in the marketing area as it had the features suitable to engage the customers. However, it has penetrated into other areas such as education, health, and government due to its promising potential. As it increases engagement, they suggest that gamification can provide lots of benefits in education. Another definition of gamification was provided by Pede (2017). According to him, gamification is “the process of using games to engage audiences, solve problems, and/or elicit game-like thinking and mechanics” (p. 11). McLaughlin (2017) states that “gamification is a critical component to nearly any training” (as cited in Kahoot!, 2017). Gamification can be used in a number of ways in the lessons. To illustrate, it can be used to deliver instruction, review topics, and make a formative assessment in schools. Also, it encourages the learners to work collaboratively and solve problems in a meaningful way. Lee and Hammer (2011) give a detailed explanation of gamifying education:

What do we mean by the gamification of education? After all, schools already have several game-like elements. Students get points for completing assignments correctly. These points translate to “badges,” more commonly known as grades. Students are rewarded for desired behaviors and punished for undesirable behaviors using this common currency as a reward system. If they perform well, students “level up” at the end of every academic year. Given these features, it would seem that school should already be the ultimate gamified experience. However, something about this environment fails to engage students (p. 2).

Conversely, games have a great potential for engaging learners. Therefore, using games to solve problems in the education field can produce great outcomes. Becker (2001, p. 23) states that games have been started to be appreciated by people in the field of teaching as they can both inspire the learners and also teach the concepts effectively. Moreover, Prensky (2001, p. 18) argues that games “can play an important role in learning material that is not intrinsically motivating to anyone but which needs to be learned”. McGonigal (2011) states that games can be used in various ways. They can be used as supporting tools of assessment in language learning, improving cognitive processing, and simulating real-life contexts in order to prepare the learners for the situations in real life. One of the most notable gamified educational experiences is Khan Academy (Wikipedia, 2018). It was founded in 2006 and received a lot of donations from Google and Bill Gates. In this academy, the learners can access thousands of lectures online. After watching the videos, the learners perform some tasks and gain points for their performance. Badges are given to the learners who successfully finished the tasks. If the learner solves ten problems in a row, then it is assumed that the learner has mastered the topic and can move on to the next one. To sum up, gamification can be integrated into the lessons to reinforce learner engagement and motivation. On behalf of the teachers, it can be a great tool to guide, assess, and reward students. However, gamification should be applied carefully and in a principled way. Otherwise, it may lead the learners to think that learning should always be rewarded, which is not the desired outcome of gamification (Lee & Hammer, 2011).

### ***Gamification and Vocabulary Teaching***

Recently, gamifying vocabulary has gained popularity, and several studies revealed that gamifying vocabulary learning has proven to be useful and beneficial (Medina & Hurtado 2017; Nahmod, 2017; Pede, 2017; Taheri, 2014). Lam (2014) advocates that the learners find learning vocabulary by means of gamification enjoyable because online games have qualities that conventional textbook methods lack, such as immediate feedback and a vivid pace. Online games generally have a system that keeps the scores from the beginning until the end. This scoring system may have a direct impact on learners’ motivation and learning experience (Abrams & Walsh, 2014). Integrating technology into the language classrooms to teach vocabulary can increase student engagement and make activities more meaningful compared to the monotonous activities. Additionally, technology has the potential to transform teacher-centered education into a more learner-centered one by personalizing

learning (Sharma & Unger, 2016). Huang (2015) proposes that educators should use technology whenever possible since schools have begun to adopt educational technologies more than ever.

Moreover, a quasi-experimental study conducted by Yip and Kwan (2006) revealed that using online vocabulary games to teach in the classroom could attract the learner's attention and may facilitate their learning. There were 100 engineering students who participated in the study. The experiment group learned new words from two websites while conventional activities were used with the control group. The study lasted for nine weeks. A pre- and a post-test were applied at the beginning and at the end of the lesson. The experiment group outperformed the control group according to the results of the pre- and post-test. They argue that gamifying vocabulary learning results in a better vocabulary acquisition, and grab the learners' attention more effectively than traditional methods.

Abrams and Walsh (2014) led a similar study about gamifying vocabulary learning. The study was done with 14 adolescents and 15-20 young adults. The adolescents were trained through an online vocabulary game to study for a high stake exam. The young adults received vocabulary practice through the same game for unit revision. Reflections on how they feel about gamified vocabulary were collected from the participants throughout the study. Also, the researchers observed the classes themselves and qualitative data were collected with the help of one-on-one interviews with the participants. The results were promising, and it could be concluded from the reflections of the students that they enjoyed the process as online games flow better than traditional methods.

## **Motivation**

Longman (2010) defines motivation as "the driving force in any situation that leads to action" (p. 377). In his comprehensive book, Gardner (1985) defines motivation for language learning as "the desire to achieve that language, the learner's immediate goal, by means of effort, want or desire and affect or attitude" (p. 11). Ryan and Deci (2000a) define the state of being motivated as "to be moved to do something" (p. 54). There are two types of motivation according to Gardner and Lambert (1959), which are integrative and instrumental motivation. Crookes and Schmidt (1991) make a distinction between integrative motivation and instrumental motivation. Integrative motivation is a learner's positive attitude towards the target language community. The latter, however, includes functional reasons why a

person wants to learn a language. Previous research has established that there are two other types of motivation, which are intrinsic and extrinsic motivation. Ryan and Deci (2000a) provide some useful explanations for these motivation types. The former is learning for the sake of learning whereas the latter is learning for other purposes. An extrinsically motivated learner searches for an instrumental outcome while an intrinsically motivated learner does the activity for his/her internal satisfaction. According to Gardner (2007, p. 10), a motivated learner has goals, reasons, and anticipation. Also, a motivated learner makes an effort to reach his/her goals, shows confidence, and positive attitude. Dörnyei (2014, p. 519) suggests that motivation is tightly linked to why people do something, how long they continue doing the activity, and how hard they try to do it.

Deci, Koestner, and Ryan (1999, as cited in Polat, 2014) claim that since the evolution of behaviorism, it has been shown that extrinsic rewards can control behavior. As long as the reward is provided, the behavior is likely to occur again. Based on the implications of these studies, teachers sometimes use extrinsic rewards to motivate learners. One of the ways of doing this is by using games, which have extrinsic rewards and badges that can motivate the learners.

Crookes and Schmidt (1991, p. 48) claim that extrinsic rewards may have a negative washback effect on continuing motivation. Therefore, using these kinds of rewards may do more harm than good. Deci et al. (1999, as cited in Polat, 2014) confirm that using extrinsic rewards (i.e. tangible rewards) may even harm intrinsic motivation. Therefore, they should be used carefully. Motivation is affected by lots of factors such as attitude, effort, will, and task-enjoyment (Gardner, 1985). Another study on the components of motivation towards language learning enumerates these components as: intrinsic interest in activity, perceived value of activity, affective factors, gender, etc. (Williams & Burden, 1997, as cited in Dörnyei, 1998) Not all of them can be controlled by the teacher. However, teachers can find innovative ways to boost the motivation of the learners. One way of doing this can be by integrating information and communication technologies into the lessons.

### **Motivation and Gamification**

Gamification tries to integrate intrinsic and extrinsic motivation to boost engagement and motivation. Owing to the positive feedback that gamification provides to the learners, gamification can help students gain motivation (Lee & Hammer, 2011; Muntean, 2011).

Sigurdardottir (2016) argues that intrinsic and extrinsic motivation are pivotal notions in gamification. She suggests that playing a digital game is intrinsically motivating, but the outcomes are extrinsically motivating. However, she adds that some scholars reject the idea that the digital games motivate learners intrinsically. They think that using digital games to motivate learners extrinsically is no different than using traditional activities. It is just covering broccoli with chocolate. There is a developing body of research to support this claim.

Polat (2014) examined the effects of gamification on the learners' motivation. There was a total of 32 EFL students in the study, 16 students in the experimental group and 16 students in the control group. The study lasted for six weeks and a pre-test and post-test were used to measure the learners' foreign language motivation. Also, a survey about gamification was implemented during the study to gain some insights about the learners' opinions towards gamification. The analysis of the pre- and post-test showed no significant difference in terms of motivation. However, the learners had a positive attitude towards gamification.

Schmitt (2008) describes the relationship between engagement and vocabulary learning in detail. He states that if the learners are engaged with a word more often, they become more likely to learn it. There are also other factors which affect engagement and motivation, which are increased the frequency of exposure, attention, intention, requirement, amount of time spent with the lexical unit, and interaction with the item.

### **Digital Game-Based Learning**

Prensky (2001) defines digital game-based learning (DGBL) as a “marriage” of digital games and educational content. The argument behind DGBL is that it can bring computer or video games and educational subject together and can accomplish as good or better results as conventional learning methods. Sigurdardottir (2016) defines digital game-based learning as “any employment of digital games in education” (p. 6). Kirriemuir and McFarlane (2004) define digital games as a game that supplies visual digital information to one or more player, obtains some input from the players and processes it and changes the digital information supplied to the players. Prensky (2001, p. 6) claims that even though learning styles vary among individuals, and he uses the term digital game-based learning to talk about learning via computer and video games, digital game-based learning is a perfect match for today's learners, and it integrates fun into the lessons. Deubel (2006, as cited in Shahriarpour & Kafi,



2014) lists the assets of digital game-based learning: the ability to engage and motivate learners, offer learning experiences, facilitate long-term retention. As a result of these appealing features, DGBL has spread around the world very quickly. Nowadays, not only prestigious companies but also schools have adopted this system as it motivates the learners more than the other methods (Deterding et al, 2011; Kahoot!, 2017). However, using digital games is not a magical solution to all educational problems and it should be used with other methods to work well. In his comprehensive book, Prensky (2001, p. 108) highlights the assets of digital game-based learning, which are engagement, interactive learning process, and the way these two are combined. According to Ebrahimzadeh and Alavi (2017), digital games have an immense potential for learning vocabulary as they have multimedia, interaction, repetition, and engagement”.

Shahriarpour and Kafi (2014) used digital games on 25 EFL teenager learners from Iran to increase their motivation towards learning vocabulary. They used interview and observation methods to collect data. The game was a popular video game among teenagers. The students played the game three times a week for about one and a half hour. The researchers observed the students while they were playing the game. They needed to solve the problems in the game and in order to do that they needed to know the words. According to the qualitative data gathered from the teachers and the students, they drew the conclusion that digital games increased the motivation of the students and made the learning more meaningful.

Ebrahimzadeh and Alavi (2017) examined the effects of playing video games and watching videos games and doing intensive reading on EFL learners’ short- and long-term retention. The participants were 241 male students who were randomly assigned to the treatment groups. Twenty-one words were selected as the target words. A pre-test was applied to the learners in advance. The treatment lasted for five weeks. The same pre-test was applied twice as a post-test, one month and three months after the treatment. The results revealed that the readers forgot most of the words among the groups. The group that outperformed the others was the players. The watchers retained more words than the readers. It can be concluded that digital games have a positive impact on long-term vocabulary retention.

### **Mobile-Assisted Language Learning (MALL)**

With the recent developments in technology, the majority of people have mobile devices. Mobile devices have become an inseparable part of our lives. Their uses include not only

communication but also learning, sharing, and interacting. As they are portable and multifunctional, they have become the center of attention recently. This attention has led to the emergence of Mobile-Assisted Language Learning (MALL). To put simply, it is utilizing mobile devices to learn something (Perry & Chen, 2011 as cited in Gürkan, 2018). Prensky (2005) asserts that “what students learn with a cell phone is anything if educators design it right...but among the most frequent, time-tested, and effective of these are listening, observing, imitating, questioning, reflecting, trying, estimating, predicting, speculating, and practicing” (p. 2). The use of mobile phones can facilitate all of these learning processes. An important term related to MALL is multimedia learning. It is “building mental representations from words, sounds, and pictures” (Mayer, 2014, p. 3, as cited in Ebrahimzadeh & Alavi, 2017). Christopher and David (2005, pp. 38-39) argue that multimedia includes texts, images, sounds, videos, and/or animations. Using a variety of channels to teach vocabulary can have a good impact on the vocabulary retention.

Su and Cheng (2015) have done a study to determine the effects of mobile gamification on students’ learning and achievement. They had 3 groups in the study. One of the groups was instructed through a gamified mobile learning system. Traditional methods were used with the other group, and the last group learned the lesson through non-gamified mobile learning system. The results suggest that the learners with mobile gamified learning performed better than the groups with non-gamified instruction and traditional method instruction. Also, the group that used a gamified mobile learning system experienced an increase in their motivation.

Gürkan (2018) conducted research to find out about the effects of mobile-assisted language learning on vocabulary learning. He designed a mobile multimedia annotation application for vocabulary learning. He also prepared paper-based annotation activities. The participants were 122 high school students. There were two control groups which used paper-based annotations, two experimental groups which used the application, and a group that did not receive any treatment. Pre-, post-, and delayed post-tests were applied and analyzed in terms of vocabulary gain. Also, a questionnaire was administered to gain some insights into the students’ learning preferences. The results of the study show that there was a difference between the experimental groups and the other groups.

## **Kahoot!**

Wang (2015) defines Kahoot! as a game-based student response system (GSRS), which turns the classrooms into a game show. The questions and possible answers are reflected to a big screen from the teacher's computer. The students try to answer the questions as fast and correct as possible through their own digital devices. A scoreboard is shown between the questions. The students can see how well they performed by looking at the scoreboard. The teacher gets a clear picture of the effectiveness of the instruction. "Kahoot! is an online global educational brand that offers a free student response platform resembling the popular trivia game Quizzo" (Plump & LaRosa, 2017, p. 152). It is free of charge and the educators only need to create a free account to access to the content. They can create game-based quizzes, surveys, or discussions. Also, they can select a game created by others. It is a student response system (SRS), which provides an engaging way to teach vocabulary. The students can answer the questions anonymously via a smartphone, a tablet, or a computer without the fear of getting recognized. It is a user-friendly tool and the teachers or learners can prepare tests depending on their creativity (Dellos, 2015).

According to Kahoot!'s annual report on Educational Trends (2017), there are 50 million active users of Kahoot!. 1 million of these users are employees of prestigious corporates. 80% of the users delivered training via Kahoot! in classrooms or meetings. Kapuler (2014) proposed a list of top 100 educational tools and applications and Kahoot! is in the 36<sup>th</sup> place on that list. The criterion was to be effective in terms of learner engagement and assessment. He also states that "Kahoot! is a fantastic free tool that combines Game-Based Learning and a Student Response System to bring a fun and easy to use a real-time assessment tool to the classroom". Another advantage of using Kahoot! is that it can create an opportunity for shy or introverted students to participate in the lesson. Moreover, Kahoot! gives an immediate feedback to the learners and to the teacher, so it can be a great way to assess the learners' progress (Stowell & Nelson, 2007). Another study that highlights the effectiveness of student response systems is Fies and Marshall's (2006). They claim that SRSs can increase student participation via a combination of technology and educational content. They argue that as SRSs give the teachers the chance to get a real-time feedback on the effectiveness of the course, both the teacher and the learners can benefit from this application. The teacher can draw conclusions about which information is learned and which needs further explanation by looking at the responses the learners give and provide a real-time feedback to the learners.

Wang (2015) compared a number of digital games to one another. These games were Socrative, Kahoot!, Quizlet, Poll Everywhere, and Learning Catalytics. The main difference between Kahoot! and the other platforms is that Kahoot! is a game-based platform focusing on student engagement and motivation solely. Also Kahoot! is directly linked to social media. The students can share their results or quizzes on other social media platforms. In her study, Nahmod (2017) states that Kahoot! give the learners the control of their own learning. Plump and LaRosa (2017) claims that using Kahoot! develops the learners' metacognitive abilities through giving immediate feedback to the learners. Additionally, it is possible to assess the learners' comprehension of the concepts and build on what they have already understood. Clarification, revision, or explanation can be provided during or after the game. They summarized Kahoot!'s advantages in the table below.

Table 2.

*Advantages of Using Kahoot!*

- 
- Free
  - Easy for instructors to learn
  - Simple process for students (no account registration or downloading of application)
  - Compatible with smartphones, tablets, or computers
  - Real-time results help instructors provide clarification when needed
  - Music and colors add to student excitement and energy
  - Increases student engagement
  - Instructors can download, review, and save results
  - Students can take quizzes multiple times
  - Instructors can create quizzes, discussion questions, or surveys
  - Instructors can adjust the response time
- 

Taken from Plump, C. M. & LaRosa, J., 2017, Using Kahoot! in the classroom to create engagement and active learning: A game-based technology solution for eLearning novices. *Management Teaching Review*, 2(2), 151-158. <https://doi.org/10.1177/2379298116689783>

Zarzycka-Piskorz (2016) examined Kahoot! in terms of motivating the learners to learn grammar. She carried out the research with 112 general English course students. The students practiced grammar points 1-3 times a week by Kahoot!. After each practice, Kahoot! collects the opinions of the learners via an evaluation survey generated by Kahoot! itself. At the end of the study, an additional evaluation form was implemented to gain deeper insights into the students' opinions about the process. The results indicated that the students enjoyed the process because of a number of reasons: winning, learning the content, competing and cooperating with others etc. The majority of the students expressed that they had learned the grammar points with the help of Kahoot!.

The effects of using Kahoot! in the long term have been a matter of question. Wang (2015) questions Kahoot!'s effectiveness on students' interest and classroom dynamics when used for a long time. He collected the data from two groups through a quasi-experimental study. The study was conducted with 126 university students in total. In one of the cases, the students used Kahoot! every week for an entire semester. In the other case, the students used Kahoot! once after a 45-minute lecture. The results of the study show that when frequently used Kahoot! caused only a little decrease in the students' motivation. However, the students stated that they learned the subjects better when they used Kahoot!. The main factor that kept the students' attention was the competitive atmosphere Kahoot! created in the lessons. Since Kahoot! is a fairly new online game, few studies have investigated its effectiveness.

Thereby, there is a small body of research on whether or not using Kahoot! is advantageous to teach vocabulary.

### **Related Studies on Gamifying Vocabulary Learning**

Aghlara and Tamjid (2011) conducted a study on using digital games to promote 40 Iranian children's vocabulary acquisition. They divided the students into two groups and they taught the target words to the experiment group via a digital game whereas the control group received the vocabulary instruction by means of classical methods (e.g. fill-in-the-blanks activities) for 45 days. The children had no English knowledge at the beginning of the study. At the end of the study, a retention test which consisted of 10 questions was given to the groups to measure their vocabulary gain. There was a significant difference between the groups in terms of retention. The experiment group performed better on the test.

Lam (2014) used two online games with 101 freshman year students to consolidate vocabulary learning. The students used two games to revise vocabulary throughout one semester. At the end of the study, an online survey was administered to get their opinions and attitudes towards using online games in learning vocabulary. The results of the study showed that the learners preferred online games to other activities because online games both fun and helped them remember the content better. Also, their attitudes towards language learning change for the better.

Huang (2015) conducted a mixed-methods research in order to determine the effectiveness of using technology in vocabulary teaching. Two classes of second graders were chosen randomly to do the research. A pre-test was applied to both groups at the beginning of the study. The experiment group received vocabulary instruction through technology and played computer games to consolidate newly learned words. However, the same words were taught traditionally to the control group. A post-test was administered to both groups to see whether there was a significant difference between the groups. The results pointed out that the experiment group outperformed the control group. Also, they were more engaged in class activities.

