ISTANBUL SABAHATTIN ZAIM UNIVERSITY
GRADUATE EDUCATION INSTITUTE
DEPARTMENT OF ENGLISH LANGUAGE TEACHING

THE EFFECTS OF DIFFERENTIATED GAMIFICATION TREATMENTS ON MIDDLE SCHOOL STUDENTS' ACADEMIC ACHIEVEMENT, MOTIVATION AND ATTITUDES IN SECOND LANGUAGE LEARNING

MASTER THESIS

Bahadır AYKUT

Istanbul
March, 2022

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Supervisor
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THESIS APPROVAL

This study has been approved in partial fulfillment of the requirements for an MA Degree in English Language Teaching.

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Approval by

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DECLARATION OF SCIENTIFIC ETHICS AND ORIGINALITY

This is to certify that this MA thesis titled **"THE EFFECTS OF DIFFERENTIATED GAMIFICATION TREATMENTS ON MIDDLE SCHOOL STUDENTS' ACADEMIC ACHIEVEMENT, MOTIVATION AND ATTITUDES IN SECOND LANGUAGE LEARNING"** is my own work and I have acted according to scientific ethics and academic rules while producing it. I have collected and used all information and data according to scientific ethics and guidelines on thesis writing of Sabahattin Zaim University. I have fully referenced, in both the text and bibliography, all direct and indirect quotations and all sources I have used in this work.

Signature

Bahadır AYKUT

Istanbul, March 2022

ACKNOWLEDGEMENTS

First of all, I would like to express my deep and sincere gratitude to my supervisor, Assoc. Prof. Dr. Hidayet SARANDİ, for his continuous trust, guidance, and extraordinary support throughout this thesis. Without his immense knowledge of the field, patience, and support, this thesis would not have been possible.

Secondly, I would like to offer my special thanks to Prof. Dr. İbrahim YILGÖR, Assoc. Prof. Dr. Emrah GÖRGÜLÜ and Asst. Prof. Dr. Abdül Kasım VARLI for their supportive and thoughtful behavior along with their valuable feedback during their enjoyable Master courses.

In addition, I would like to thank the rest of my thesis committee members Asst. Prof. Dr. Mustafa POLAT and Asst. Prof. Dr. Özlem ZABİTGİL GÜLSEREN. It was an honor and pleasure for me to meet them and get their valuable feedback, suggestions, and contributions to the final version of my thesis.

In a world where learning never ends and teaching continues to evolve, this study has enabled me to have a fresh perspective on how we, as teachers influence the academic achievement, motivation, and attitudes of our students within the flow of the lessons. It also allowed me to be more aware of the needs of our students while learning a second language.

I am incredibly grateful to the students who voluntarily participated in the discussions, questionnaires, and interviews which allowed me to draw meaningful connections in this study. This would not have been possible without their help.

Last but not least, my greatest thank goes to my dearest friend Gökçe Uluscu Kalaycı and Hakan Kalaycı for their endless support, encouragement, and motivation throughout this thesis. I dedicate this study to my beloved mother Zübeyde Buket Aykut and my father Mehmet Ruhi Aykut.

Bahadır AYKUT

Istanbul, March 2022

ÖNSÖZ

Öğrenmenin asla sonunun gelmediği gibi, öğretmenin de gün geçtikçe hayatımızdaki önemini hatırlattığı dünyamızda, biz öğretmenlerin öğrencilerin hayatına nasıl dokunduğu, akademik başarılarını, motivasyonlarını ve derse olan tutumlarını nasıl etkilediği bir kez daha bu çalışma ile gözler önüne serilmiştir. Ayrıca bu çalışma, dil öğreniminde öğrencilerin ihtiyaçlarının daha iyi anlaşılmasını sağlamıştır.

İlk olarak tez danışmanım Dr. Öğr. Üyesi Hidayet Sarandi'ye en içten minnet ve şükranlarımı sunuyorum. Kendisi süreç boyunca üzerimden desteğini esirgememiş, ne zaman ihtiyacım olsa gereken geribildirimi vererek bana rehberlik etmiştir. Yüksek Lisans sürecim boyunca derslerdeki yapıcı ve yol gösterici tutumlarından ötürü Prof. Dr. İbrahim YILGÖR, Dr. Öğr. Üyesi Emrah GÖRGÜLÜ ve Dr. Öğr. Üyesi Abdül Kasım VARLI'ya minnettarım.