Nahmod (2017) compared the effects of gamification and the traditional learning instruction on vocabulary learning. She conducted the study with 50 participants, 14 of them were special education students. There were two classes which received the same instruction. One week they studied the vocabulary of the unit through traditional exercises, and the next week

they did it via Kahoot!. They took vocabulary quizzes at the end of each week. At the end of the study, the results of the quizzes were compared, and it was found that gamifying vocabulary learning brought about a better result in the learners' scores.

In his study, Pede (2017) used Kahoot! to boost vocabulary acquisition of six learners with learning disabilities. The study lasted for six weeks. The learners used Kahoot! twice a week. Their vocabulary learning was assessed every week. Also, a Likert-type satisfaction survey was given to the learners to get their opinions about Kahoot!. The results suggest that the learners increased their scores. Additionally, the study examined Kahoot!'s effect on student focus on the task. According to the findings, Kahoot! reinforced students' focus on the task.

Ciaramella (2017) evaluated the effects of Kahoot! on learners with disabilities regarding their vocabulary acquisition and retention. She also measured the student satisfaction through a survey. There were seven sixth graders who participated in the study. Their vocabulary knowledge was tested prior to the intervention. The researcher implemented Kahoot! during the intervention phase. The learners practiced the words through Kahoot!. After the intervention, a test was applied to measure their retention, and the results showed that a game-based platform had a positive impact on the learners' retention and acquisition. The learners also enjoyed the process and found Kahoot! easy to use.

Medina and Hurtado (2017) conducted a quasi-experimental study to find out the effects of Kahoot! on vocabulary learning of 105 EFL learners. There were two experimental groups and one control group, each of which consisted of 35 university students. There was a pre-test and a post-test to identify any changes between the groups. Also, a satisfaction survey was given to the students at the end of the study. The learners in the experimental group kept a diary during the treatment. According to the data collected from the students, it was clear that the students who used Kahoot! increased their mean scores, and they were more engaged and motivated during the treatment.

Karatekin (2017) conducted an experimental study with 90 EFL high school students. He utilized Kahoot! in the experimental group and used paper-based methods with the control group. The data were collected through a pre- and post-test. At the end of the study, an attitude questionnaire was applied to have an idea about the attitudes of the students towards gamification. Analysis of the results showed that there was no significant difference between the groups in terms of recalling vocabulary. However, it was evident that Kahoot! added fun to learning and increased engagement in the class.

Bicen and Kocakoyun (2018) investigated the perceptions of students on gamification. They conducted the research with 65 undergraduate students. The students played Kahoot! every week throughout the study. At the end of the study, a 65-item scale was administered to the students to capture their perceptions about the gamification process and Kahoot!. They also wrote evaluation notes on the course. The analysis of the quantitative and the qualitative data revealed that the students felt more motivated due to the reward system. Also, the student reported that learning topics in a gamified manner helped them remember the topics more easily. In addition, they admitted to studying more before coming to class to score better while playing Kahoot!.

The present study investigates the effect of using Kahoot! on EFL learners' vocabulary retention. The experimental group used Kahoot! to consolidate vocabulary while the control group made use of traditional activities to do that. The results and discussion part and the conclusion part are provided in the following chapters.



## **CHAPTER 3**

### **METHODOLOGY**

#### **Research Design**

This study adopted a sequential explanatory research pattern which is one of the mixed methods research designs. First, quantitative data were collected, and then qualitative data were obtained (Cresswell, 2014). The convenient sampling method was chosen to conduct the research. In the majority of educational settings, it is not very likely to assign the students randomly to the groups due to some reasons. As a result, the researchers turn to a quasi-experimental design (Dörnyei, 2007, p. 117). A pre-test/-post-test-control group quasi-experimental design was used to collect quantitative data for the study. According to Muijs (2004), this research design is one of the most reliable research methods. The experiment was carried out within a tightly controlled environment in which the independent variables were manipulated to discover the effect on the dependent variable. This manipulation is mostly referred to as treatment. The independent variable is using an online game-based platform, which is Kahoot! in this case, and the dependent variable is the vocabulary retention of the learners. Two different treatments were administered, and their effects on vocabulary retention were identified by means of pre- and post-test, and finally, a retention test was administered at the end of the study, all of which provided the quantitative data for the study.

The experimental group used Kahoot! to practice the new words whereas the control group used traditional vocabulary activities, which are multiple choice exercises, to reinforce the learning of new words. Both of the groups were instructed through the same methods and techniques. In other words, the teaching they received was the same. However, the consolidation part was different. Also, a five-point Likert-type survey which was used in a

number of previous studies was adapted and administered to the experimental group to gather their ideas about Kahoot!. Apart from that, another survey was developed and implemented to fifteen teachers who have used Kahoot! to teach vocabulary and have been working at the same university.

### **Study Group of the Research**

The participants of this study were selected through convenient sampling, in which the participants are easily accessible to the researcher. This method is practical and easy to use (Berg, 2001, p. 32). It is also one of the most common sampling types in language studies, and it saves time and cost (Dörnyei, 2007, p. 98). The participants of the study were 32 preparatory school students at a state university based in Ankara. Their mother tongue was Turkish, and their English level was upper-intermediate. They were medical school students, and they had 24 hours of English every week. Their instructors of the groups were native speakers of Turkish. The groups had different instructors. There were 18 students in the experimental group, and 20 students in the control. However, the number of the students who took all tests was 16 in each group. As a result, the results of the 32 students were analyzed and discussed. The learners were number coded as St1, St2, and St3 etc. The aptitude and motivation of the learners were more or less similar to each other because their university entrance exam results were similar to one another and also they were placed in those English classes by a placement test administered by the university.

### **Data Collection Procedure**

This study adopted a quasi-experimental research design to collect the quantitative data. It is recommended that these studies should be carried out with 30 individuals in each group. However, 15 individuals in each group are also accepted if the variables and the factors are strictly controlled (Dörnyei, 2008, p. 99). A pre-test that is in the format of multiple choice test was developed by the researcher to determine which words to teach, which provided the quantitative data for the study. Schmitt (2010, p. 164) suggests that the instruments which are going to be used to measure vocabulary knowledge should be piloted beforehand to test whether they work well or not. The pre-test was tested on 127 preparatory school students, apart from the actual study groups, for the sake of measuring the reliability of the pre-test, which was also used as the retention test. Results of the 27 students were excluded from the

pilot study because these students did not take the test seriously, so the analysis of the test was made based on the results of 100 students. Item analysis was made for each item, and the distractors were evaluated based on their performance. Some experts also provided their guidance during pre-test preparation and evaluation procedure. The pre-test was revised and applied to the actual groups. There were 38 learners who participated in the study. However, only 32 of them took all of the tests. The results of the pilot study and the actual study were compared to select the target words. The learners in the pilot study and the actual groups were different. Based on these comparisons, 10 least familiar words were chosen to be the target words. One week after the pre-test, an immediate post-test was designed and administered to measure the effectiveness of the treatments. Its results were analysed through parametric tests. According to Schmitt (2010, p. 156), vocabulary learning is longitudinal and incremental. Only a research design with a longitudinal element can capture the essence of vocabulary learning effectively. One way of doing that is adding one or more delayed post-tests. As vocabulary learning is susceptible to attrition, only delayed post-tests can indicate whether or not long-term retention has taken place. Therefore, a delayed post-test was applied to the groups to measure their learning and retention. At the end of the study, a five-point Likert-type survey that consists of twelve items was applied to the experimental group. The survey has been used by a number of studies (Ciaramella, 2017; Medina & Hurtado, 2017; Pede, 2017). However, the developer of the survey was not cited in these studies. The researcher tried to find the actual developer of the survey via e-mails, but could not get a reply. Some adaptations were made to make it more suitable to the context of this study. In the survey '1' means 'strongly disagree' while '5' means 'strongly agree'. Another survey which has been developed by the researcher was used to gather some ideas and opinions of the fifteen instructors who have used Kahoot! to teach vocabulary. It was an online survey which was sent to the instructors via their e-mails. The instructors were working at the same university. The researcher consulted experts while developing both surveys. The validity and the reliability of the surveys were established with the help of the experts. The application lasted for five weeks including the pilot study. The plan of the study can be seen via the table below.

Table 3.

*Data Collection Procedure*

| Piloting the instruments | Implementing the pre-test    | Treatment                 | Immediate post-test       | Student Survey            | Delayed post-test (retention test)    | Teacher Survey              |
|--------------------------|------------------------------|---------------------------|---------------------------|---------------------------|---------------------------------------|-----------------------------|
| 1 week before the study  | 1 week after the pilot study | 1 week after the pre-test | Right after the treatment | Right after the treatment | 3 weeks after the immediate post-test | After the delayed post-test |

**Data Collection Instruments**

In the present study, both qualitative and quantitative data were collected by means of a set of pre- and post-tests and surveys. There was one pre-test, one immediate post-test, and one delayed post-test was the same test as the pre-test in the study. The student survey consisted of twelve statements to which the learners reacted by assigning numbers from 1 to 5. The qualitative data were gathered through the teacher survey which comprised 17 items, 9 of which were open-ended questions.

**Pre-Test**

The quantitative data were collected through a set of pre- and post-tests. 30 words were selected from the learners' course books' word list of unit 8. They were using Speak-Out Upper-Intermediate course book. The pre-test was piloted beforehand. The Cronbach's Alpha value was found 0.771.

Table 4.

*Results of the Pre-Test (Pilot Study)*

| Cronbach's Alpha | N of Items | Mean    | N   | Std. Deviation |
|------------------|------------|---------|-----|----------------|
| .771             | 30         | 51.5890 | 100 | 17.121519      |

It was administered to 127 preparatory school students. It was analyzed regarding its difficulty and discrimination level. An item analysis was carried out for each item (see

Appendix 9). Also, the pilot study gave some insights into the potential target words. The pre-test was administered before the study to determine whether the learners know these words or not. It played an important role in selecting the target words as well. The percentages of the learners who know the words in the pilot study and the actual study were compared in the table below.

Table 5.

*Comparison of the Pilot Study and Actual Study Groups*

| Words         | Percentage of the learners who know the word (pilot study) | Percentage of the learners who know the word (study groups) |
|---------------|------------------------------------------------------------|-------------------------------------------------------------|
| breezy        | 87%                                                        | 28.1%                                                       |
| disgusted     | 75%                                                        | 90.6%                                                       |
| colleague     | 71%                                                        | 90.6%                                                       |
| fuss          | 69%                                                        | 65.6%                                                       |
| observe       | 69%                                                        | 90.6%                                                       |
| custom        | 69%                                                        | 87.5%                                                       |
| ritual        | 68%                                                        | 87.5%                                                       |
| groggy        | 64%                                                        | 59.3%                                                       |
| solution      | 62%                                                        | 78.1%                                                       |
| efficient     | 59%                                                        | 59.3%                                                       |
| collaborative | 58%                                                        | 71.8%                                                       |
| diplomatic    | 54%                                                        | 62.5%                                                       |
| principle     | 53%                                                        | 62.5%                                                       |
| cringe        | 53%                                                        | 84.3%                                                       |
| assertive     | 51%                                                        | 78.1%                                                       |
| receipt       | 49%                                                        | 62.5%                                                       |
| betray        | 48%                                                        | 71.8%                                                       |
| faithful      | 46%                                                        | 78.1%                                                       |
| assessment    | 46%                                                        | 56.2%                                                       |
| examine       | 43%                                                        | 75%                                                         |
| conflictual   | 42%                                                        | 28.1%                                                       |
| soften        | 40%                                                        | 31.2%                                                       |
| harsh         | 37%                                                        | 75%                                                         |
| gesture       | 36%                                                        | 53.1%                                                       |
| despise       | 34%                                                        | 40.6%                                                       |
| alert         | 31%                                                        | 34.3%                                                       |
| vast          | 29%                                                        | 34.3%                                                       |
| evacuate      | 27%                                                        | 43.7%                                                       |
| postpone      | 20%                                                        | 34.37%                                                      |
| dread         | 20%                                                        | 12.5%                                                       |

There are two drastic differences between the results of the pilot study and the actual study. One of them is *breezy* and the other one is *conflictual*. The reason why the percentages differed so much could be the revising process of the pre-test (see Appendix 1). In the pilot study, *breezy* was in the stem whereas, in the actual study, it was in the options (see Appendix 2). The same thing can be true for the word *conflictual*. Although its place remained the same, a poor distractor was replaced in that item. It is important to administer a pre-test because the results of the delayed post-test, i.e., retention test, cannot be labeled as new

learning unless the pre-existing knowledge is determined. The pre-tests are also important in identifying any difference between the groups (Schmitt, 2010, p. 179). According to the pre-test results, 10 target words were selected. They were *postpone*, *despise*, *breezy*, *alert*, *dread*, *vast*, *conflictual*, *soften*, *gesture*, and *evacuate*. As the learners were extraordinarily successful, it was really hard to design the tests and select the words that they did not know. The learners had good contextual guessing skills as well. Even though the words like *cringe*, *fuss*, *groggy*, and *betray* were challenging words and they were not very frequent words, they managed to get the correct answer. Besides, they had not learned the words yet at that time. The most challenging aspect of the study was selecting the words. As a rule of thumb, the words which were known by 12,5-53 percent of the learners were chosen to be taught. In other words, the least familiar words were chosen to be instructed to the learners. The pre-test consisted of 30 items. The same test was used as a delayed post-test as well. The learners took ESP and General English courses. According to what their instructors told me, the learners cared about the ESP course more than the General English course. As the ESP course is directly related to their profession, they were paying more attention to the words in that course. The learners did not have any purpose to learn the words as they were ordinary course book words to them. They knew that they were not going to be tested for these words. As a result, we chose the words from the General English course. Also, the instructors stated that they were not doing any additional vocabulary activities in the curriculum. They were mostly focusing on the four skills, which was an advantage for this study. They were practicing the vocabulary only by the course book activities. Also, any vocabulary activity or self-study could manipulate the results because they were going to increase the exposure to the words resulting in better retention. Therefore, the words that carried little meaning for the learners were chosen for this study. The results of the pre-test were presented in the table below.

Table 6.

*The Results of the Pre-Test (Actual Study)*

| Pre-Test Item Number | Potential Target Words | Number of Correct Answers | Number of Wrong Answers | Number of Unanswered Questions | Number of Test Takers |
|----------------------|------------------------|---------------------------|-------------------------|--------------------------------|-----------------------|
| 1                    | fuss                   | 21                        | 8                       | 3                              |                       |
| 2                    | postpone               | 11                        | 19                      | 2                              |                       |
| 3                    | despise                | 13                        | 19                      | -                              |                       |
| 4                    | examine                | 24                        | 6                       | 2                              |                       |
| 5                    | breezy                 | 9                         | 21                      | 2                              |                       |
| 6                    | alert                  | 11                        | 18                      | 3                              |                       |
| 7                    | harsh                  | 24                        | 8                       | -                              |                       |
| 8                    | principle              | 20                        | 10                      | 2                              |                       |
| 9                    | colleague              | 29                        | 1                       | 2                              |                       |
| 10                   | dread                  | 4                         | 27                      | 1                              |                       |
| 11                   | observe                | 29                        | 3                       | -                              |                       |
| 12                   | vast                   | 11                        | 20                      | 1                              |                       |
| 13                   | conflictual            | 9                         | 18                      | 5                              |                       |
| 14                   | groggy                 | 19                        | 10                      | 3                              |                       |
| 15                   | efficient              | 19                        | 13                      | -                              |                       |
| 16                   | disgusted              | 29                        | 3                       | -                              |                       |
| 17                   | collaborative          | 23                        | 7                       | 2                              |                       |
| 18                   | faithful               | 25                        | 6                       | 1                              |                       |
| 19                   | diplomatic             | 20                        | 12                      | -                              |                       |
| 20                   | cringe                 | 27                        | 5                       | -                              |                       |
| 21                   | soften                 | 10                        | 22                      | -                              |                       |
| 22                   | assertive              | 25                        | 6                       | 1                              |                       |
| 23                   | gesture                | 17                        | 15                      | -                              |                       |
| 24                   | assessment             | 18                        | 11                      | 3                              |                       |
| 25                   | evacuate               | 14                        | 18                      | -                              |                       |
| 26                   | solution               | 25                        | 5                       | 2                              |                       |
| 27                   | custom                 | 28                        | 4                       | -                              |                       |
| 28                   | receipt                | 20                        | 12                      | -                              |                       |
| 29                   | betray                 | 23                        | 7                       | 2                              |                       |
| 30                   | ritual                 | 28                        | 4                       | -                              |                       |

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After the pre-test was analyzed via an independent-samples t-test, it was seen that there was no statistical difference between the groups. A meeting with the instructors was held before the treatment. They were informed about the target words. They reached a consensus on the

instruction methods. One week after the pre-test, the learners received the instruction. The items in the activities they did in the classrooms were the same for both groups. The experiment group did the exercises through Kahoot! (see appendix 4) while the control group did the same activity which had the same questions as the experiment group via traditional pen and paper method (see Appendix 3). The instruction of the words lasted for two class hours, and the practice took half a class hour.

### **Immediate Post-Test**

After the instruction and the practice, an immediate post-test was carried out to measure the short-term retention of the learners (see Appendix 5). Also, the post-tests were designed by the researcher, and all of the tests aforementioned were the same for both groups. The immediate post-test consisted of 20 items. Schmitt (2010, p. 180) states that it is best to conceal the target items with the help of distractors. By doing so, the possibility of the learners' becoming aware of the target items can be diminished. In the immediate post-test, 10 words were the target words, the other 10 words were the distractors. According to Schmitt (2010, pp.155-156), during vocabulary learning assessments, implementing a pre-test, immediate post-test, and delayed post-test would give the best results. He mentions the advantages and disadvantages of implementing an immediate post-test. One of its advantages is that it can be very informative about the effectiveness of the treatment. However, drawing conclusions by looking at the results of the immediate post-test may be problematic. It is unlikely that one or a small number of exposures lead to long-term learning. Therefore, an immediate post-test may overestimate durable learning. To overcome this problem, a delayed post-test must be applied to measure long-term learning and attrition. Most of the research clearly demonstrates that the results of the immediate post-test drastically drop after a certain amount of time passes because vocabulary learning, like any learning, is liable to attrition. Immediate post-tests should be seen as a sign of the effectiveness of the treatment. However, delayed post-tests should be considered as a signal of learning. There is another issue with immediate post-tests that they also contribute to vocabulary learning as the learners pay more attention to tests; it may assist the progress of vocabulary learning. In the studies which adopt a T1-treatment-T2-delayed T3 design, the scores of the delayed post-test are expected to be higher than the studies which do not have an immediate post-test.



### **Retention Test (Delayed Post-Test)**

Baddeley (1990) proposes that a delayed post-test should be applied 3 weeks after the treatment to see the amount of that have been forgotten and retained. A delayed post-test applied less than three weeks later should be avoided and is not recommended by the scholars. Therefore, a delayed post-test was applied to the groups three weeks after the immediate post-test. It was the same as the pre-test, but the places of the items and the order of the distractors were different (see Appendix 6). It was administered to assess the retention of the students and to identify any difference between the control and the experimental group in terms of retention. In order to get a better insight into the lexical knowledge, the researchers need to measure it more than once. In this way, they can get more solid ideas than measuring it once (Schmitt, 2010, p. 152).

### **Surveys**

After the experiment was completed, a survey was administered to gain some insights about the learners' opinions about Kahoot!. The survey was made up of 12 items. It was a Likert-type survey. '1' means strongly disagree and '5' means strongly agree. The survey was not implemented in its original form. Some adjustments were made and 3 items were added. The survey was translated into Turkish and the translated version was translated back into English by a professional to make sure that no meaning was lost. Also, another survey was implemented with fifteen EFL teachers to have an idea about their opinions about using Kahoot! to teach vocabulary. This survey was developed by the researcher. It consisted of 17 items, 9 of which are open-ended questions. With the help of these surveys, the triangulation of the study was established.

### **Data Analysis**

A pilot study was conducted before the actual study to measure the reliability of the pre-test, which was also going to be used as the retention test. The 30-item pre-test was applied to 127 students (see Appendix 1). After that item analyses were done to each item in the test. They were analyzed in terms of discrimination and difficulty level, and the distractors were tested (see Appendix 10). The distractors which did not work well were replaced (see Appendix 2). The Cronbach' alpha was calculated via Statistical Package for the Social Sciences (SPSS). It was found to be 0.771, which was good enough to use the test.

Afterwards, the revised pre-test was applied to the actual study groups. The quantitative data, the results of the pre-test of for both groups, were analyzed, and the findings were compared to each other to determine whether two groups were similar to each other regarding the scores of the pre-test. First, a Shapiro-Wilk test was run to see if the data were distributed normally, which is a prerequisite of performing a t-test. The data were normally distributed according to the Shapiro-Wilk test. After that, the results of the pre-test, the immediate post-test, and the retention test were compared through a parametric test, which was independent-samples t-test. Dörnyei (2007, p. 215) advocates that a t-test is required to reach a conclusion that the results can be adhered to any real difference.

The results gained from the student survey were analyzed via SPSS software. The findings were presented through tables and discussed in detail. The quantitative data gained from the teacher survey were grouped, presented through charts and commented on by the researcher.

## **CHAPTER 4**

### **RESULTS AND DISCUSSION**

#### **Introduction**

In this chapter of the study, the results of the pre- and post-tests are presented. Also, the comparisons between the groups are demonstrated with the help of statistical analyses. The effects of Kahoot! and traditional exercises are examined. The results obtained from the surveys are displayed.

#### **Results**

This study aimed to find answers to these questions:

1. Is there a significant difference between Kahoot! and multiple-choice exercises in terms of their effects on vocabulary retention?
2. What are the opinions of EFL learners on Kahoot!?
3. What are the opinions of EFL teachers on using Kahoot! in vocabulary teaching?

In search of answers to these questions, two treatments were applied to the groups. The experimental group practiced vocabulary by Kahoot! and the control group used multiple-choice exercises. The opinions of 16 teachers and 15 learners were collected to arrive at more valid conclusions about gamifying vocabulary learning.

#### **Pre-Test**

To find an answer to the first question, a set of pre- and post-test were implemented to both groups. First of all, the pre-test was applied to make sure that the groups had no initial differences in terms of vocabulary knowledge. Also, the pre-test guided the researcher in

selecting the target words. The results of the test were analysed by Shapiro-Wilk test to make sure that the data were distributed according to the normal distribution.

Table 7.

*Shapiro-Wilk Test for the Pre-Test*

|          |              | Shapiro-Wilk |    |      |
|----------|--------------|--------------|----|------|
|          | Groups       | Statistic    | df | Sig. |
| Pre-test | Experimental | .916         | 16 | .146 |
|          | Control      | .892         | 16 | .080 |

The significant difference value is higher than 0.05, which means that the data is normally distributed and there is no significant difference between the groups. After that, the data were analyzed through descriptive statistics. The mean scores of the groups were found.

Table 8.

*Descriptive Statistics of the Groups (Pre-Test)*

|          |              | N  | Mean    | Std. Deviation | Std. Error Mean |
|----------|--------------|----|---------|----------------|-----------------|
|          | Groups       |    |         |                |                 |
| Pre-test | Experimental | 16 | 62.2563 | 10.07942       | 2.51985         |
|          | Control      | 16 | 64.7313 | 13.98612       | 3.49653         |

It can be seen that the mean score of the control group is slightly higher than the experimental group. In order to be sure that this difference was not a significant one. An independent-samples t-test was performed to identify the differences between the groups. Independent-samples t-test is run to find out if the difference between two sets of scores is big enough to be considered as significant (Dörnyei, 2007, p. 213).

Table 9.

*Independent-Samples t-Test of Pre-Test*

| Levene's Test for Equality of Variances |      | t-test for Equality of Means |       |    |                 |                 |
|-----------------------------------------|------|------------------------------|-------|----|-----------------|-----------------|
| Pre-test                                | F    | Sig.                         | t     | df | Sig. (2-tailed) | Mean Difference |
|                                         | .389 | .538                         | -.574 | 30 | .570            | -2.47500        |

It can be seen from the table above that significant difference is higher than 0.05. This means that there is no significant difference between the groups. The experiment continued with the immediate post-test.

**Immediate Post-Test**

The immediate post-test was administered to the groups to detect the effects of the treatment. It consisted of 20 items (10 target words and 10 distractors). The results of the immediate post-test showed that both of the treatments were effective in terms of vocabulary learning as most of the students increased their scores dramatically (see Table 16).

Table 10.

*Descriptive Statistics of Immediate Post-Test*

|                     | Groups       | N  | Mean    | Std. Deviation | Std. Error Mean |
|---------------------|--------------|----|---------|----------------|-----------------|
| Immediate Post-Test | Experimental | 16 | 72.1875 | 12.10630       | 3.02658         |
|                     | Control      | 16 | 70.6250 | 18.87459       | 4.71865         |

As it can be seen from Table 10 above the mean score of the experimental group increased by almost 10 points and the mean score of the control group increased by more or less 6 points. By looking at these results, it can be concluded that Kahoot! worked better than the traditional method. However, these results should not be considered as learning because the information was brand new at that time. Most of the forgetting occurs within the first 24 hours after the instruction (Schmitt, 2010, p. 156). These results, on the other hand, can give an idea of how well the treatment worked. Still, an independent-samples t-test was run to decide whether the difference between the groups was a significant one or not.

Table 11.

*Shapiro-Wilk Test for Immediate Post-Test and Retention Test*

|                     |              | Shapiro-Wilk |    |      |
|---------------------|--------------|--------------|----|------|
|                     | Groups       | Statistic    | df | Sig. |
| Immediate Post-Test | Experimental | .952         | 16 | .515 |
|                     | Control      | .912         | 16 | .124 |
| Retention           | Experimental | .911         | 16 | .122 |
|                     | Control      | .920         | 16 | .168 |

The significance value clearly demonstrates that the data is not statistically different from one another ( $Sig.>0.05$ ). Therefore, it is possible to run an independent-samples t-test for these sets of data.

Table 12.

*Independent-Samples t-Test of Immediate Post-Test*

|                     |                         | Levene's Test for Equality of Variances |      | t-test for Equality of Means |    |                 |                 |                                           |          |          |
|---------------------|-------------------------|-----------------------------------------|------|------------------------------|----|-----------------|-----------------|-------------------------------------------|----------|----------|
|                     |                         |                                         |      |                              |    |                 |                 | 95% Confidence Interval of the Difference |          |          |
|                     |                         | F                                       | Sig. | t                            | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference                     | Lower    | Upper    |
| Immediate post-test | Equal variances assumed | 3.791                                   | .061 | .279                         | 30 | .782            | 1.56250         | 5.60587                                   | -9.88621 | 13.01121 |

By looking at the results of the independent-samples t-test above, it can be deduced that the mean difference between the groups does not indicate a significant difference. However, implementing the immediate post-test gave insights into the effectiveness of the treatment.

**Retention Test (Delayed Post-Test)**

To get a better understanding of the vocabulary retention of the learners, a retention test was administered to both groups three weeks after the treatment. The mean scores of the learners are presented in the table below.

Table 13.

*Descriptive Statistics of Retention Test (Delayed Post-Test)*

|           | Groups       | N  | Mean    | Std. Deviation | Std. Error Mean |
|-----------|--------------|----|---------|----------------|-----------------|
| Retention | Experimental | 16 | 76.6938 | 13.65784       | 3.41446         |
|           | Control      | 16 | 68.4500 | 21.45787       | 5.36447         |

The table above demonstrates that the experimental group outperformed the control group in terms of vocabulary learning. Even these results suggest that Kahoot! had a positive impact on the learners' vocabulary retention. However, it is best not to jump to conclusions without running an independent-samples t-test to reach more stable conclusions.

Table 14.

*Independent-Samples t-Test of Retention Test*

|           |                               | Levene's<br>Test for<br>Equality of<br>Variances |      | t-test for Equality of Means |    |                     |                    |                                                 |          |          |
|-----------|-------------------------------|--------------------------------------------------|------|------------------------------|----|---------------------|--------------------|-------------------------------------------------|----------|----------|
|           |                               |                                                  |      |                              |    |                     |                    | 95% Confidence<br>Interval of the<br>Difference |          |          |
|           |                               | F                                                | Sig. | t                            | df | Sig. (2-<br>tailed) | Mean<br>Difference | Std. Error<br>Difference                        | Lower    | Upper    |
| Retention | Equal<br>variances<br>assumed | 3.802                                            | .061 | 1.296                        | 30 | .205                | 8.24375            | 6.35893                                         | -4.74293 | 21.23043 |

The significance value of the test above implies that there is no significant difference between the groups. However, the value (0.061) is really close to 0.05. Even though there is no statistical difference between the groups, it can be suggested that Kahoot! increased the vocabulary retention more than the traditional activity. In order to see the bigger picture, it is best to investigate the vocabulary scores and gains of each learner.

Table 15.

*Descriptive Statistics of the Two Groups (All Tests)*

| Groups       |           | Tests    |                     |           |
|--------------|-----------|----------|---------------------|-----------|
|              |           | Pre-Test | Immediate Post-Test | Retention |
| Experimental | Mean      | 62.2563  | 72.1875             | 76.6938   |
|              | N         | 16       | 16                  | 16        |
|              | Std.      | 10.07942 | 12.10630            | 13.65784  |
|              | Deviation |          |                     |           |
| Control      | Mean      | 64.7313  | 70.6250             | 68.4500   |
|              | N         | 16       | 16                  | 16        |
|              | Std.      | 13.98612 | 18.87459            | 21.45787  |
|              | Deviation |          |                     |           |

It can be deduced from Table 15 that the mean score of the experimental group ( $\bar{X}=76.69$ ) increased more than the control group ( $\bar{X}=68.45$ ) in the retention test. However, they had similar scores in the immediate post-test, which suggests that both of the treatments worked well with regard to short-term retention. However, it can be said that Kahoot! worked slightly better than the traditional exercise regarding long-term retention. An unexpected result of this study is that the experimental group increased their scores drastically in the retention test. However, it was assumed to be the opposite because attrition usually occurs over time. This increase can be seen from the table on the page. There may be some possible explanations for this increase. One of them is the element of luck, which is a disadvantage of multiple-choice tests. Another explanation can be that the learners in the experimental group learned not only the target words but also the distractors. In order to grasp it thoroughly, vocabulary gain of the learners in both groups were examined word by word.



Table 16.

*Scores of the Learners*

| Students | Pre-test<br>(T1) | Immediate Post-<br>Test (T2) | Retention Test<br>(T3) | Gain Scores<br>(T3-T1) |
|----------|------------------|------------------------------|------------------------|------------------------|
| St1      | 63.70            | 75.00                        | 76.90                  | 13.2                   |
| St2      | 67.00            | 60.00                        | 70.30                  | 3.3                    |
| St3      | 57.10            | 75.00                        | 83.50                  | 26.4                   |
| St4      | 67.00            | 85.00                        | 93.40                  | 26.4                   |
| St5      | 73.60            | 85.00                        | 93.40                  | 19.8                   |
| St6      | 73.60            | 75.00                        | 93.40                  | 19.8                   |
| St7      | 80.20            | 95.00                        | 93.40                  | 13.2                   |
| St8      | 57.10            | 70.00                        | 76.90                  | 19.8                   |
| St9      | 50.50            | 65.00                        | 53.80                  | 3.3                    |
| St10     | 50.50            | 70.00                        | 60.40                  | 9.9                    |
| St11     | 50.50            | 55.00                        | 63.70                  | 13.2                   |
| St12     | 60.40            | 65.00                        | 63.70                  | 3.3                    |
| St13     | 53.80            | 60.00                        | 60.40                  | 6.6                    |
| St14     | 63.70            | 90.00                        | 90.10                  | 26.4                   |
| St15     | 50.50            | 55.00                        | 73.60                  | 23.1                   |
| St16     | 76.90            | 75.00                        | 80.20                  | 3.3                    |
| St17*    | 73.60            | 45.00                        | 40.60                  | -33                    |
| St18     | 83.50            | 90.00                        | 80.20                  | -3.3                   |
| St19     | 73.60            | 85.00                        | 80.20                  | 6.6                    |
| St20     | 60.40            | 65.00                        | 47.20                  | -13.2                  |
| St21     | 80.20            | 95.00                        | 93.40                  | 13.2                   |
| St22     | 27.40            | 50.00                        | 47.20                  | 19.8                   |
| St23     | 50.50            | 30.00                        | 70.30                  | 19.8                   |
| St24     | 63.70            | 60.00                        | 57.10                  | -6.6                   |
| St25     | 73.60            | 75.00                        | 83.60                  | 10                     |
| St26     | 60.40            | 70.00                        | 67.00                  | 6.6                    |
| St27     | 47.20            | 50.00                        | 20.80                  | -26.4                  |
| St28     | 63.70            | 85.00                        | 86.80                  | 23.2                   |
| St29     | 63.70            | 75.00                        | 90.10                  | 26.4                   |
| St30     | 67.00            | 85.00                        | 57.10                  | -9.9                   |
| St31     | 73.60            | 85.00                        | 80.20                  | 6.6                    |
| St32     | 73.60            | 85.00                        | 93.40                  | 19.8                   |

Note: The learners up to the asterisked one (i.e., St17) are in the experimental group (St1-St16), the learners after the asterisk are in the control group (St17-St32).

Table 16 provides a clear picture of the whole process. It can be seen that most of the learners showed a steady increase in their scores, but some of them scored lower in the retention test, which is an expected result of vocabulary learning because it is susceptible to attrition. However, a few of the scores plunged drastically. One of the reasons for that could be boredom. The learners may not have wanted to do the test or experienced some other problems at that time. The overall view of the table illustrates that both of the treatments

worked fairly good with most of the learners. Nevertheless, the scores are not enough to indicate that the target words have been mastered by the learners. Therefore, a deeper investigation is needed. Tables below summarize the performance of the learners. The tables were prepared for ten target words. However, in order to ease the burden of the readers, the tables were divided based on the words and the groups.

Table 17.

*Target Word Mastery of the Learners (Experimental Group)*

|          |       | Target Words |           |           |          |           |           |          |           |           |          |           |           |          |           |           |
|----------|-------|--------------|-----------|-----------|----------|-----------|-----------|----------|-----------|-----------|----------|-----------|-----------|----------|-----------|-----------|
| Students | Tests | Postpone     |           |           | Despise  |           |           | Alert    |           |           | Breezy   |           |           | Dread    |           |           |
|          |       | Pre-test     | Post-test | Retention | Pre-test | Post-test | Retention | Pre-test | Post-test | Retention | Pre-test | Post-test | Retention | Pre-test | Post-test | Retention |
| St1      |       | +            | +         | +         | +        | +         | +         | -        | +         | +         | -        | -         | +         | +        | -         | -         |
| St2      |       | +            | +         | +         | -        | -         | -         | +        | +         | +         | +        | +         | +         | -        | -         | -         |
| St3      |       | -            | +         | +         | +        | +         | +         | -        | +         | +         | -        | +         | +         | -        | +         | +         |
| St4      |       | +            | +         | +         | +        | +         | +         | -        | +         | +         | -        | +         | +         | -        | +         | +         |
| St5      |       | +            | +         | +         | +        | +         | +         | -        | +         | +         | +        | +         | +         | -        | +         | +         |
| St6      |       | -            | +         | +         | +        | +         | +         | +        | +         | +         | -        | +         | +         | +        | +         | +         |
| St7      |       | +            | +         | +         | +        | +         | +         | +        | +         | +         | -        | +         | +         | -        | +         | -         |
| St8      |       | +            | -         | +         | -        | +         | -         | -        | -         | +         | -        | +         | -         | -        | +         | -         |
| St9      |       | -            | +         | -         | -        | +         | -         | -        | +         | +         | -        | +         | +         | -        | +         | -         |
| St10     |       | -            | +         | +         | -        | +         | +         | -        | +         | -         | +        | -         | -         | -        | +         | +         |
| St11     |       | +            | +         | +         | +        | -         | +         | -        | +         | +         | -        | +         | +         | +        | -         | -         |
| St12     |       | -            | +         | +         | -        | +         | +         | -        | +         | +         | +        | +         | +         | -        | +         | +         |
| St13     |       | -            | +         | -         | -        | -         | +         | -        | +         | -         | -        | -         | -         | -        | -         | -         |
| St14     |       | -            | +         | +         | -        | +         | -         | -        | +         | +         | +        | +         | +         | -        | +         | +         |
| St15     |       | -            | +         | +         | -        | -         | -         | +        | -         | -         | -        | -         | +         | -        | +         | +         |
| St16     |       | -            | +         | -         | -        | +         | -         | +        | +         | +         | -        | +         | +         | -        | -         | +         |
| Total    |       | 7            | 15        | 13        | 7        | 12        | 10        | 5        | 14        | 13        | 5        | 12        | 13        | 3        | 11        | 9         |

Table 18.