Tez savunmam süresince, değerli deneyimlerini paylaşan ve tezimin son halini almasına katkı sağlayan Dr. Öğr. Üyesi Mustafa POLAT ve Dr. Öğr. Üyesi Özlem ZABİTGİL GÜLSEREN'e teşekkürü borç bilirim.

Son olarak, bu çalışmadaki değerli sonuçları elde etmemde anahtar rol oynayan öğrencilerime ve desteklerini bir an olsun esirgemeyen değerli arkadaşlarım Gökçe Uluscu Kalaycı ve Hakan Kalaycı'ya sonsuz teşekkürlerimi sunuyorum. Bu çalışmayı bana ilham veren çok sevgili annem Zübeyde Buket Aykut ve babam Mehmet Ruhi Aykut'a ithaf ediyorum.

Bahadır AYKUT

Istanbul, March 2022

ABSTRACT

THE EFFECTS OF DIFFERENTIATED GAMIFICATION TREATMENTS ON MIDDLE SCHOOL STUDENTS' ACADEMIC ACHIEVEMENT, MOTIVATION AND ATTITUDES IN SECOND LANGUAGE LEARNING

Master, Department of English Language
Teaching Supervisor Assoc. Prof. Dr. Hidayet SARANDİ
March 2022 – 132 + xvii

The purpose of this thesis is to examine the effects of game elements on students' motivation, attitude, and academic achievement during second language learning. The thesis includes an exhaustive literature analysis on the history of games, concepts of gamification, second language learning, motivation, and attitude. On the pedagogical side, the scope is widened to how player types, game-based learning, and features of gamification treatments in education and language learning are regarded in the literature.

Within this framework, an experimental research study is proposed that includes data collection from middle school students in lessons that feature differentiated game design elements. The research was carried out with three different study groups consisting of 60 students. Students in the Experimental Group – 1, the Experimental Group – 2, and the Control Group received 4 weeks of education. Unlike the Control Group, Experimental Group – 1 and Experimental Group – 2 received their education with the implementation of game elements in gamified lesson plans. Furthermore, the gamification treatment of experimental group – 2 was enhanced with the implementation of weekly leaderboards, points, and achievement badges. The quantitative side of data was collected via an achievement test whereas the qualitative data was gathered via semi-structured interviews. To strengthen the treatment results, a perceived motivational questionnaire and attitude scale were applied in the post-test stage.

The results of this study indicate that due to the implementation of differentiated gamification treatments, students demonstrated high levels of motivation and attitude while achieving academically higher than the ones who received regular gamification treatments. This study also reveals that the benefits of differentiated gamification can be used to make efficient interaction between students and teachers resulting in smoother and more fun-oriented classes.

Keywords: gamification, differentiated gamification, game-based learning, player types, motivation, attitude, academic achievement, vocabulary development, second language learning

ÖZET

FARKLILAŞTIRILMIŞ OYUNLAŞTIRMA YÖNTEMLERİNİN ORTAOKUL SEVİYESİNDEKİ ÖĞRENCİLERİN DİL ÖĞRENİMİ ÇERÇEVESİNDE AKADEMİK BAŞARI, MOTİVASYON VE TUTUMLARINA ETKİSİ

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Bu tez çalışmasının amacı, öğrenme ortamına entegre edilen oyun elementlerinin öğrencilerin motivasyonuna, derse olan tutumuna ve akademik başarısına olan etkisini araştırmaktır. Bu araştırmayı detaylandırmak adına, oyun, oyunlaştırma, motivasyon ve tutum gibi terimlerin tarihsel geçmişlerini araştıran kapsamlı bir literatür taraması sunulmuştur. Bu analiz, pedagojik bağlamdaki etkileri görmek için, oyuncu tipleri, oyun bazlı öğrenme gibi terimlerin yanı sıra, oyunlaştırmanın tasarım özeliklerinin eğitimdeki ve dil edinimindeki uygulanışının literatürdeki karşılığının araştırılması ile devam etmiştir.