*Target Word Mastery of the Learners (Control Group)*

|       |          | Target Words |           |           |          |           |           |          |           |           |          |           |           |          |           |           |
|-------|----------|--------------|-----------|-----------|----------|-----------|-----------|----------|-----------|-----------|----------|-----------|-----------|----------|-----------|-----------|
| Tests | Students | Postpone     |           |           | Despise  |           |           | Alert    |           |           | Breezy   |           |           | Dread    |           |           |
|       |          | Pre-test     | Post-test | Retention | Pre-test | Post-test | Retention | Pre-test | Post-test | Retention | Pre-test | Post-test | Retention | Pre-test | Post-test | Retention |
|       | St17     | +            | -         | +         | -        | -         | -         | +        | +         | -         | -        | -         | -         | -        | -         | +         |
|       | St18     | -            | +         | -         | +        | +         | +         | +        | +         | +         | -        | +         | -         | -        | +         | +         |
|       | St19     | -            | -         | -         | +        | +         | +         | +        | -         | +         | -        | +         | +         | -        | +         | -         |
|       | St20     | -            | -         | -         | -        | +         | -         | -        | +         | -         | +        | -         | -         | -        | -         | -         |
|       | St21     | -            | -         | -         | +        | +         | +         | +        | +         | +         | -        | +         | +         | +        | +         | +         |
|       | St22     | -            | -         | -         | -        | +         | -         | -        | +         | +         | -        | -         | -         | -        | -         | -         |
|       | St23     | -            | +         | -         | -        | +         | -         | +        | +         | +         | -        | -         | -         | -        | -         | -         |
|       | St24     | +            | +         | -         | -        | -         | +         | -        | +         | +         | -        | +         | +         | -        | -         | -         |
|       | St25     | -            | -         | +         | -        | +         | -         | -        | +         | +         | -        | +         | +         | -        | -         | +         |
|       | St26     | -            | +         | -         | -        | +         | +         | -        | +         | -         | +        | -         | +         | -        | -         | +         |
|       | St27     | +            | +         | +         | +        | -         | -         | -        | +         | -         | +        | +         | +         | -        | +         | -         |
|       | St28     | -            | +         | +         | +        | +         | +         | -        | +         | +         | -        | -         | -         | -        | +         | -         |
|       | St29     | -            | +         | +         | -        | +         | +         | -        | +         | +         | -        | +         | +         | -        | -         | +         |
|       | St30     | -            | +         | -         | -        | +         | +         | -        | +         | +         | +        | +         | +         | -        | -         | +         |
|       | St31     | -            | -         | -         | -        | -         | +         | -        | +         | +         | -        | +         | +         | -        | -         | -         |
|       | St32     | +            | +         | +         | +        | +         | +         | +        | +         | +         | -        | -         | +         | -        | +         | -         |
|       | Total    | 4            | 9         | 6         | 6        | 12        | 10        | 6        | 15        | 12        | 4        | 9         | 10        | 1        | 6         | 7         |

Table 19.

*Target Word Mastery of the Learners (Experimental Group)*

|       |          | Target Words |           |           |          |           |           |          |           |           |          |           |           |             |           |           |
|-------|----------|--------------|-----------|-----------|----------|-----------|-----------|----------|-----------|-----------|----------|-----------|-----------|-------------|-----------|-----------|
| Tests | Students | Vast         |           |           | Soften   |           |           | Gesture  |           |           | Evacuate |           |           | Conflictual |           |           |
|       |          | Pre-test     | Post-test | Retention | Pre-test | Post-test | Retention | Pre-test | Post-test | Retention | Pre-test | Post-test | Retention | Pre-test    | Post-test | Retention |
| St1   |          | -            | +         | -         | +        | +         | +         | -        | +         | -         | +        | +         | +         | +           | +         | +         |
| St2   |          | -            | -         | -         | -        | -         | -         | -        | +         | +         | +        | +         | +         | -           | -         | +         |
| St3   |          | -            | +         | +         | -        | +         | +         | -        | +         | +         | -        | +         | -         | -           | +         | -         |
| St4   |          | +            | +         | +         | -        | +         | +         | +        | +         | +         | +        | +         | +         | -           | +         | -         |
| St5   |          | -            | +         | +         | -        | +         | +         | +        | +         | +         | +        | +         | -         | -           | +         | +         |
| St6   |          | -            | +         | -         | -        | +         | +         | +        | +         | +         | +        | +         | +         | +           | +         | +         |
| St7   |          | +            | +         | +         | +        | +         | +         | +        | +         | +         | -        | +         | -         | -           | +         | +         |
| St8   |          | -            | +         | +         | +        | +         | +         | -        | +         | -         | -        | -         | +         | -           | +         | +         |
| St9   |          | -            | +         | -         | -        | -         | -         | -        | +         | -         | -        | +         | -         | -           | -         | +         |
| St10  |          | -            | +         | +         | -        | +         | -         | +        | +         | +         | +        | +         | +         | -           | -         | -         |
| St11  |          | -            | +         | -         | -        | +         | -         | +        | -         | +         | +        | +         | +         | -           | -         | -         |
| St12  |          | -            | +         | -         | +        | +         | +         | +        | +         | +         | -        | +         | -         | +           | +         | +         |
| St13  |          | -            | +         | +         | -        | -         | -         | -        | +         | +         | -        | -         | -         | -           | +         | -         |
| St14  |          | -            | +         | -         | -        | +         | +         | -        | +         | +         | -        | +         | +         | -           | +         | -         |
| St15  |          | -            | -         | -         | -        | +         | +         | -        | +         | +         | -        | +         | +         | -           | -         | -         |
| St16  |          | +            | -         | +         | +        | +         | +         | +        | +         | +         | -        | +         | +         | -           | +         | +         |
| Total |          | 3            | 13        | 8         | 5        | 13        | 11        | 8        | 15        | 13        | 7        | 14        | 10        | 3           | 11        | 9         |

Table 20.

*Target Word Mastery of the Learners (Control Group)*

| Target Words      |          |           |           |          |           |           |          |           |           |          |           |           |             |           |           |
|-------------------|----------|-----------|-----------|----------|-----------|-----------|----------|-----------|-----------|----------|-----------|-----------|-------------|-----------|-----------|
| Tests<br>Students | Vast     |           |           | Soften   |           |           | Gesture  |           |           | Evacuate |           |           | Conflictual |           |           |
|                   | Pre-test | Post-test | Retention | Pre-test | Post-test | Retention | Pre-test | Post-test | Retention | Pre-test | Post-test | Retention | Pre-test    | Post-test | Retention |
| St17              | +        | +         | +         | -        | -         | -         | -        | +         | +         | -        | -         | -         | -           | -         | -         |
| St18              | +        | +         | -         | -        | +         | +         | +        | +         | +         | +        | +         | +         | +           | -         | +         |
| St19              | +        | +         | +         | -        | +         | +         | -        | +         | +         | +        | -         | -         | +           | +         | +         |
| St20              | -        | +         | +         | -        | -         | -         | -        | -         | -         | -        | -         | -         | +           | +         | -         |
| St21              | +        | +         | +         | +        | +         | +         | +        | +         | +         | +        | +         | +         | +           | +         | +         |
| St22              | -        | +         | +         | +        | -         | -         | -        | -         | +         | -        | -         | -         | -           | -         | -         |
| St23              | -        | -         | -         | -        | -         | -         | +        | +         | +         | -        | -         | -         | +           | +         | +         |
| St24              | -        | +         | -         | -        | +         | -         | -        | +         | -         | -        | -         | -         | -           | -         | +         |
| St25              | -        | -         | -         | -        | +         | +         | +        | +         | +         | -        | +         | -         | -           | +         | +         |
| St26              | -        | +         | -         | -        | +         | +         | +        | +         | +         | -        | -         | +         | -           | +         | +         |
| St27              | +        | -         | -         | -        | -         | +         | -        | +         | -         | +        | +         | -         | -           | -         | -         |
| St28              | -        | +         | +         | -        | +         | +         | +        | +         | +         | +        | +         | +         | -           | +         | +         |
| St29              | -        | +         | +         | +        | +         | +         | -        | +         | +         | +        | -         | +         | -           | +         | -         |
| St30              | +        | +         | -         | +        | +         | +         | +        | +         | -         | -        | +         | -         | +           | +         | -         |
| St31              | +        | +         | +         | -        | +         | +         | +        | +         | +         | +        | +         | +         | -           | +         | -         |
| St32              | +        | +         | +         | +        | +         | +         | +        | +         | +         | -        | +         | +         | -           | +         | +         |
| Total             | 8        | 13        | 9         | 5        | 11        | 11        | 9        | 14        | 12        | 7        | 8         | 7         | 6           | 11        | 9         |

Table 21.

*Summary of the Learner Performance (C: Correct; W: Wrong; N: No Answer)*

| Words       | Tests     | Experimental Group |    |   | Control Group |    |   |
|-------------|-----------|--------------------|----|---|---------------|----|---|
|             |           | C                  | W  | N | C             | W  | N |
| Postpone    | Pre-      | 7                  | 8  | 1 | 4             | 11 | 1 |
|             | Post-     | 15                 | 1  | - | 9             | 7  | - |
|             | Retention | 13                 | 3  | - | 6             | 10 | - |
| Despise     | Pre-      | 7                  | 9  | - | 6             | 10 | - |
|             | Post-     | 12                 | 4  | - | 12            | 4  | - |
|             | Retention | 10                 | 6  | - | 10            | 6  | - |
| Alert       | Pre-      | 5                  | 8  | 3 | 6             | 10 | - |
|             | Post-     | 14                 | 2  | - | 15            | 1  | - |
|             | Retention | 13                 | 3  | - | 12            | 4  | - |
| Breezy      | Pre-      | 5                  | 11 | - | 4             | 10 | 2 |
|             | Post-     | 12                 | 4  | - | 9             | 5  | 2 |
|             | Retention | 13                 | 3  | - | 10            | 6  | - |
| Dread       | Pre-      | 3                  | 13 | - | 1             | 14 | 1 |
|             | Post-     | 11                 | 5  | - | 6             | 10 | - |
|             | Retention | 9                  | 4  | - | 7             | 6  | 3 |
| Vast        | Pre-      | 3                  | 12 | 1 | 8             | 8  | - |
|             | Post-     | 13                 | 3  | - | 13            | 3  | - |
|             | Retention | 8                  | 8  | - | 9             | 7  | - |
| Conflictual | Pre-      | 3                  | 10 | 3 | 6             | 8  | 2 |
|             | Post-     | 11                 | 4  | 1 | 11            | 5  | - |
|             | Retention | 9                  | 7  | - | 9             | 7  | - |
| Soften      | Pre-      | 5                  | 11 | - | 5             | 11 | - |
|             | Post-     | 13                 | 3  | - | 11            | 5  | - |
|             | Retention | 11                 | 5  | - | 11            | 5  | - |
| Gesture     | Pre-      | 8                  | 8  | - | 9             | 7  | - |
|             | Post-     | 15                 | 1  | - | 14            | 2  | - |
|             | Retention | 13                 | 3  | - | 12            | 4  | - |
| Evacuate    | Pre-      | 7                  | 9  | - | 7             | 9  | - |
|             | Post-     | 14                 | 2  | - | 8             | 8  | - |
|             | Retention | 10                 | 5  | 1 | 7             | 9  | - |

The tables above summarize how well the learners learned the target words. It can be seen that some learners knew the words in the pre-test but could not get the correct answer in the

immediate post-test. That may be because of the nature of the multiple choice tests. There is always the element of luck no matter how well the test is designed. On the other hand, some learners only got the answers right in the immediate post-test. This means that Kahoot! could not have an effect on the long-term retention of these learners. The same thing is true for the traditional method. By looking at the tables, one can say that the highest score belongs to the word *alert*. 25 learners got the right answer in the retention test. The most obvious difference between the groups is the score of the word *postpone*. The number of the learners who learned it in the experimental group doubles the number of the learners in the control group. The score of the word *despise* was the same for both groups. Other than that, vocabulary gain of the groups were similar to each other. However, the learners who knew the word all along were included in these results. If they are excluded from the vocabulary gains, then a better picture can be revealed for the study.

Table 22.

*The Actual Vocabulary Gain of the Groups*

| Words       | Experimental Group |                | Control Group |                |
|-------------|--------------------|----------------|---------------|----------------|
|             | Post-test          | Retention Test | Post-test     | Retention Test |
| Postpone    | 9                  | 6              | 6             | 2              |
| Despise     | 6                  | 2              | 7             | 3              |
| Alert       | 10                 | 8              | 10            | 7              |
| Breezy      | 8                  | 7              | 7             | 6              |
| Dread       | 10                 | 8              | 5             | 1              |
| Vast        | 11                 | 5              | 6             | 4              |
| Soften      | 8                  | 6              | 7             | 6              |
| Gesture     | 8                  | 5              | 5             | 3              |
| Evacuate    | 7                  | 3              | 3             | 1              |
| Conflictual | 8                  | 4              | 6             | 4              |
| Total       | 85                 | 54             | 62            | 37             |

When the learners who already knew the target words in the pre-test were subtracted from the post-test and the retention test, the results became clearer. These findings point to the capability of Kahoot! exercises. Likewise, the results of the traditional method are almost as good as Kahoot!'s. These results answer our first question: Is there a significant difference between Kahoot! exercises and conventional exercises in terms of their effects on vocabulary

retention? The answer is no. Based on the results, it can be said that both methods work almost equally well. However, Kahoot! works a little better than the other method. Meara (1996a, as cited in Schmitt, 2010) argues that receptive multiple choice tests only measure the recognition and form and meaning link of the vocabulary. Therefore, it is not advised to make generalizations about learning a word based on solely multiple choice tests. The results of this should not be generalized to vocabulary acquisition as it only deals with the receptive vocabulary knowledge.

### **Surveys**

In order to answer the second question of this study, a student satisfaction survey was implemented right after the immediate post-test. The survey consisted of 12 items. 15 learners participated in the survey. Three of them did not want to fill out the survey. The learners rated their agreement to the statements by assigning points from 1 to 5 (*1=strongly disagree* and *5=strongly agree*). The learners received the translated version of the survey in order to prevent any misunderstanding. Their responses were analysed by SPSS. The mean scores and the standard deviation of the statements were found. The results of this questionnaire were presented on the following page.



Table 23.

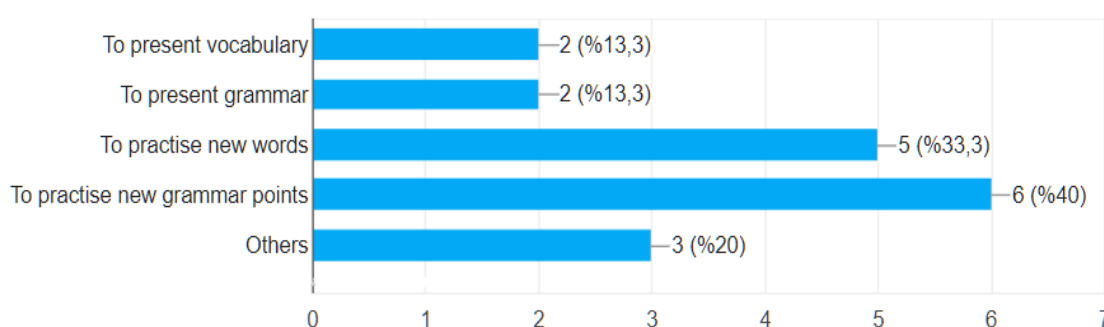
*Results of the Student Survey*

|                                                                            | N  | Mean | SD   |
|----------------------------------------------------------------------------|----|------|------|
| 1. I found Kahoot! easy to use.                                            | 15 | 4.33 | .81  |
| 2. Using Kahoot! helped me finish the task without getting distracted.     | 15 | 4.13 | .91  |
| 3. Using Kahoot! was fun.                                                  | 15 | 4.33 | .72  |
| 4. Using Kahoot! helped me learn new vocabulary.                           | 15 | 3.93 | .79  |
| 5. I would rather use technology to learn new words than paper and pencil. | 15 | 2.67 | 1.17 |
| 6. I would like to use Kahoot! in other classes to help me learn.          | 15 | 2.80 | .94  |
| 7. I felt prepared for tests after using Kahoot!.                          | 15 | 2.73 | 1.03 |
| 8. I looked forward to using Kahoot!.                                      | 15 | 3.27 | 1.16 |
| 9. I would like to tell other students about Kahoot!.                      | 15 | 3.93 | .96  |
| 10. Kahoot! increased my motivation.                                       | 15 | 3.93 | .96  |
| 11. Kahoot! helped me remember the new words.                              | 15 | 4.20 | .56  |
| 12. Kahoot! should be used to practice the new words in the lessons.       | 15 | 4.00 | .75  |

It can be concluded that the learners enjoyed playing with Kahoot! by looking at the mean score of the third item ( $M=4.33$ ). The learners also expressed that they learned vocabulary from Kahoot!. The mean score of the fourth statement confirms this ( $M=3.93$ ). The main focus of this study was vocabulary retention. The learners stated that they remembered the words better via Kahoot! in the eleventh statement ( $M=4.20$ ). The final statement's mean score ( $M=4.00$ ) reinforces the claims that the learners want to use Kahoot! to consolidate vocabulary. However, the learners have some doubts about using Kahoot! in other lessons. This may be because of the difficulty of the subjects in their major. They may perceive Kahoot! as a game for less serious subjects. Also, almost half of them state that they would

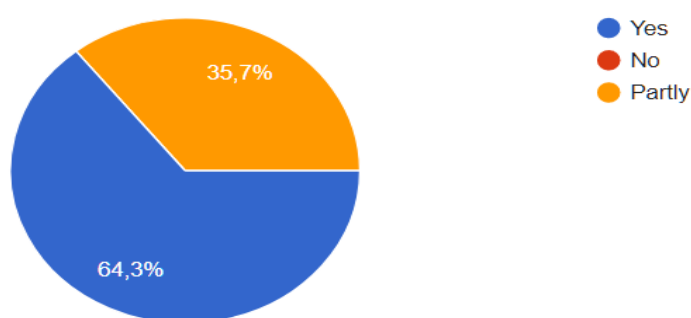
prefer pen-and-paper to Kahoot! to learn new words. This is a normal response considering that these learners almost never used technology to learn something throughout their education life. Therefore, they may be skeptical towards gamification.

The third question of this study dealt with the opinions of the EFL teachers. To answer this question, the teacher survey was sent to 15 EFL teachers via e-mail. This survey consisted of 17 items, 9 of which were open-ended questions. The quantitative results of the survey were presented by figures and charts. The qualitative part of the survey was commented on by the researcher.



*Figure 2.* For what purposes have you used Kahoot! in teaching English?

These results show that the majority of the teachers use Kahoot! to practice new grammar points. This could be due to the overemphasizing of the grammar in the courses. The second most common reason why Kahoot is used is practicing new words. Some teachers also expressed that they use Kahoot! to teach listening and some stated that they use it for general knowledge quizzes.



*Figure 3.* Do you think that Kahoot! is effective in terms of vocabulary teaching?

The ones who selected the option ‘Partly’ explained their reasons. One of them expressed that Kahoot! distracts the learners a little bit. It is an undesired outcome of gamification. Using a game-based platform should be done in a principled way. Otherwise, the learners may get the idea that the games are just for fun, which causes distraction. Another teacher stated that he/she cannot predict the effects of using Kahoot! in the long term. However, Wang (2014) conducted a study to observe the effects of Kahoot! on learning and classroom dynamics and found that the students were not demotivated or so. They claimed that they learned from Kahoot!.



Figure 4. How often do you use Kahoot! in your lessons?

By looking at these findings, it can be said that the majority of the teachers use Kahoot! frequently. A minority of them use it rarely. Some of them use it from time to time.

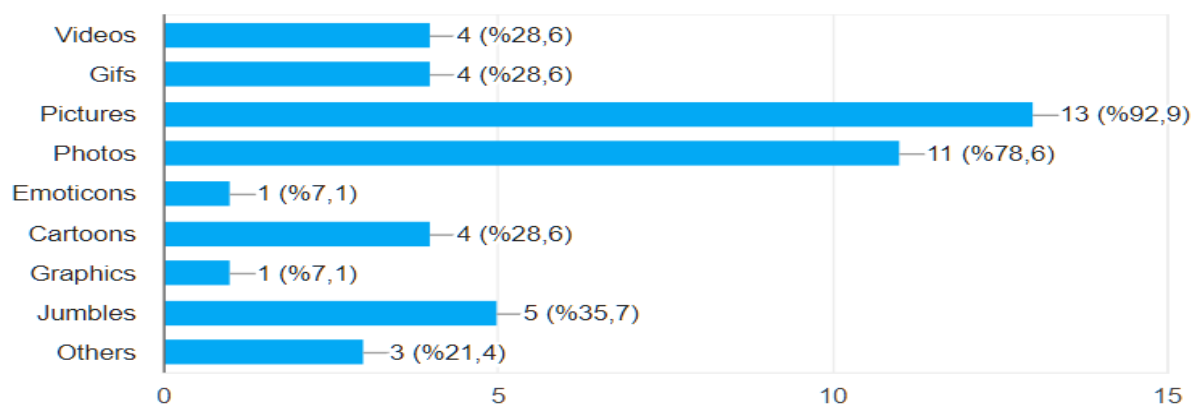


Figure 5. Which of the following do you use in Kahoot!?

The graph below indicates that the teachers make use of multimedia while preparing a Kahoot! quiz. Some of them also mentioned that they use questions with no visuals sometimes. They also wrote that they utilize the survey and the discussion mode of the game.

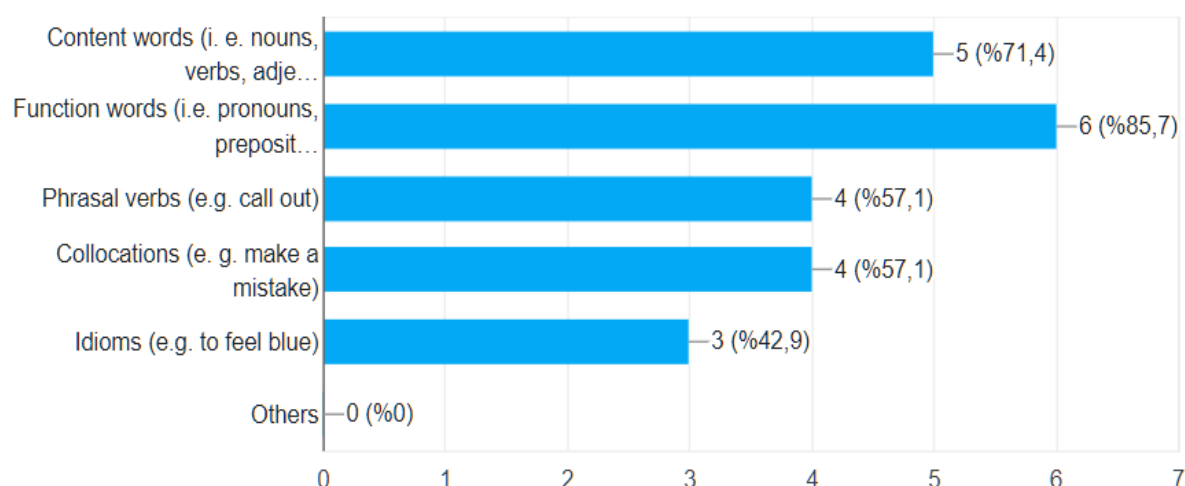


Figure 6. What type of words do/can you practice in Kahoot!?

The majority of the teachers teach or think that they can teach almost all kinds of words with Kahoot!. In this study, the target words were content words, but the teachers think that Kahoot! can be used in teaching other kinds of words as well. Idioms have a relatively lower score than the others. This may have resulted from the fact that idioms are not taught very often.

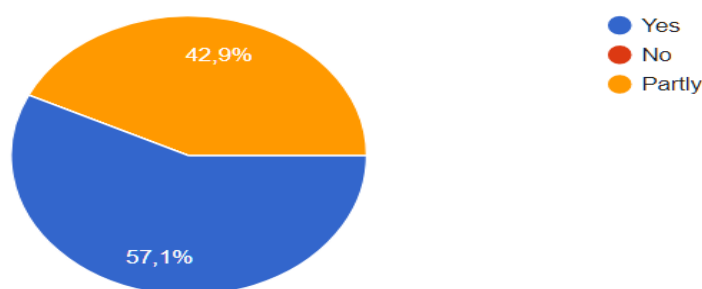


Figure 7. Do you think that Kahoot! can be effective in terms of vocabulary retention?

This question had an open-ended follow-up question. This question got the highest number of responses among the teachers. Some teachers simply stated that Kahoot! works. They also stated that Kahoot! creates a positive and fruitful atmosphere in the classroom. It is a motivating and interesting platform. They also stated that pictures and emotions the learners feel during competitions make learning more meaningful and it reinforces collaborative

learning. However, a few teachers thought the opposite. One of them stated that it only leads to competition rather than real learning sometimes. The pros and cons of applying a method should be contemplated by the teacher seriously. A method that works with a class may not work with another one. Every class is unique. However, the literature on gamification has proven that well-designed gamification works well in the classrooms. The teachers listed the advantages of Kahoot!:

1. The learners enjoy it.
2. It is an effective tool to review vocabulary at the end of the lesson.
3. It creates a positively competitive atmosphere in the classroom.
4. It increases the motivation of the learners.
5. It is an effective tool to practice vocabulary.
6. It increases engagement.

The advantages were ordered based on the frequency of the responses. These results are in alignment with this study and they also prove that both the learners and the teachers agree on the positive sides of Kahoot!. The teachers listed the disadvantages of Kahoot!:

1. It may not be applicable because it requires an Internet connection.
2. Some learners get demotivated when they cannot keep up with the rest of the class due to their slow Internet connection.
3. It may have a wearout effect on the learners.
4. It only increases the extrinsic motivation of the learners. It may harm their intrinsic motivation.
5. The teacher has to check the games in terms of spelling and grammar beforehand.
6. It is time-consuming.

Similarly, the disadvantages were ordered in terms of popularity. The most popular response was the Internet connection issue. These technical issues can really pose a challenge for the teacher. Kahoot! does not have to be in the center of the lesson, the teacher can use Kahoot! as a supplementary tool. In their study, Abrams and Walsh (2014) assert that online games can maximize their benefits when combined with traditional methods. The teachers also thought that Kahoot! may lose its effect if used in the long-term. It may not draw the attention

of the learners after some time. Wang's (2014) study investigated this issue and the results were the opposite of what the teachers worry about. One of the teachers response to the final question was more teachers should be informed about Kahoot!. How to use game-based platforms should be included in the pre- and in-service training programs.

## **Discussion**

The main aim of this study (Research Question 1) was to find out the effect of using Kahoot! and the traditional multiple-choice exercise on vocabulary retention of EFL learners. It was hypothesized that Kahoot! exercises would have a better effect on vocabulary retention of the learners compared to the traditional exercises. Although there was an obvious difference between the mean scores of the groups, this difference was not a significant one. The significance value of the retention test ( $Sig.=0.061$ ) indicated that the groups did not have statistically different results. However, the mean scores of the experimental group ( $\bar{X}=76.69$ ) were higher than the control group ( $\bar{X}=68.45$ ) in the retention test. Also, the total vocabulary gain of the experimental group was evidently higher than the control group. There are studies which have similar results to the present study. Pede (2017) found that using Kahoot! to consolidate vocabulary resulted in higher scores in the experimental group according to the results of the weekly vocabulary quizzes. Ciaramella (2017) also got similar results when she utilized Kahoot! to practice new words with seven sixth graders. Their results improved during treatment. It can be deduced that Kahoot! influenced the students' vocabulary retention positively.

Another aim of this study (Research Question 2) was to collect the ideas of the EFL learners opinions about Kahoot!. It was expected that the learners would give a positive feedback about the integration of an online game into the lesson. According to the findings of the student survey results, some conclusions can be drawn. To illustrate, the learners really enjoyed using Kahoot!. They also found it motivating and admitted to remembering words better with the help of Kahoot!. They thought that Kahoot! should be used to practice vocabulary. However, they were doubtful about using Kahoot! for other classes. They did not think that Kahoot! would be enough to study for their exams. It can be said that Kahoot! is not a studying tool to them. For them, it is a fun way to learn and practice words. Pede (2017) implemented the same survey and similarly, most of the learners expressed that Kahoot! was easy to use and it kept them on task. All of them found Kahoot! enjoyable and 92% of the learners wanted to use Kahoot! with other subjects unlike the learners in this

study. Also, 67% of his learners would rather use technology than traditional methods to study. The mean score of the same item in this study was 2.67 on 5, which means that the learners were not sure about using Kahoot! to study.

The final aim of this study (Research Question 3) was to investigate the opinions of EFL teachers towards gamifying vocabulary teaching. Similar to the learners, the teachers generally made positive comments about Kahoot!. Their responses to the questions demonstrated that they believed in the effectiveness of Kahoot!. However, some of them were sceptical about utilizing it very frequently. They also thought that the teachers should know more about these game-based online platforms. They should be a part of the lessons. Some other studies have similar findings to this research. In the following paragraph, our findings were discussed in relation to those of the previous studies.

Kılıçkaya and Krajka (2010) conducted a study to find out about the teachers' preferences about vocabulary teaching materials and tools. The results they obtained through a survey and a post-survey interview showed that the teachers adhered to traditional ways of vocabulary teaching as they did not have any formal pre- or in-service training on how to integrate technology into their lessons. This finding is in line with this study because some teachers expressed that more teachers should be trained in using game-based platforms. Bicen and Kocakoyun (2018) examined the student teachers' perceptions of gamification in their study and their results were similar to this study. The student teachers' answers, on the other hand, pointed out that Kahoot! made learning fun, that it motivated them, that the competitive feeling made them feel more active in the classroom, they had the feeling that they could achieve higher scores. They also reported the advantages of using Kahoot!. Some of its advantages were that it was fun and it brought about positive emotions like eagerness and willingness. It also caused an increase in student participation. The students expressed that they felt more active when they played Kahoot! due to the competition. On the other hand, most of them complained about the Internet connection problems. A minority of the students expressed their struggles with the time limitation. Lam (2014) also investigated the effects of using gamification with 101 freshman year EFL students to reinforce their vocabulary learning. At the end of the study, the learners' attitudes towards language learning changed for the better after using gamification. They also found online games fun and motivating.

Karatekin (2017) conducted a similar study to this study. His study group was 90 high school students. He investigated the effect of using Kahoot! on vocabulary learning. He collected the data through pre- and post-tests. The results had no significant difference between the tests, which is very much like the results of this present study. He also administered an attitude questionnaire at the end of the study. The students' attitudes towards gamification were positive and gamification made learning fun for them. Medina and Hurtado (2017) did a similar research on vocabulary learning by gamification in EFL learners. They conducted a quasi-experimental study to find out the effects. The participants were university students. The study adopted a pre-test/post-test/control-group design. The results demonstrated that the students in the experimental group increased their mean scores more than the ones in the control group like this study, a result which is again in line with the findings of our present study. The survey implemented at the end of the study had also similar results to ours. The students found the gamification process motivating and engaging.

Unlike our results, Aghlara and Tamjid (2011) found that using digital games led to a significant difference between the groups. They arrived at the conclusion that gamifying vocabulary instruction advanced vocabulary acquisition. Wang (2015) examined the long-term effects of Kahoot! on classroom dynamics and he states that educators might have concerns about using Kahoot! in the lessons considering that it might have a wear-out effect on the learners. In other words, the learners may lose their interest. However, the situation is just the opposite. According to Caldwell's (2007, as cited in Wang, 2015) findings, the students want the GSRS to be used in the classrooms, and the attendance increases when it is used. Moreover, Wang (2015) adds that the students preferred Kahoot! over other activities. In our study, the learners preferred traditional methods to study but modern methods to practice. Nahmod (2017) conducted a study with 50 children. She investigated the effects of Kahoot! on vocabulary learning of children. The learners were tested every week and it was observed that their scores increased and they were more engaged. Also she argues that there should be a balance between technology integration and traditional methods in the classrooms because technology can work best when it is integrated with other modalities. One method cannot be a panacea. A combination of different methods can result in better vocabulary learning. Kirriemuir and McFarlane (2004) state that the potential of games and game technologies need to be recognized by the public and stakeholders. Otherwise, they cannot be a part of formal education. According to the results of NRP (2000), computer-assisted vocabulary learning has proven to increase vocabulary gain more



than traditional methods. Computer technology has had a positive impact on vocabulary learning. Vocabulary instruction can be effective as long as engagement with the task is supplied. The findings can be generalised to Kahoot! as well. As Kahoot! requires a computer to be used in the classrooms. It can be accepted as computer technology.

Even though the research designs change from study to study, the studies reported above have a common theme. They investigated more or less the same things. The conclusion that can be drawn based on these studies is that gamification makes learning more meaningful, fun, and engaging.



## **CHAPTER 5**

### **CONCLUSION**

#### **Introduction**

In this chapter of the study, a summary of the study is provided. Also, implications of the study in the English language teaching are proposed. Finally, some suggestions for the researchers who are interested in conducting a similar research are put forward.

#### **Summary of the Study**

The main aim of this study was to identify the effect of Kahoot! on vocabulary retention of EFL learners. To determine the effect, two groups were selected by convenient sampling method from Gazi University Preparatory School. These groups were randomly assigned to the control group and the experimental group. The control group consisted of 20 individuals and the experimental group consisted of 18 individuals. These learners were studying at the Preparatory School of Gazi University. Their major was medicine. Their ages ranged between 18 and 20. A pre-test which was piloted with another group of learners beforehand was applied to both groups to select the target words. 10 words were chosen to be taught based on the unfamiliarity. The instruction was the same for both groups and the items in the consolidation activities were the same as well. However, the experimental group received the practice through Kahoot! exercises while the control group did the same activities through traditional pen and paper-based methods. An immediate post-test was applied to both groups to measure the effectiveness of the treatments right after the treatments. The results showed that both of the treatments worked equally well on the learners' vocabulary learning. Their scores increased evidently, which was an expected result. After the immediate post-test, a satisfaction survey was administered to have some ideas about the

learners' opinions about gamification. The results of that survey revealed that the learners enjoyed the process. They were willing to play Kahoot! again. They also expressed that Kahoot! helped them remember words easily. Three weeks after the experiment, a delayed post-test which was the same test as the pre-test, but with items in a different order was implemented to both groups to measure long-term vocabulary retention. The scores of some learners dropped while some of them increased. However, there was no statistical difference between the groups according to the findings of the independent-samples t-test. At the final step of the study, a survey which was developed by the researcher was utilized to collect the teachers' ideas about Kahoot!. In that survey, there were 9 open-ended and 8 multiple-choice questions. The answers to the open-ended questions were categorized and commented on by the researcher. The teachers thought that Kahoot! was a good tool to revise vocabulary. They confirmed that it increased motivation and engagement. However, some of them stated that Kahoot! could be used to have fun but it had no educational value as it only created a competitive atmosphere in the classroom. All in all, both the teachers and the learners admitted that Kahoot! is a useful tool to use in the lessons.

### **Implications of the Study**

This study carries considerable implications for teachers, teacher trainers, curriculum designers, and material writers.

First of all, the changes start with the teachers. A single method cannot solve all of their problems, but integrating technology into their lessons can ease their burden. While planning and teaching their lessons, they should keep up with the latest trends in teaching to cater to the needs of their learners. The new generation is tech-savvy, and the previous literature has proved that gamification can offer great opportunities to the teachers. It can liven up their lessons and boost interaction and engagement.

Teacher trainers should provide pre- and in-service training for the teacher trainees and teachers. The results of many previous studies clearly demonstrate that the teachers either do not know how to integrate technology into their programs or do not have the equipment to do that. Teacher training programs can include more ICT courses.

Curriculum and material writers can design curricula and syllabi that incorporate ICT effectively. Developing as a country necessitates educating the youth and making them

digital literates. The material writers should make use of multimedia to include more activities for different learning styles.

Finally, the results of this study on comparing two methods in terms of vocabulary retention will hopefully illuminate the path for further research.

### **Suggestions for Further Research**

This study has some limitations. First of all, it is limited to 32 students only. Further studies could be done with larger groups of people for the sake of generalisability. Also, in this study, only content words (i.e. nouns, verbs, adjectives, and adverbs) were selected to be taught. Other vocabulary items were not included in this study. Further research can be tried with different word types. The target words were small in number as well. In this study, only receptive vocabulary gain was assessed through multiple-choice tests. However, further research can measure the productive vocabulary learning of the learners. The researchers who are interested in gamifying language learning can measure Kahoot!’s effectiveness in other language areas such as grammar and the four skills.

This study was completed in five weeks. Further research can be conducted to see the long-term effects of Kahoot! on vocabulary retention. Another game-based platform can be compared with Kahoot! in terms of motivation, retention, interaction, engagement, or acquisition. The researchers can carry out the research with a large amount of vocabulary. Technically, these kinds of studies work well within the classes with an Internet connection. The learners need to have technological devices to participate in the study. These things should be kept in mind before conducting a study like this. Gamification is a developing research area, so there are numerous ways to replicate this study.

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## APPENDICES



## APPENDIX 1. Pre-Test (Pilot Study)

Name:

Surname:

### Part A (1-11)

Read the items below and circle the best option that has a similar meaning to the word written in **boldface**.

1. There was a **fuss** in the town due to the war.
  - A) careful organization
  - B) calm activity
  - C) anxious activity
  - D) reckless organization
  
2. The manager had to fire some of the employees due to the financial crisis, but he kept **putting off** that decision because he loved each one of his workers.
  - A) analysing
  - B) postponing
  - C) undertaking
  - D) cancelling
  
3. She is an arrogant person. She **looks down on** other people all the time.
  - A) despises
  - B) assesses
  - C) fears
  - D) insists

4. The murder was a complete mystery. The police **inspected** the crime scene thoroughly, and yet they had not found a clue.

- A) compared
- B) examined
- C) evacuated
- D) committed

5. **Larry:** I need to take a vacation immediately. I am feeling down lately. Taking a break would do wonders.

**Tom:** I recommend you go and see the Maldives. When you go there, I swear, you are going to feel **breezy** again.

- A) lively and relaxed
- B) sound and safe
- C) careless
- D) lifeless

6. Despite the overwhelming workload, they were still feeling **wide awake** because of their motivation.

- A) grumpy
- B) alert
- C) ambitious
- D) better

7. Unfortunately, there are far more **severe** punishments than capital punishment.

- A) harsh
- B) soft
- C) witless
- D) tense



8. She has strict **moral values**, and she sticks to them at all costs.
- A) principles
  - B) knowledge
  - C) behaviour
  - D) cognition
9. If you need to do teamwork at your workplace, you should have good relations with your **fellow workers**.
- A) colleagues
  - B) spouses
  - C) performers
  - D) opponents
10. She is a night owl. The idea of working in the morning **terrifies** her.
- A) warns
  - B) dreads
  - C) disturbs
  - D) concerns
11. His mission was to **watch** the enemies and report any activity he saw.
- A) argue
  - B) persuade
  - C) observe
  - D) decide

**Part B (12-18)**

Read the texts below and answer the questions accordingly.

12. Climate change has been a confrontational matter among the scholars. The disagreements have not settled for a long time.

According to the passage, which word describes the matter reported in the text above?

- A) collaborative
- B) sophisticated
- C) conflictual
- D) ambiguous

13. **Daniel:** The boss is very irritable today. Try not to annoy him.

**Sophie:** I know! I think he must have got up on the wrong side of the bed, or he'd had a terrible night.

According to the dialogue above, how does the boss feel?