Bu kapsamda, ortaokul öğrencileri ile farklılaştırılmış oyun elementleri içeren ve verilerin toplandığı dersler yapılmıştır. Araştırma toplamda 60 öğrenciyi kapsamaktadır ve öğrenciler 3 farklı çalışma grubuna bölünmüştür. Deney Grubu – 1, Deney Grubu – 2 ve Kontrol Grubunda olan öğrenciler ile 4 haftalık bir çalışma yürütülmüştür. Kontrol Grubunun aksine, Deney Grubu – 1 ve Deney Grubu – 2 ile yapılan çalışmalarda oyun elementleri içeren oyunlaştırılmış ders planları kullanılmıştır. Ayrıca Deney grubu – 2'nin oyunlaştırma metodu haftalık liderlik tablosu, puanlar ve başarı rozetleri ile farklılaştırılmıştır. Araştırmanın nicel verileri, başarı testi ile toplanmıştır. Nitel verilerin toplanmasında ise yarı yapılandırılmış mülakat yöntemi kullanılmıştır. Çalışma sonuçlarını güçlendirmek ve nitel verileri desteklemek adına algılanan motivasyon anketi ve tutum anketi uygulanmıştır. Bu veriler mülakat yöntemi ile toplanan verileri desteklemesi amacıyla toplanmıştır.

Bu tez çalışmasının sonuçları göz önüne alındığında öğrenme ortamına entegre edilen farklılaştırılmış oyunlaştırma yöntemleri sayesinde öğrencilerin yabancı dil edinimi derslerine olan motivasyonları ve tutumları yükselerek, akademik başarıları klasik oyunlaştırma yöntemlerine kıyasla daha fazla gelişim göstermiştir. Ayrıca bu çalışma,

farklılaştırılmış oyunlaştırma yöntemlerinin etkin kullanımının öğrenci-öğretmen arasındaki ilişkiyi daha etkili hale getirerek daha akıcı ve eğlence odaklı bir öğrenme ortamı sağlanmasına katkıda bulunacağını göstermiştir.

Anahtar Sözcükler: Oyunlaştırma, farklılaştırılmış oyunlaştırma, oyun bazlı öğrenme, oyuncu tipleri, motivasyon, tutum, akademik başarı, kelime öğrenimi, ikinci dil öğrenimi

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LIST OF ABBREVIATIONS

GBL: Game-based Learning

L1: First Language

L2: Second Language

EFL: English as a Foreign Language

ESL: English as a Second language

ELT: English Language Teaching

SLL: Second Language Learning

SLA: Second Language Acquisition

STM: Short-Term Memory

LTM: Long-Term Memory

LMS: Learning Management System

ICT: Information and Communications Technology

CHAPTER I

INTRODUCTION

The purpose of this chapter is to familiarize readers with the outline of this study. This study explores gamification and its impact on student motivation, attitude, and academic achievement in the format of vocabulary learning in second language learning. It can be considered as an attempt to examine if middle school students' motivation, attitude towards certain tasks in a lesson, and their vocabulary learning have any connection with the implementation of gamification that features differentiated game elements. This chapter first introduces the statement of the problem, the reasons for its significance, and the purposes of why this key study investigated this particular aspect of English Language Teaching. Then, there will be a presentation of the research questions. Lastly, this chapter will also define the key terms used in this research.

1.1 The Statement of the Problem

In order to learn a foreign language, it is crucial that one needs to acquire an extensive range of vocabulary (Hulstijn & Laufer, 2001). Zimmerman (1997) also stated that language cannot be thought of as separate from vocabulary and for proper language acquisition to occur, one must know the required vocabulary. Schmitt (2010) further elaborated on this by stating that it is essential for teachers to modernize themselves in order to make their learners fully acquire a foreign language. On the other hand, for learners, one of the most common issues of the language learning process is not being able to find an effective way to retain and remember the vocabulary (Lam, 2014). However, it is undeniable that vocabulary teaching has been a controversial topic among teachers as well. While some still prefer the traditional ways of teaching which rely on memorizing and repetitive activities, there is a rising majority who focus on the element of fun with technology-integrated lessons. (Nahmod, 2017). Furthermore, Nahmod (2017) also stated that due to students being immune to the traditional ways of vocabulary learning, teachers should keep up with technological developments and become just as technologically savvy as the students. This attempt to enhance the language learning environment started when teachers used videos and some other visual tools hoping to get the attention of students while providing more entertainment during the learning process. In today's digitalized world, there is no doubt that teachers are actively seeking creative methods to make their courses more desirable in the eyes of students as the level of motivation and attitude towards lessons are decreasing (Nguyen & Khuat, 2003). It is

important to meet the learners' needs and make necessary modifications to the lessons. Prensky (2003) stated that utilizing games could foster certain advantages and it can be seen as the remedy for this lack of motivation and positive attitude of the students.