- A) cheerful
- B) jealous
- C) snoopy
- D) groggy

14. This system achieves maximum productivity with minimum wasted effort.

Which word describes this system best?

- A) extravagant
- B) efficient
- C) effortless
- D) relevant

15. **Lily:** What an awful smell! I think I am going to throw up.

**Bethy:** It certainly is!

According to the dialogue above, how do they feel?

- A) embarrassed
- B) disgusted
- C) concerned
- D) anxious

16. It is essential to work together to fulfil a task and realize the common goals in a classroom.

According to the sentence above, what kind of a work is needed in a classroom?

- A) competitive
- B) prohibitive
- C) collaborative
- D) stimulating

17. Scarlett's husband is committed to their marriage. He would never cheat on her.

Which of the words below describes Scarlett's husband?

- A) unreliable
- B) helpful
- C) deceptive
- D) faithful

18. He is very tactful and subtle while resolving conflicts. He manages the situations and relationships skilfully.

Which of the words below best describes him?

- A) diplomatic
- B) important
- C) generous
- D) extroverted

**Part C (19-30)**

Read the texts below and circle the word that completes the sentence best.

19. This house has an amazing view. There is a/an \_\_\_\_\_ plain full of gardens in front of the house. It seems endless.

- A) tiny
- B) bright
- C) vast
- D) mild

20. I cannot stand her voice. I \_\_\_\_\_ whenever she talks.

- A) get curious
- B) sneeze
- C) get excited
- D) cringe

21. You should boil the potatoes until they are \_\_\_\_\_, then mash them.

- A) chilled
- B) roasted
- C) softened
- D) seasoned

22. The Prime Minister's statements were very bold and confident. She is such a/an \_\_\_\_\_ person that she gets what she wants in the end.

- A) original
- B) experienced
- C) assertive
- D) motivated

23. Good speakers know how to use their voice and \_\_\_\_\_ well.

- A) gestures
- B) anxiety
- C) audience
- D) income

24. The candidates took a test, and then an interview was conducted with each one of them. The school has a difficult \_\_\_\_\_ method.

- A) solution
- B) raffle
- C) criticism
- D) assessment

25. Most of the regions in the country have been flooded. The people are being \_\_\_\_\_ .

- A) prohibited
- B) evacuated
- C) rejected
- D) prevented

26. This is a challenging problem, and it requires an intricate \_\_\_\_\_ .

- A) pattern
- B) design
- C) solution
- D) structure

27. This tribe has bizarre and unusual traditions and \_\_\_\_\_. They have been following them for centuries.

- E) animals
- F) customs
- G) houses
- H) vehicles

28. **Customer:** Hi! I would like a refund for this product.

**Salesperson:** Alright! I need to see the \_\_\_\_\_ first.

- A) money
- B) customer
- C) trolley
- D) receipt

29. **Jack:** Choose your friends wisely because loyalty is a rare quality.

**Sam:** You're absolutely right. I once found out about my friend's disloyalty, and that broke my heart.

According to the dialogue, that friend could have \_\_\_\_\_ Sam.

- A) betrayed
- B) refused
- C) persuaded
- D) judged

30. In some religions, people sacrifice animals as part of a \_\_\_\_\_.

- A) quarrel
- B) ritual
- C) cost
- D) recipe

## APPENDIX 2. Revised Pre-Test

Name:

Surname:

### Part A (1-11)

Read the items below and circle the best option that has a similar meaning to the word written in **boldface**.

1. There was a **fuss** in the town due to the war.  
  
A) careful organization  
B) calm activity  
C) anxious activity  
D) reckless organization
  
2. The manager had to fire some of the employees due to the financial crisis, but he kept **putting off** that decision because he loved each one of his workers.  
  
A) analysing  
B) postponing  
C) acclaiming  
D) cancelling
  
3. She is an arrogant person. She **looks down on** other people all the time.  
  
A) surprises  
B) despises  
C) suspects  
D) insists

4. The murder was a complete mystery. The police **inspected** the crime scene thoroughly, and yet they had not found a clue.

- A) compared
- B) examined
- C) evacuated
- D) committed

5. **Larry:** I need to take a vacation immediately. I am feeling down lately. Taking a break would do wonders.

**Tom:** I recommend you go and see the Maldives. When you go there, I swear, you are going to feel **lively and relaxed** again.

- A) queasy
- B) reckless
- C) breezy
- D) careless

6. Despite the overwhelming workload, they were still feeling **wide awake** because of their motivation.

- A) grumpy
- B) alert
- C) ambitious
- D) jolly

7. Unfortunately, there are much more **severe** punishments than capital punishment.

- A) harsh
- B) soft
- C) witless
- D) humane



8. She has strict **moral values**, and she sticks to them at all costs.

- A) manners
- B) principles
- C) behaviours
- D) methods

9. If you need to do teamwork at your workplace, you should have good relations with your **fellow workers**.

- A) colleagues
- B) coordinators
- C) performers
- D) candidates

10. She is a night owl. The idea of working in the morning **terrifies** her.

- A) annoys
- B) dreads
- C) disturbs
- D) worries

11. His mission was to **watch** the enemies and report any activity he saw.

- A) shoot
- B) persuade
- C) observe
- D) frighten

12. This house has an amazing view. There is a plain full of gardens in front of the house. It seems **endless**.

- A) famous
- B) bright
- C) vast
- D) bare

**Part B (12-18)**

Read the texts below and answer the questions accordingly.

13. Climate change has been a confrontational matter among the scholars. The disagreements have not settled for a long time.

According to the passage, which word describes the matter reported in the text above?

- A) collaborative
- B) sophisticated
- C) conflictual
- D) transparent

14. **Daniel:** The boss is very irritable today. Try not to annoy him.

**Sophie:** I know! I think he must have got up on the wrong side of the bed, or he'd had a terrible night.

According to the dialogue above, how does the boss feel?

- A) diseased
- B) ashamed
- C) snoop
- D) groggy

15. This system achieves maximum productivity with minimum wasted effort.

Which word describes this system best?

- A) extravagant
- B) efficient
- C) effortless
- D) ineffective

16. **Lily:** What an awful smell! I think I am going to throw up.

**Bethy:** It certainly is!

According to the dialogue above, how do they feel?

- A) frightened
- B) disgusted
- C) distracted
- D) disoriented

17. It is essential to work together to fulfil a task and realize the common goals in a classroom.

According to the sentence above, what kind of a work is needed in a classroom?

- A) competitive
- B) inhospitable
- C) collaborative
- D) ambitious

18. Scarlett's husband is committed to their marriage. He would never cheat on her.

Which of the words below describes Scarlett's husband?

- A) unreliable
- B) affectionate
- C) deceptive
- D) faithful

19. He is very tactful and subtle while resolving conflicts. He manages the situations and relationships skilfully.

Which of the words below best describes him?

- A) diplomatic
- B) charming
- C) intelligent
- D) introverted

**Part C (19-30)**

Read the texts below and circle the word that completes the sentence best.

20. I cannot stand her voice. I \_\_\_\_\_ whenever she talks.

- A) get curious
- B) sneeze
- C) keep calm
- D) cringe

21. You should boil the potatoes until they are \_\_\_\_\_, then mash them.

- A) sprinkled
- B) roasted
- C) softened
- D) scrambled

22. The Prime Minister's statements were very bold and confident. She is such a/an \_\_\_\_\_ person that she gets what she wants in the end.

- A) offensive
- B) experienced
- C) assertive
- D) motivated

23. A good speaker knows how to use his/her voice and \_\_\_\_\_ well. They are important in conveying the message effectively.

- A) gesture
- B) passion
- C) audience
- D) motivation

24. The candidates took a test, and then an interview was conducted with each one of them. The school has a difficult \_\_\_\_\_ method.

- A) solution
- B) punishment
- C) criticism
- D) assessment

25. Most of the regions in the country have been flooded. The people are being \_\_\_\_\_ .

- A) prohibited
- B) evacuated
- C) rejected
- D) prevented

26. This is a challenging problem, and it requires an intricate \_\_\_\_\_ .

- A) pattern
- B) design
- C) solution
- D) structure

27. This tribe has a bizarre and unusual traditions and \_\_\_\_\_. The most eccentric one is their wedding ceremony.

- A) clothes
- B) customs
- C) cuisines
- D) vehicles

28. **Customer:** Hi! I would like a refund for this product.

**Salesperson:** Alright! I need to see the \_\_\_\_\_ first.

- A) money
- B) barcode
- C) trolley
- D) receipt

29. **Jack:** Choose your friends wisely because loyalty is a rare quality.

**Sam:** You're absolutely right. I once found out about my friend's disloyalty, and that broke my heart.

According to the dialogue, that friend could have \_\_\_\_\_ Sam.

- A) betrayed
- B) refused
- C) approved
- D) ridiculed

30. In some religions, people sacrifice animals as part of a \_\_\_\_\_ .

- A) technique
- B) ritual
- C) lesson
- D) method

### APPENDIX 3. Vocabulary Exercises (Control Group)

1. The chef boiled the potatoes for 30 minutes until they were \_\_\_\_\_. Then he mashed them.

A) squeezed                      B) melted  
C) softened                      D) grilled



2. I sometimes have very rude guests in my show. They make me \_\_\_\_\_ whenever they start talking.

A) cringe                      B) cough  
C) move                      D) start



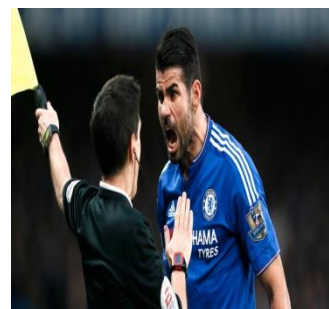
3. She keeps talking without even breathing. It is hard to \_\_\_\_\_ when she starts talking.

A) deceive                      B) laugh  
C) appear                      D) interfere



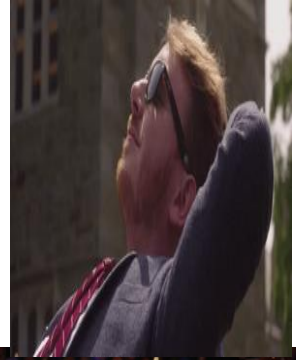
4. The players had arguments with the referee because of his decisions. It was a/an \_\_\_\_\_ match.

A) conflictual                      B) orderly  
C) sportsmanlike                      D) respectful



5. He used to be so tense and nervous, but he felt \_\_\_\_\_ after his long vacation.

A) restless                      B) blue  
C) breezy                      D) alarmed



6. He did his best to \_\_\_\_\_ the jury. The jury and the spectators admired his talent.

A) insult                      B) demonstrate  
C) impress                      D) assess



7. After months of hard work and working overtime, the professor finally got the \_\_\_\_\_ she had been waiting for. She became the head of the department.

A) promotion                      B) diploma  
C) rejection                      D) course



8. The child \_\_\_\_\_ the idea of monsters hiding under his bed.

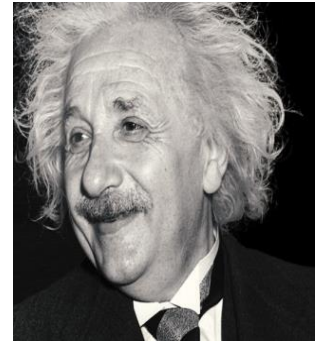
A) left                      B) included  
C) supported                      D) dreaded





9. Einstein's relativity theory \_\_\_\_\_ the physics, and it had a great impact on the studies back then.

A) revolutionised      B) harmed  
C) compelled          D) adapted



10. The government \_\_\_\_\_ the town due to a possible bombing incident.

A) rebuilt                  B) evacuated  
C) developed            D) pursued



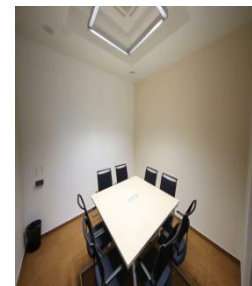
11. He is such a/an \_\_\_\_\_ person that he finds his way to get things done. It is always his way or the highway.

A) submissive          B) dangerous  
C) assertive            D) tolerant



12. We \_\_\_\_\_ the meeting until next week because the boss could not attend it.

A) postponed          B) declared  
C) transformed        D) decided



13. In some countries, young people have to perform a/an \_\_\_\_\_ to become an adult. For example, a girl may be asked to shave her hair off.

- A) class
- B) ritual
- C) operation
- D) experiment



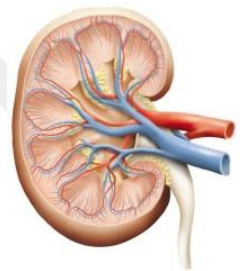
14. The girl who lost the competition looked at the winners with a/an \_\_\_\_\_ look.

- A) loving
- B) curious
- C) despising
- D) dull



15. With age, our kidneys become less \_\_\_\_\_ in removing waste from your bloodstream. They may not function properly.

- A) significant
- B) interested
- C) involved
- D) efficient



16. I have to stay \_\_\_\_\_ for a long time because I am pulling an all-nighter. That's why I need lots of energy drinks. I must not fall asleep.

- A) ambitious
- B) alert
- C) restless
- D) vicious



17. I cannot get along well with my \_\_\_\_\_, so I am thinking of changing my workplace from time to time.

- A) performers                      B) relatives
- C) opponents                    D) colleagues



18. He was so tall that there was a \_\_\_\_\_ difference in their height.

- A) vast                                B) small
- C) sufficient                        D) average



19. His body language and facial \_\_\_\_\_ suggested he did not love his wife at all.

- A) injuries                            B) wrinkles
- C) gestures                           D) deformity



20. Fire investigators will \_\_\_\_\_ the building thoroughly to determine how the fire started.

- A) occupy                            B) examine
- C) warn                                D) construct



#### APPENDIX 4. Kahoot! Exercises (Experimental Group)

##### Questions (10)

Show answers

**Q1:** The chef boiled the potatoes for 30 minutes until they were \_\_\_\_\_. Then he mashed them.



**Q2:** I sometimes have very rude guests in my show. They make me \_\_\_\_\_ whenever they start talking.



**Q3:** She keeps talking without even breathing. It is hard to \_\_\_\_\_ when she starts talking.



**Q4:** The players had arguments with the referee because of his decisions. It was a/an \_\_\_\_\_ match.



**Q5:** He used to be so tense and nervous, but he felt \_\_\_\_\_ after his long vacation.



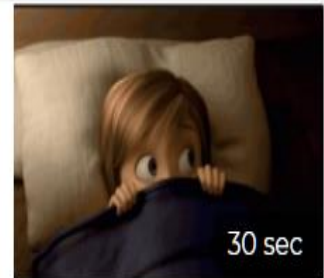
**Q6:** He did his best to \_\_\_\_ the jury. The jury and the spectators admired his talent.



**Q7:** After months of hard work, she finally got the \_\_\_\_ she had been waiting for.



**Q8:** The child \_\_\_\_ the idea of monsters hiding under his bed.



**Q9:** Einstein's relativity theory \_\_\_\_ the physics, and it had a great impact on the studies.



**Q10:** The government \_\_\_\_ the town due to a possible bombing incident.





**Q1:** He is such a/an \_\_\_\_ person that he always finds his way to get what he wants.



**Q2:** We \_\_\_\_ the meeting until next week because the boss could not attend it.



**Q3:** In some countries, young people have to perform a/an \_\_\_\_ to become an adult.



**Q4:** The girl who lost the competition looked at the winners with a/an \_\_\_\_ look .



**Q5:** With age, our kidneys become less \_\_\_\_ in removing waste from your bloodstream.



**Q6:** I have to stay \_\_\_\_ for a long time because I am pulling an all-nighter.



**Q7:** I cannot get along well with my \_\_\_\_, so I am thinking of changing my workplace sometimes.



**Q8:** He was so tall that there was a \_\_\_\_ difference in their height.



**Q9:** His body language and facial \_\_\_\_ suggested he did not love his wife at all.



**Q10:** Fire investigators will \_\_\_\_ the building thoroughly to determine how the fire started.



## APPENDIX 5. Immediate Post-Test

Name:

Surname:

Read the statements below and circle the best option that completes the blank.

1. The hurricane is the deadliest disaster the country has faced so far. The toll rises, and the folks living there are being \_\_\_\_\_ as it is no longer safe to live there.

A) stranded  
B) evacuated  
C) frightened  
D) comforted

2. My roommate and I are completely different people. I am a night owl whereas she is a/an \_\_\_\_\_ .

A) hippie  
B) lark  
C) host  
D) punk

3. I could not sleep well last night because of my horrible neighbours who kept making noises all night long. I am \_\_\_\_\_ right now. I cannot keep my eyes open.

A) sloppy  
B) gloomy  
C) shabby  
D) groggy



4. She felt \_\_\_\_\_ because of the news. She was on cloud nine.
- A) furious
  - B) puzzled
  - C) cheerful
  - D) miserable
5. The police have been investigating the crime scene. They have already questioned the \_\_\_\_\_ and thanked them for their help. They have asked them to describe everything they saw.
- A) suspects
  - B) witnesses
  - C) murderers
  - D) criminals
6. There was a storm coming up, so the game was \_\_\_\_\_ until next week.
- A) abolished
  - B) maintained
  - C) postponed
  - D) considered
7. Mrs. Angel was a brave woman. She \_\_\_\_\_ her children to speak their mind fearlessly.
- A) threatened
  - B) encouraged
  - C) disheartened
  - D) complimented

8. The ocean is so \_\_\_\_\_ that everything else seems so little compared to it.
- A) diverse
  - B) vast
  - C) dull
  - D) nice
9. He is extremely afraid of his mother-in-law. He avoids her at all costs. He \_\_\_\_\_ seeing her.
- A) dreads
  - B) prefers
  - C) suggests
  - D) fancies
10. The couple went on a vacation to take a break from everything. When they came back, they looked \_\_\_\_\_. They were rested. Their minds were clear.
- A) cheeky
  - B) sleepy
  - C) breezy
  - D) hasty
11. When the water is hot, add the pepper and onion and cook, stirring, until the vegetables are \_\_\_\_\_, about 8 minutes.
- A) hardened
  - B) roasted
  - C) scrambled
  - D) softened
12. The odds are very low at winning the \_\_\_\_\_. I think investing your money in it makes no sense.
- A) lottery
  - B) potluck
  - C) treatment
  - D) penalty

13. He is a snob. He thinks he is better than everybody. He \_\_\_\_\_ other people.

- A) refuses
- B) distracts
- C) despises
- D) accuses

14. The suspect did not admit to \_\_\_\_\_ the crime. He rejected the accusations.

- A) neglecting
- B) committing
- C) witnessing
- D) observing

15. **Customer:** Is it possible to return a product without the \_\_\_\_\_? I think I lost mine.

**Cashier:** No, sir. It is not.

- A) cheque
- B) receipt
- C) barcode
- D) trolley

16. Some tribes stick to their bizarre \_\_\_\_\_. They have not changed them for centuries.  
For example, they paint their faces when they become adults.

- A) clothings
- B) religions
- C) customs
- D) cuisines

17. **Sam:** I failed the class again. I guess I am just stupid. My parents are going to be so mad at me.