According to Prensky (2005), today's learners can be considered as individuals that are highly skilled in the use of technology to the level of 'digitally native'. Therefore, especially in learning a second language, they are becoming numb to the traditional methods of teaching which puts the teacher at the centre of the learning experience. They are constantly having difficulties in keeping their focus and motivation resulting in a lack of interest towards the given subject. What's more is that for some, this even results in cheating, failure of the subject or even dropping out of education all together (Alsawaier, 2018). Yeung (2017) suggested that integrating online gamification tools into school curriculums can reinforce students' motivation toward learning.

Thereby, to avoid this impediment in education and particularly in English Language Teaching, research studies are warranted regarding solving the problem of declining motivation, attitude, and academic success in students' second language learning.

1.2 The Significance and Purpose of the Study

According to Dörnyei and Cheng (2007), motivation is a significant determiner of learning a second language and the strategies of motivation cannot be ignored. Gardner (1985) also states that motivation is the key factor when it comes to learning a foreign language.

It is undeniable that the COVID-19 pandemic has accelerated the digitalization of the education system the most in comparison to other fields. Furthermore, with this forced digitalization of the world, many would argue that games have been at the center of this change. According to the data in Newzoo Global Games Market Report (2021), many games that used to involve physical activities have now been converted into digital platforms. With the introduction of Blockchain technology, Open AI technologies, Metaverse, NFT (Non-Fungible Tokens), Web 3.0, and the widespread of virtual reality (VR) and augmented reality (AR) technologies, the player database has shown growth by 5.7%, and it is expected to rise even further as Turkey is placed in the #3 rank when it comes to time spent on games.

The concepts of easy access, constant rewarding, and feeling of relevance are what drive these people in playing games (Prensky, 2005). When such feelings are involved, this desirable concept is inevitably bound to create new perspectives on the field of education as the students started to show similar tendencies in lessons as well. The concept of

gamification was born from this need to enhance learning environments while acting as a solution to these tendencies. Zichermann and Cunningham (2011) explain gamification as introducing game elements to a non-game context in order to promote motivation and solve problems. In a pedagogical context in which many students have alienated themselves from education due to the ineffectiveness of traditional teaching methods, when implemented correctly, gamification is the key to promoting engagement in the classroom while changing students' attitudes, thus fostering the required motivation Alsawaier (2018). Moreover, by enhancing teachers' perspectives and showing them an extensive range of techniques and principles, the motivation of the students can be enabled through gamification (Zichermann & Cunningham, 2011). However, the implementation features of gamification should be evaluated carefully in order to change students' attitudes and motivate them to the classroom tasks (Muntean, 2011).

According to Alsawaier (2018), there is still a significant gap between theoretical and practical approaches toward gamification and more guidelines for implementation and gamified designs need to be created.

Taking the significance of second language learning and English language teaching in a middle school environment into consideration, seeking out new ways to reinforce students' vocabulary learning, motivation and attitude is essential. To this end, this thesis will provide a widened scope of differentiated gamification treatments by including more than one game element in the lessons. Lastly, this thesis aims to contribute to the ongoing issue in English language teaching methods by aiming to serve as a guideline both for teachers and students in order to promote a positive attitude, higher motivation, and better academic success toward second language learning.

1.3 The Research Questions of the Study

To fill the practical gap and serve as a guideline regarding the implementation of gamification in the field of ELT, the study will seek answers to the following three research questions.

Research Questions

RQ1: Does gamification have any effects on learners' vocabulary achievement?

RQ2: Do design features of gamification have any effects on learners' vocabulary achievement?

RQ3: What are the EFL learners' perceptions towards the differentiated gamification treatments in terms of their academic achievement, motivation and attitudes?