**Ted:** Don't be too \_\_\_\_\_ on yourself! You tried to do your best.

- A) keen
- B) harsh
- C) based
- D) soft

18. Caffeine is a great energy booster. If you need to be \_\_\_\_\_ all night, coffee can be your best friend.

- A) busy
- B) alert
- C) weary
- D) inactive

19. She uses the language very carefully while addressing a crowd. She also uses her body language and \_\_\_\_\_ skilfully. These moves have a great influence on the people who watch her.

- A) politics
- B) knowledge
- C) business
- D) gestures

20. They have a/an \_\_\_\_\_ relationship. They can usually fight about anything. They rarely agree on something.

- A) collaborative
- B) conflictual
- C) accepting
- D) devoted

## APPENDIX 6. Delayed Post-Test (Retention Test)

Name:

Surname:

### Part A (1-11)

Read the texts below and circle the word that completes the sentence best.

1. You should boil the potatoes until they are \_\_\_\_\_, then mash them.
  - A) scrambled
  - B) roasted
  - C) softened
  - D) sprinkled
  
2. The Prime Minister's statements were very bold and confident. She is such a/an\_\_\_\_\_ person that she gets what she wants in the end.
  - A) offensive
  - B) motivated
  - C) assertive
  - D) experienced

3. This is a challenging problem, and it requires an intricate \_\_\_\_ .
- A) structure
  - B) solution
  - C) design
  - D) pattern
4. A good speaker knows how to use his/her voice and \_\_\_\_ well. They are important in conveying the message effectively.
- A) motivation
  - B) audience
  - C) passion
  - D) gesture
5. The candidates took a test, and then an interview was conducted with each one of them. The school has a difficult \_\_\_\_ method.
- A) assessment
  - B) punishment
  - C) criticism
  - D) solution

6. Most of the regions in the country have been flooded. The people are being \_\_\_\_\_ .

A) prevented

B) rejected

C) evacuated

D) prohibited

7. **Customer:** Hi! I would like a refund for this product.

**Salesperson:** Alright! I need to see the \_\_\_\_\_ first.

A) trolley

B) receipt

C) money

D) barcode

8. This tribe has a bizarre and unusual traditions and \_\_\_\_\_. The most eccentric one is their wedding ceremony.

A) vehicles

B) customs

C) clothes

D) cuisines

9. **Jack:** Choose your friends wisely because loyalty is a rare quality.

**Sam:** You're absolutely right. I once found out about my friend's disloyalty, and that broke my heart.

According to the dialogue, that friend could have \_\_\_\_\_ Sam.

A) ridiculed

B) refused

C) approved

D) betrayed

10. In some religions, people sacrifice animals as part of a \_\_\_\_\_ .

A) lesson

B) ritual

C) technique

D) method

11. I cannot stand her voice. I \_\_\_\_\_ whenever she talks.

A) sneeze

B) get curious

C) cringe

D) keep calm



**Part B (12-18)**

Read the texts below and answer the questions accordingly.

12. He is very tactful and subtle while resolving conflicts. He manages the situations and relationships skilfully.

Which of the words below best describes him?

- A) introverted
- B) charming
- C) intelligent
- D) diplomatic

13. Climate change has been a confrontational matter among the scholars. The disagreements have not settled for a long time.

According to the passage, which word describes the matter reported in the text above?

- A) transparent
- B) collaborative
- C) conflictual
- D) sophisticated

14. **Daniel:** The boss is very irritable today. Try not to annoy him.

**Sophie:** I know! I think he must have got up on the wrong side of the bed, or he'd had a terrible night.

According to the dialogue above, how does the boss feel?

- A) snooty
- B) groggy
- C) diseased
- D) ashamed

15. **Lily:** What an awful smell! I think I am going to throw up.

**Bethy:** It certainly is!

According to the dialogue above, how do they feel?

- A) frightened
- B) disoriented
- C) distracted
- D) disgusted

16. It is essential to work together to fulfil a task and realize the common goals in a classroom.

According to the sentence above, what kind of a work is needed in a classroom?

- A) competitive
- B) ambitious
- C) collaborative
- D) inhospitable

17. Scarlett's husband is committed to their marriage. He would never cheat on her.

Which of the words below describes Scarlett's husband?

- A) affectionate
- B) faithful
- C) deceptive
- D) unreliable

18. This system achieves maximum productivity with minimum wasted effort.

Which word describes this system best?

- A) effortless
- B) efficient
- C) extravagant
- D) ineffective

**Part C (19-30)**

Read the items below and circle the best option that has a similar meaning to the word written in **boldface**.

19. There was a **fuss** in the town due to the war.

- A) reckless organization
- B) calm activity
- C) careful organization
- D) anxious activity

20. She is an arrogant person. She **looks down on** other people all the time.

- A) insists
- B) surprises
- C) suspects
- D) despises

21. **Larry:** I need to take a vacation immediately. I am feeling down lately. Taking a break would do wonders.

**Tom:** I recommend you go and see the Maldives. When you go there, I swear, you are going to feel **lively and relaxed** again.

A) careless

B) queasy

C) reckless

D) breezy

22. The manager had to fire some of the employees due to the financial crisis, but he kept **putting off** that decision because he loved each one of his workers.

A) cancelling

B) postponing

C) acclaiming

D) analysing

23. She has strict **moral values**, and she sticks to them at all costs.

A) methods

B) behaviours

C) principles

D) manners

24. Despite the overwhelming workload, they were still feeling **wide awake** because of their motivation.

A) jolly

B) grumpy

C) alert

D) ambitious

25. Unfortunately, there are far more **severe** punishments than capital punishment.

A) witless

B) humane

C) harsh

D) soft

26. The murder was a complete mystery. The police **inspected** the crime scene thoroughly, and yet they had not found a clue.

A) examined

B) compared

C) evacuated

D) committed

27. If you need to do teamwork at your workplace, you should have good relations with your **fellow workers**.

- A) performers
- B) colleagues
- C) candidates
- D) coordinators

28. She is a night owl. The idea of working in the morning **terrifies** her.

- A) worries
- B) dreads
- C) annoys
- D) disturbs

29. His mission was to **watch** the enemies and report any activity he saw.

- A) frighten
- B) observe
- C) shoot
- D) persuade

30. This house has an amazing view. There is a plain full of gardens in front of the house.  
It seems **endless**.

- A) bare
- B) vast
- C) bright
- D) famous





## APPENDIX 7. Student Survey (Original Version)

| Statements                                                                 | Strongly<br>Agree | Agree | Undecided | Disagree | Strongly<br>Disagree |
|----------------------------------------------------------------------------|-------------------|-------|-----------|----------|----------------------|
|                                                                            | 5                 | 4     | 3         | 2        | 1                    |
| 1. I found Kahoot! easy to use.                                            |                   |       |           |          |                      |
| 2. Using Kahoot! helped me finish the task without getting distracted.     |                   |       |           |          |                      |
| 3. Using Kahoot! was fun.                                                  |                   |       |           |          |                      |
| 4. Using Kahoot! helped me learn new vocabulary.                           |                   |       |           |          |                      |
| 5. I would rather use technology to learn new words than paper and pencil. |                   |       |           |          |                      |
| 6. I would like to use Kahoot! in other classes to help me learn.          |                   |       |           |          |                      |
| 7. I felt prepared for tests after using Kahoot!.                          |                   |       |           |          |                      |
| 8. I looked forward to using Kahoot!.                                      |                   |       |           |          |                      |
| 9. I would like to tell other students about Kahoot!.                      |                   |       |           |          |                      |
| 10. Kahoot! increased my motivation.                                       |                   |       |           |          |                      |
| 11. Kahoot! helped me remember the new words.                              |                   |       |           |          |                      |
| 12. Kahoot! should be used to practise the new words in the lessons.       |                   |       |           |          |                      |

## APPENDIX 8. Student Survey (Turkish Version)

|                                                                                                                                                                                                                                                                                                      |                         |              |            |             |                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|--------------|------------|-------------|------------------------|
| <p>*Değerli katılımcı, bu ankete katılım gönüllülük esasına dayanmaktadır. Bu anket Kahoot! uygulamasıyla ilgili görüş almak için yapılmaktadır. Bilgileriniz tamamen gizli kalacaktır. Katıldığınız için teşekkür ederiz.</p> <p>*Aşağıdaki ifadelere katılma derecenize göre bir puan veriniz.</p> | Kesinlikle Katılmıyorum | Katılmıyorum | Kararsızım | Katılıyorum | Kesinlikle Katılıyorum |
|                                                                                                                                                                                                                                                                                                      | 1                       | 2            | 3          | 4           | 5                      |
| 1. Kahoot!'u kullanmayı kolay buldum.                                                                                                                                                                                                                                                                |                         |              |            |             |                        |
| 2. Kahoot!'u kullanmak dikkatim dağılmadan görevi bitirmeme yardım etti.                                                                                                                                                                                                                             |                         |              |            |             |                        |
| 3. Kahoot!'u kullanmak eğlenceliydi.                                                                                                                                                                                                                                                                 |                         |              |            |             |                        |
| 4. Kahoot!'u kullanmak yeni kelimeleri öğrenmeme yardım etti.                                                                                                                                                                                                                                        |                         |              |            |             |                        |
| 5. Yeni kelimeler öğrenmek için kağıt kalemde çok teknolojiyi kullanmayı yeğlerim.                                                                                                                                                                                                                   |                         |              |            |             |                        |

---

6. Öğrenmeme  
yardımcı olsun diye  
Kahoot!'u diğer  
derslerde de  
kullanırım.

---

7. Kahoot!'u  
kullandıktan sonra  
sınavlara kendimi  
hazır hissettim.

---

8. Kahoot!'u  
kullanmayı dört  
gözle bekledim.

---

9. Diğer öğrencilere  
Kahoot!'tan  
bahsetmek isterim.

---

10. Kahoot!  
motivasyonumu  
arttırdı.

---

11. Kahoot! yeni  
kelimeleri  
hatırlamamda bana  
yardımcı oldu.

---

12. Kahoot! derslerde  
yeni kelimeleri  
pratik etmede  
kullanılmalı.

---



## APPENDIX 9. Teacher Survey

# Effectiveness of Kahoot! in terms of Vocabulary Teaching

Dear participant, we are conducting a research to gain some insights about the effectiveness of the online game Kahoot! in terms of vocabulary teaching. We need your contributions, so we would appreciate if you participated in our study.

### The First Part

Please choose your option below.

The Kahoot! logo is displayed in a large, white, bold, sans-serif font with a slight 3D effect. It is centered within a solid orange rectangular background.

Have you ever used Kahoot! in teaching English? \*

- ☐ Yes
- ☐ No.

NEXT

This part is about the purposes for which Kahoot! has been used.

For what purpose(s) have you used Kahoot! in teaching English?  
(You can choose more than one option if you like.) \*

- ☐ To present vocabulary
- ☐ To present grammar
- ☐ To practise new words
- ☐ To practise new grammar points
- ☐ Others

If you have picked "Others" option above, please specify your other purpose(s) for using Kahoot!

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In this part, please select the option(s) to which you agree.

Do you think that Kahoot! is effective in terms of vocabulary teaching? \*

- ☐ Yes
- ☐ No
- ☐ Partly

If you have picked "No" or "Partly" option above, please explain your reasons.

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This part is about the implementation of Kahoot! in the lessons.

How often do you use Kahoot! in your lessons? \*

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Which of the following do you use in Kahoot!?! (You can choose more than one option if you like.) \*

- ☐ Videos
- ☐ Gifs
- ☐ Pictures
- ☐ Photos
- ☐ Emoticons
- ☐ Cartoons
- ☐ Graphics
- ☐ Jumbles
- ☐ Others

If you have picked "Others" option above, please specify the other things you use in Kahoot!.

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What type of words do/can you practise in Kahoot!?! (You can choose more than one option if you like.) \*

- ☐ Content words (i. e. nouns, verbs, adjectives, adverbs)
- ☐ Function words (i.e. pronouns, prepositions, etc.)
- ☐ Phrasal verbs (e.g. call out)
- ☐ Collocations (e. g. make a mistake)
- ☐ Idioms (e.g. to feel blue)
- ☐ Others

If you have picked "Others" option above, please specify the other words you practise through Kahoot!.

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Do you think that Kahoot! can be effective in terms of vocabulary retention? \*

- ☐ Yes
- ☐ No
- ☐ Partly

Please explain your reason(s) briefly according to your answer to the question above. \*

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What are the advantages of using Kahoot! in teaching vocabulary? (You can choose more than one option if you like.) \*

- ☐ It increases the motivation of the learners.
- ☐ It creates a positively competitive atmosphere.
- ☐ It is an effective tool to revise vocabulary at the end of the lesson.
- ☐ The learners enjoy playing it.
- ☐ It is an effective tool to practise vocabulary.

In the space below, please specify any other advantage(s) of using Kahoot! in teaching vocabulary.

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What are the disadvantages of using Kahoot! in teaching vocabulary? (You can choose more than one option if you like.) \*

- ☐ It may not be applicable because it requires Internet connection.
- ☐ Some learners get demotivated when they cannot keep up with the rest of the class due to their slow Internet connection.
- ☐ It is time consuming.

In the space below, please specify any other disadvantage(s) of using Kahoot! in teaching vocabulary.

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In the space below, you can write anything you think relevant with Kahoot!.

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## APPENDIX 10. Results of the Pilot Study (Item Analysis)

| Item 1                                                                                                                                                            | Low Group | Middle Group | High Group | Discrimination Level | Difficulty Level |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------|------------|----------------------|------------------|
| There was a <b>fuss</b> in the town due to the war.                                                                                                               |           |              |            | 0.30                 | 0.69             |
| A) careful organization<br>10%                                                                                                                                    | 5         | 4            | 1          |                      |                  |
| B) calm activity<br>11%                                                                                                                                           | 7         | 2            | 2          |                      |                  |
| <b>C) anxious activity</b>                                                                                                                                        | 18        | 23           | 28         |                      |                  |
| D) reckless organization<br>10%                                                                                                                                   | 3         | 5            | 2          |                      |                  |
| No answer                                                                                                                                                         | -         | -            | -          |                      |                  |
| Item 2                                                                                                                                                            | Low Group | Middle Group | High Group | Discrimination Level | Difficulty Level |
| The manager had to fire some of the employees due to the financial crisis, but he kept <b>putting off</b> that decision because he loved each one of his workers. |           |              |            | 0.24                 | 0.18             |
| A) analysing<br>23%                                                                                                                                               | 15        | 6            | 2          |                      |                  |
| <b>B) postponing</b>                                                                                                                                              | 2         | 8            | 10         |                      |                  |
| C) undertaking<br>6%                                                                                                                                              | 2         | 1            | 3          |                      |                  |
| D) cancelling<br>48%                                                                                                                                              | 12        | 18           | 18         |                      |                  |
| No answer                                                                                                                                                         | 2         | 1            | -          |                      |                  |

| Item 3                                                                                                                        | Low Group | Middle Group | High Group | Discrimination Level | Difficulty Level |
|-------------------------------------------------------------------------------------------------------------------------------|-----------|--------------|------------|----------------------|------------------|
| She is an arrogant person. She <b>looks down on</b> other people all the time.                                                |           |              |            | 0.27                 | 0.31             |
| A) <b>despises</b>                                                                                                            | 6         | 13           | 15         |                      |                  |
| B) assesses<br>12%                                                                                                            | 6         | 1            | 5          |                      |                  |
| C) fears<br>14%                                                                                                               | 6         | 6            | 2          |                      |                  |
| D) insists<br>33%                                                                                                             | 11        | 12           | 10         |                      |                  |
| No answer                                                                                                                     | 4         | 2            | 1          |                      |                  |
| Item 4                                                                                                                        | Low Group | Middle Group | High Group | Discrimination Level | Difficulty Level |
| The murder was a complete mystery. The police <b>inspected</b> the crime scene thoroughly, and yet they had not found a clue. |           |              |            | 0.57                 | 0.50             |
| A) compared<br>15%                                                                                                            | 8         | 7            | -          |                      |                  |
| B) <b>examined</b>                                                                                                            | 7         | 10           | 26         |                      |                  |
| C) evacuated<br>22%                                                                                                           | 6         | 11           | 5          |                      |                  |
| D) committed<br>17%                                                                                                           | 10        | 5            | 2          |                      |                  |
| No answer                                                                                                                     | 2         | 1            | -          |                      |                  |
| Item 5                                                                                                                        | Low Group | Middle Group | High Group | Discrimination Level | Difficulty Level |
| <b>Larry:</b> I need to take a vacation immediately. I                                                                        |           |              |            |                      |                  |

|                                                             |      |      |
|-------------------------------------------------------------|------|------|
| am feeling down lately.<br>Taking a break would do wonders. | 0.15 | 0.86 |
|-------------------------------------------------------------|------|------|

**Tom:** I recommend you go and see the Maldives. When you go there, I swear, you are going to feel **breezy** again.

|                         |    |    |    |
|-------------------------|----|----|----|
| A) lively and relaxed   | 26 | 30 | 31 |
| B) sound and safe<br>5% | 3  | 2  | -  |
| C) careless<br>4%       | 2  | 1  | 1  |
| D) lifeless<br>4%       | 2  | 1  | 1  |
| No answer               | -  | -  | -  |

| Item 6 | Low Group | Middle Group | High Group | Discrimination Level | Difficulty Level |
|--------|-----------|--------------|------------|----------------------|------------------|
|--------|-----------|--------------|------------|----------------------|------------------|

|                                                                                                           |      |      |
|-----------------------------------------------------------------------------------------------------------|------|------|
| Despite the overwhelming workload, they were still feeling <b>wide awake</b> because of their motivation. | 0.15 | 0.31 |
|-----------------------------------------------------------------------------------------------------------|------|------|

|                     |    |    |    |
|---------------------|----|----|----|
| A) grumpy<br>15%    | 6  | 8  | 1  |
| B) alert            | 8  | 10 | 13 |
| C) ambitious<br>40% | 15 | 14 | 11 |
| D) better<br>13%    | 3  | 2  | 8  |
| No answer           | 1  | -  | -  |

| Item 7                                                                               | Low Group | Middle Group | High Group | Discrimination Level | Difficulty Level |
|--------------------------------------------------------------------------------------|-----------|--------------|------------|----------------------|------------------|
| Unfortunately, there are far more <b>severe</b> punishments than capital punishment. |           |              |            | 0.48                 | 0.43             |
| A) <b>harsh</b>                                                                      | 6         | 9            | 22         |                      |                  |
| B) soft<br>23%                                                                       | 7         | 10           | 6          |                      |                  |
| C) witless<br>25%                                                                    | 10        | 12           | 3          |                      |                  |
| D) tense<br>12%                                                                      | 8         | 2            | 2          |                      |                  |
| No answer                                                                            | 2         | 1            | -          |                      |                  |
| Item 8                                                                               | Low Group | Middle Group | High Group | Discrimination Level | Difficulty Level |
| She has strict <b>moral values</b> , and she sticks to them at all costs.            |           |              |            | 0.69                 | 0.56             |
| A) <b>principles</b>                                                                 | 7         | 16           | 30         |                      |                  |
| B) knowledge<br>9%                                                                   | 3         | 6            | -          |                      |                  |
| C) behaviour<br>21%                                                                  | 15        | 5            | 1          |                      |                  |
| D) cognition<br>15%                                                                  | 6         | 7            | 2          |                      |                  |
| No answer                                                                            | 2         | -            | -          |                      |                  |
| Item 9                                                                               | Low Group | Middle Group | High Group | Discrimination Level | Difficulty Level |

|                                                                                                                |           |              |            |                      |                  |
|----------------------------------------------------------------------------------------------------------------|-----------|--------------|------------|----------------------|------------------|
| If you need to do teamwork at your workplace, you should have good relations with your <b>fellow workers</b> . |           |              |            | 0.51                 | 0.68             |
| A) colleagues                                                                                                  | 14        | 26           | 31         |                      |                  |
| B) spouses<br>8%                                                                                               | 5         | 2            | 1          |                      |                  |
| C) performers<br>16%                                                                                           | 11        | 4            | 1          |                      |                  |
| D) opponents<br>4%                                                                                             | 3         | 1            | -          |                      |                  |
| No answer                                                                                                      | -         | 1            | -          |                      |                  |
| Item 10                                                                                                        | Low Group | Middle Group | High Group | Discrimination Level | Difficulty Level |
| She is a night owl. The idea of working in the morning <b>terrifies</b> her.                                   |           |              |            | 0.09                 | 0.25             |
| A) warns<br>16%                                                                                                | 6         | 7            | 3          |                      |                  |
| B) dreads                                                                                                      | 7         | 3            | 10         |                      |                  |
| C) disturbs<br>50%                                                                                             | 18        | 19           | 13         |                      |                  |
| D) concerns<br>14%                                                                                             | 2         | 5            | 7          |                      |                  |
| No answer                                                                                                      | -         | -            | -          |                      |                  |
| Item 11                                                                                                        | Low Group | Middle Group | High Group | Discrimination Level | Difficulty Level |
| His mission was to <b>watch</b> the enemies and report any activity he saw.                                    |           |              |            | 0.45                 | 0.71             |

|                    |    |    |    |
|--------------------|----|----|----|
| A) argue<br>2%     | 2  | -  | -  |
| B) persuade<br>18% | 6  | 10 | 2  |
| <b>C) observe</b>  | 16 | 22 | 31 |
| D) decide<br>11%   | 9  | 2  | -  |
| No answer          | -  | -  | -  |

| Item 12                                                                                                                  | Low<br>Group | Middle<br>Group | High<br>Group | Discrimination<br>Level | Difficulty<br>Level |
|--------------------------------------------------------------------------------------------------------------------------|--------------|-----------------|---------------|-------------------------|---------------------|
| Climate change has been a confrontational matter among the scholars. The disagreements have not settled for a long time. |              |                 |               |                         |                     |
| According to the passage, which word describes the matter reported in the text above?                                    |              |                 |               | 0.24                    | 0.48                |

|                         |    |    |    |
|-------------------------|----|----|----|
| A) collaborative<br>16% | 7  | 5  | 4  |
| B) sophisticated<br>17% | 4  | 7  | 6  |
| <b>C) conflictual</b>   | 12 | 10 | 20 |
| D) ambiguous<br>11%     | 5  | 5  | 1  |
| No answer               | 5  | 7  | 2  |

| Item 13                                                                | Low<br>Group | Middle<br>Group | High<br>Group | Discrimination<br>Level | Difficulty<br>Level |
|------------------------------------------------------------------------|--------------|-----------------|---------------|-------------------------|---------------------|
| <b>Daniel:</b> The boss is very irritable today. Try not to annoy him. |              |                 |               |                         |                     |

|                                                                                                                                                                         |           |              |            |                      |                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------|------------|----------------------|------------------|
| <b>Sophie:</b> I know! I think he must have got up on the wrong side of the bed, or he'd had a terrible night. According to the dialogue above, how does the boss feel? |           |              |            | 0.36                 | 0.60             |
| A) cheerful<br>2%                                                                                                                                                       | 2         | -            | -          |                      |                  |
| B) jealous<br>5%                                                                                                                                                        | 3         | 2            | -          |                      |                  |
| C) snoopy<br>27%                                                                                                                                                        | 14        | 7            | 6          |                      |                  |
| <b>D) groggy</b>                                                                                                                                                        | 14        | 24           | 26         |                      |                  |
| No answer                                                                                                                                                               | -         | 1            | 1          |                      |                  |
| Item 14                                                                                                                                                                 | Low Group | Middle Group | High Group | Discrimination Level | Difficulty Level |
| This system achieves maximum productivity with minimum wasted effort.                                                                                                   |           |              |            | 0.57                 | 0.59             |
| Which word describes this system best?                                                                                                                                  |           |              |            |                      |                  |
| A) extravagant<br>17%                                                                                                                                                   | 7         | 7            | 3          |                      |                  |
| <b>B) efficient</b>                                                                                                                                                     | 10        | 20           | 29         |                      |                  |
| C) effortless<br>16%                                                                                                                                                    | 10        | 6            | -          |                      |                  |
| D) relevant<br>6%                                                                                                                                                       | 5         | -            | 1          |                      |                  |
| No answer                                                                                                                                                               | 1         | 1            | -          |                      |                  |



| Item 15                                                                                                                                                                              | Low Group | Middle Group | High Group | Discrimination Level | Difficulty Level |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------|------------|----------------------|------------------|
| <b>Lily:</b> What an awful smell! I think I am going to throw up.<br><br><b>Bethy:</b> It certainly is!                                                                              |           |              |            |                      |                  |
|                                                                                                                                                                                      |           |              |            | 0.30                 | 0.75             |
| According to the dialogue above, how do they feel?                                                                                                                                   |           |              |            |                      |                  |
| A) embarrassed<br>11%                                                                                                                                                                | 4         | 7            | -          |                      |                  |
| <b>B) disgusted</b>                                                                                                                                                                  | 20        | 25           | 30         |                      |                  |
| C) concerned<br>6%                                                                                                                                                                   | 4         | -            | 2          |                      |                  |
| D) anxious<br>8%                                                                                                                                                                     | 5         | 2            | 1          |                      |                  |
| No answer                                                                                                                                                                            | -         | -            | -          |                      |                  |
| Item 16                                                                                                                                                                              | Low Group | Middle Group | High Group | Discrimination Level | Difficulty Level |
| It is essential to work together to fulfil a task and realize the common goals in a classroom.<br><br>According to the sentence above, what kind of a work is needed in a classroom? |           |              |            |                      |                  |
|                                                                                                                                                                                      |           |              |            | 0.51                 | 0.59             |
| A) competitive<br>30%                                                                                                                                                                | 17        | 10           | 3          |                      |                  |
| B) prohibitive<br>7%                                                                                                                                                                 | 3         | 3            | 1          |                      |                  |
| <b>C) collaborative</b>                                                                                                                                                              | 11        | 19           | 28         |                      |                  |
| D) stimulating<br>3%                                                                                                                                                                 | 1         | 1            | 1          |                      |                  |

|                                                                                                                 |           |              |            |                      |                  |
|-----------------------------------------------------------------------------------------------------------------|-----------|--------------|------------|----------------------|------------------|
| No answer                                                                                                       | 1         | 1            | -          |                      |                  |
| Item 17                                                                                                         | Low Group | Middle Group | High Group | Discrimination Level | Difficulty Level |
| Scarlett's husband is committed to their marriage. He would never cheat on her.                                 |           |              |            | 0.00                 | 0.48             |
| Which of the words below describes Scarlett's husband?                                                          |           |              |            |                      |                  |
| A) unreliable<br>21%                                                                                            | 8         | 6            | 7          |                      |                  |
| B) helpful<br>3%                                                                                                | 2         | 1            | -          |                      |                  |
| C) deceptive<br>20%                                                                                             | 7         | 13           | 10         |                      |                  |
| <b>D) faithful</b>                                                                                              | 16        | 14           | 16         |                      |                  |
| No answer                                                                                                       | -         | -            | -          |                      |                  |
| Item 18                                                                                                         | Low Group | Middle Group | High Group | Discrimination Level | Difficulty Level |
| He is very tactful and subtle while resolving conflicts. He manages the situations and relationships skilfully. |           |              |            | 0.24                 | 0.51             |
| Which of the words below best describes him?                                                                    |           |              |            |                      |                  |
| <b>A) diplomatic</b>                                                                                            | 13        | 20           | 21         |                      |                  |
| B) important<br>2%                                                                                              | 1         | 1            | -          |                      |                  |
| C) generous<br>8%                                                                                               | 3         | 3            | 2          |                      |                  |

|                       |    |    |    |
|-----------------------|----|----|----|
| D) extroverted<br>35% | 15 | 10 | 10 |
| No answer             | 1  | -  | -  |

| Item 19                                                                                                            | Low Group | Middle Group | High Group | Discrimination Level | Difficulty Level |
|--------------------------------------------------------------------------------------------------------------------|-----------|--------------|------------|----------------------|------------------|
| This house has an amazing view. There is a/an _____ plain full of gardens in front of the house. It seems endless. |           |              |            | 0.42                 | 0.33             |

|                  |    |    |    |
|------------------|----|----|----|
| A) tiny<br>10%   | 6  | 3  | 1  |
| B) bright<br>45% | 18 | 18 | 9  |
| <b>C) vast</b>   | 4  | 7  | 18 |
| D) mild<br>13%   | 3  | 5  | 5  |
| No answer        | 2  | 1  | -  |

| Item 20                                               | Low Group | Middle Group | High Group | Discrimination Level | Difficulty Level |
|-------------------------------------------------------|-----------|--------------|------------|----------------------|------------------|
| I cannot stand her voice. I _____ whenever she talks. |           |              |            | 0.57                 | 0.56             |
| A) get curious<br>15%                                 | 9         | 5            | 1          |                      |                  |
| B) sneeze<br>16%                                      | 5         | 9            | 2          |                      |                  |
| C) get excited<br>12%                                 | 7         | 3            | 2          |                      |                  |
| D) cringe                                             | 9         | 16           | 28         |                      |                  |

|                                                                                                                                     | 3         | 1            | -          |                      |                  |
|-------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------|------------|----------------------|------------------|
| No answer                                                                                                                           |           |              |            |                      |                  |
| Item 21                                                                                                                             | Low Group | Middle Group | High Group | Discrimination Level | Difficulty Level |
| You should boil the potatoes until they are _____, then mash them.                                                                  |           |              |            | 0.36                 | 0.45             |
| A) chilled<br>13%                                                                                                                   | 6         | 4            | 3          |                      |                  |
| B) roasted<br>37%                                                                                                                   | 13        | 16           | 8          |                      |                  |
| <b>C) softened</b>                                                                                                                  | 9         | 10           | 21         |                      |                  |
| D) seasoned<br>9%                                                                                                                   | 4         | 4            | 1          |                      |                  |
| No answer                                                                                                                           | 1         | -            | -          |                      |                  |
| Item 22                                                                                                                             | Low Group | Middle Group | High Group | Discrimination Level | Difficulty Level |
| The Prime Minister's statements were very bold and confident. She is such a/an_____ person that she gets what she wants in the end. |           |              |            | 0.24                 | 0.48             |
| A) original<br>6%                                                                                                                   | 2         | 3            | 1          |                      |                  |
| B) experienced<br>18%                                                                                                               | 9         | 4            | 5          |                      |                  |
| <b>C) assertive</b>                                                                                                                 | 12        | 19           | 20         |                      |                  |
| D) motivated<br>22%                                                                                                                 | 8         | 8            | 6          |                      |                  |

|                                                                                                                                 | 2         | -            | 1          |                      |                  |
|---------------------------------------------------------------------------------------------------------------------------------|-----------|--------------|------------|----------------------|------------------|
| No answer                                                                                                                       |           |              |            |                      |                  |
| Item 23                                                                                                                         | Low Group | Middle Group | High Group | Discrimination Level | Difficulty Level |
| Good speakers know how to use their voice and _____ well.                                                                       |           |              |            | 0.48                 | 0.42             |
| <b>A) gestures</b>                                                                                                              | 6         | 8            | 22         |                      |                  |
|                                                                                                                                 | 2         | 5            | 2          |                      |                  |
| B) anxiety<br>9%                                                                                                                |           |              |            |                      |                  |
| C) audience<br>49%                                                                                                              | 21        | 21           | 7          |                      |                  |
| D) income<br>3%                                                                                                                 | 2         | -            | 1          |                      |                  |
|                                                                                                                                 | 2         | -            | 1          |                      |                  |
| No answer                                                                                                                       |           |              |            |                      |                  |
| Item 24                                                                                                                         | Low Group | Middle Group | High Group | Discrimination Level | Difficulty Level |
| The candidates took a test, and then an interview was conducted with each one of them. The school has a difficult _____ method. |           |              |            | 0.39                 | 0.46             |
| A) solution<br>22%                                                                                                              | 14        | 6            | 2          |                      |                  |
| B) raffle<br>11%                                                                                                                | 4         | 5            | 2          |                      |                  |
| C) criticism<br>19%                                                                                                             | 5         | 7            | 7          |                      |                  |
| <b>D) assessment</b>                                                                                                            | 9         | 15           | 22         |                      |                  |
|                                                                                                                                 | 1         | 1            | -          |                      |                  |
| No answer                                                                                                                       |           |              |            |                      |                  |
| Item 25                                                                                                                         | Low Group | Middle Group | High Group | Discrimination Level | Difficulty Level |

|                                                                                                       |           |              |            |                      |                  |
|-------------------------------------------------------------------------------------------------------|-----------|--------------|------------|----------------------|------------------|
| Most of the regions in the country have been flooded. The people are being ____ .                     |           |              |            | 0.42                 | 0.30             |
| A) prohibited<br>22%                                                                                  | 4         | 12           | 6          |                      |                  |
| B) <b>evacuated</b>                                                                                   | 3         | 7            | 17         |                      |                  |
| C) rejected<br>24%                                                                                    | 9         | 11           | 4          |                      |                  |
| D) Prevented<br>20%                                                                                   | 13        | 1            | 6          |                      |                  |
| No answer                                                                                             | 4         | 3            | -          |                      |                  |
| Item 26                                                                                               | Low Group | Middle Group | High Group | Discrimination Level | Difficulty Level |
| This is a challenging problem, and it requires an intricate ____ .                                    |           |              |            | 0.48                 | 0.63             |
| A) pattern<br>11%                                                                                     | 5         | 5            | 1          |                      |                  |
| B) design<br>11%                                                                                      | 5         | 4            | 2          |                      |                  |
| C) <b>solution</b>                                                                                    | 13        | 20           | 29         |                      |                  |
| D) structure<br>12%                                                                                   | 7         | 4            | 1          |                      |                  |
| No answer                                                                                             | 3         | 1            | -          |                      |                  |
| Item 27                                                                                               | Low Group | Middle Group | High Group | Discrimination Level | Difficulty Level |
| This tribe has bizarre and unusual traditions and ____ . They have been following them for centuries. |           |              |            | 0.42                 | 0.69             |

|                    |    |    |    |
|--------------------|----|----|----|
| A) animals<br>3%   | 1  | 1  | 1  |
| <b>B) customs</b>  | 16 | 23 | 30 |
| C) houses<br>8%    | 5  | 2  | 1  |
| D) vehicles<br>17% | 10 | 6  | 1  |
| No answer          | 1  | 2  | -  |

| Item 28                                                      | Low Group | Middle Group | High Group | Discrimination Level | Difficulty Level |
|--------------------------------------------------------------|-----------|--------------|------------|----------------------|------------------|
| <b>Customer:</b> Hi! I would like a refund for this product. |           |              |            | 0.39                 | 0.50             |
| <b>Salesperson:</b> Alright! I need to see the _____ first.  |           |              |            |                      |                  |
| A) money<br>21%                                              | 7         | 9            | 5          |                      |                  |
| B) customer<br>10%                                           | 6         | 3            | 1          |                      |                  |
| C) trolley<br>15%                                            | 7         | 5            | 3          |                      |                  |
| <b>D) receipt</b>                                            | 10        | 16           | 23         |                      |                  |
| No answer                                                    | 3         | 1            | 1          |                      |                  |

| Item 29                                                                                                      | Low Group | Middle Group | High Group | Discrimination Level | Difficulty Level |
|--------------------------------------------------------------------------------------------------------------|-----------|--------------|------------|----------------------|------------------|
| <b>Jack:</b> Choose your friends wisely because loyalty is a rare quality.                                   |           |              |            | 0.72                 | 0.51             |
| <b>Sam:</b> You're absolutely right. I once found out about my friend's disloyalty, and that broke my heart. |           |              |            |                      |                  |

According to the dialogue,  
that friend could have \_\_\_\_\_  
Sam.

|                     |    |    |    |
|---------------------|----|----|----|
|                     | 5  | 14 | 29 |
| <b>A) betrayed</b>  |    |    |    |
|                     | 11 | 4  | 2  |
| B) refused<br>17%   |    |    |    |
|                     | 5  | 8  | 1  |
| C) persuaded<br>14% |    |    |    |
|                     | 6  | 6  | 1  |
| D) judged<br>13%    |    |    |    |
|                     | 6  | 2  | -  |
| No answer           |    |    |    |

| Item 30                                                               | Low<br>Group | Middle<br>Group | High<br>Group | Discrimination<br>Level | Difficulty<br>Level |
|-----------------------------------------------------------------------|--------------|-----------------|---------------|-------------------------|---------------------|
| In some religions, people<br>sacrifice animals as part of a<br>_____. |              |                 |               | 0.75                    | 0.62                |
|                                                                       | 11           | 1               | -             |                         |                     |
| A) quarrel<br>12%                                                     |              |                 |               |                         |                     |
|                                                                       | 8            | 27              | 33            |                         |                     |
| <b>B) ritual</b>                                                      |              |                 |               |                         |                     |
|                                                                       | 3            | 2               | -             |                         |                     |
| C) cost<br>5%                                                         |              |                 |               |                         |                     |
|                                                                       | 4            | 4               | -             |                         |                     |
| D) recipe<br>8%                                                       |              |                 |               |                         |                     |
|                                                                       | 7            | -               | -             |                         |                     |
| No answer                                                             |              |                 |               |                         |                     |



## APPENDIX 11. Consent

GAZİ ÜNİVERSİTESİ

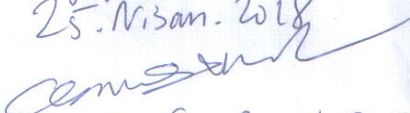
YABANCI DİLLER YÜKSEKOKULU MÜDÜRLÜĞÜNE

Gazi Üniversitesi Eğitim Bilimleri Enstitüsü Yabancı Diller Eğitimi Ana Bilim Dalı İngiliz Dili Eğitimi Bilim Dalında yüksek lisans öğrencisiyim. Tez çalışmam kapsamında yüksekokulunuzda veri toplama aracımın pilot uygulamasını yapmak istiyorum. Veri toplama aracımın bir kopyası ektedir. Veri toplama aracımın pilot çalışması için ve öğrencilerle yapacağım uygulamalar için gerekli iznin tarafıma verilmesini saygılarımla arz ederim. 25 Nisan 2018



Hamide Nur ÜNAL  
Öğrenci No: 168164101

Ek: Veri Toplama Aracımın Örneği

Uygundur  
25. Nisan. 2018  
  
Dr. Öğr. Üy. Cemal ÇAKIR  
(Danışman)

Uygundur  
2.5.2018  
  
Ahmet Özcan  
İdari Koordinatör