1.4 Outline of the Study

Chapter I of this study serves the purpose of introduction which introduces the study to the reader. It presents the background of the study along with its significance and the research questions. Then, Chapter II presents the Literature Review which analyzes the related literature about the field in detail. Furthermore, Chapter III, Methodology, presents the research method(s) and procedure(s) that the study employed. It also presents the data collection tools and procedures, participants, sample selection, and sample selection method. Chapter IV, Data Analysis and Results, presents the results and the detailed interpretation of the data. Chapter V, Findings and Discussion connect the findings of the study to the related literature. Finally, Chapter VI, Recommendations and conclusion, states the limitations, presents suggestions for further research, and summarizes the study.

1.5 The Definition of Key Terms

Second Language Learning: A language learned by a person after their native language.

Game: A system in which players engage in an artificial challenge, defined by rules, that results in a quantifiable outcome (Kapp, 2012).

Gamification: Introducing game elements to a non-game environment to solve problems and promote motivation (Zichermann & Cunningham, 2014).

Motivation: A state of encouragement that activates behavior desire or wants towards a certain goal (Dörnyei, 2009).

Intrinsic Motivation: The desire of doing or achieving something because one sees value or takes pleasure from it (Pintrich, 2003).

Extrinsic Motivation: The desire to do or achieve something just because it leads to a certain reward not because of the pleasure or value (Pintrich, 2003).

Game Dynamics: Big-picture abstract aspects of the gamified system that has to be managed (Werbach & Hunter, 2012).

Game Mechanics: Basic processes that drive progression and generate motivation and engagement (Werbach & Hunter, 2012).

Game Components: Specific instantiations of mechanics and dynamics that are essential for gamification (Werbach & Hunter, 2012).

Game Design Elements: The term which combines game components, mechanics, and dynamics under one branch (Werbach & Hunter, 2012).

CHAPTER II

LITERATURE REVIEW

This chapter of the study focuses on providing background information regarding gamification as well the terms related to it, involving EFL teaching and learning, vocabulary teaching and learning, games, game design elements, frameworks, player types, and game-based learning. Then, theoretical connections of gamification to motivation and attitude were made as well as the criticisms of gamification through analysis of national and international research conducted on this educational field. Finally, it overviews the studies that have examined the effects of gamification on the related field.

2.1 EFL Learning and Teaching

The globalization of the world forces us to recognize a new linguistic reality in which one language is commonly used to bridge communication between people from different cultures. According to Mouranen and Ranta (2009), the world's need for a second and extensively utilized language is the reason why English has been recognized as the global language of the world. Hülmbauer, Böhringer & Seidlhofer (2008) claimed that language barriers between people can be negated through the effective usage of English. In Turkey's educational context, Özdemir (2006) stated that English language teaching has an immense role in the educational system, especially in secondary and higher education. Serbessa (2006) asserted that the shift from a teacher-centered to a student-centered system is essential as teachers cannot obtain the attention of the new generation. Unlike the traditional teaching methods in which students were passive learners, advancements in technology offer highly needed interaction opportunities both for teachers and students while learning or teaching a new language (Serbessa, 2006). Richards and Rodgers (2014) asserted the importance of Communicative language teaching (CLT) and divided communicative competence into three components. The first one is the principle of communication which refers to the choice of activities that allow learners to perform the language. The second component is the principle of a task in which the teacher should choose language tasks in accordance with the features utilized in it. These tasks could be explained as vocabulary or grammar games, role-plays, or simulations. The third and last component is the principle of meaningfulness. According to this principle, teachers should contextualize the tasks that they have chosen for the language class so that the

learners would be inclined to participate in the task and indirectly use the target language. According to Richards and Rodgers (2014), all the tasks featuring games, role-plays, and simulations could be utilized for language learning and evoke motivation and a positive attitude in the learner. Furthermore, Aoki (2014) suggested that podcasts and audio blogs could help students obtain and use the features of language and perform their linguistic ability in a more confident way. Mizrachi (2014) stated that as today's learners spend a great deal of their time on the internet, their concentration span is at its lowest and they are not interested in printed materials. Therefore, new ways should be explored by the teachers in order to maintain learners' motivation toward language learning. Steep-Greany (2002) suggested that teachers should utilize technological tools to their advantage, especially in classrooms so that their learners' motivation reaches a new level. Zhao and Frank (2003) asserted the need for different types of learning tools and learning management systems (LMS) in today's language classes. They have also suggested that teachers should benefit from information and communications technology (ICT) while creating these tools. As Swain (1993) and Krashen (1982) pointed out the need for comprehensible input and language production for effective language acquisition, Blake (2017) claimed that CALL (Computer Assisted Language Learning) provides learners with the necessary opportunities and a suitable environment for collaboration and interaction in language learning. Warschauer and Healey (1998) divided CALL into three phases. They referred to the first phase as the behaviouristic CALL and it lasted until the 1970s. In this phase, students only provided responses to certain drill-like exercises which are presented by the computer. The second phase was referred to as the communicative approach which lasted until the 1980s. In this phase, the focus on grammar slightly shifted to an indirect way of teaching and student output was at the center of it. In this phase, in addition to drill-like activities, there were games, text reconstruction, and paced reading activities which the computer assisted in the contextualization of the activity. The third phase which started in the 1990s, integrated all of these activities and increased the role of the learners. The aim was to make students perform the language outside of the classroom environment. In this phase, role-playing games were also introduced with the assistance of multimedia computer applications (Warschauer & Healey, 1998). Moreover, Blake (2017) pointed out the importance of autonomy in language learning, and with the help of technological tools, teachers can guide their learners to take responsibility for their learning. Little (2007) also asserted the importance of LMS (Learning Management System) and CALL for language learning as they promote the necessary atmosphere for autonomous learning. On the other hand, Şahin (2009) suggested that digital platforms

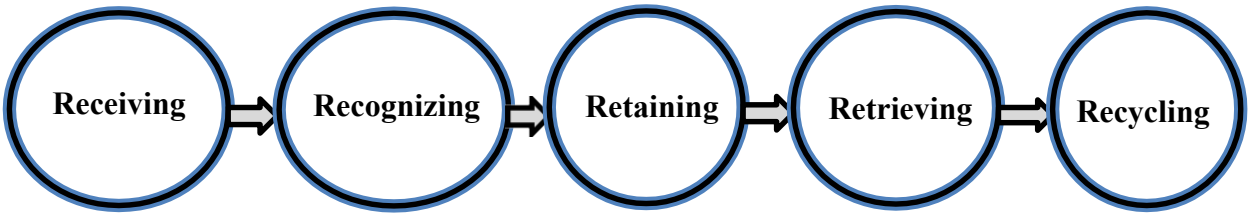
and games could be utilized as they also promote interaction opportunities and fulfill the learners' needs for pace and action in the learning environment. In addition, Sedden and Clark (2016) asserted that learning management systems and computer-assisted language learning methods are essential for students to achieve autonomy. Furthermore, they also stated that, along with these methods, games could be utilized to motivate students in the 21st century. In short, there have been many attempts to transform EFL teaching and learning over the years in order to cater to the needs of this generation's learners.

2.2 Vocabulary Learning and Teaching

In the field of English Language Teaching, there has always been more emphasis on grammar as a whole, and vocabulary learning and teaching were undervalued for a long time (Thornbury, 2000). Towards the end of the 1980s, many researchers have shown interest in vocabulary learning (Nation, 1997). From the perspective of Nation (1990), this sudden interest was caused by the realization of the importance of vocabulary. Researchers understood that without adequate vocabulary, one cannot achieve high levels of competence and performance in L2 acquisition. According to Schmitt (2000), vocabulary learning can be explained as the acquisition of new vocabulary through being exposed to certain situations in real life. McCarthy et al. (2010) supported this explanation by stating that one can obtain new vocabulary in a foreign language through "relabeling" terms in real life. The term 'comprehensible input' by Krashen (1982) once again was utilized in vocabulary learning. Krashen and Terrell (1983), asserted that in order to convey the meaning of words in a communicative environment, language learners need to be able to produce lexical items. In addition, in order to produce lexical items, language learners must be exposed to comprehensible input and only then, they could get the maximum benefit from vocabulary learning. Jiang (2004) claimed that L2 vocabulary learning is a two-dimensional process. The first dimension is described as the comprehension stage in which the learners retain the vocabulary in their vocabulary bank. However, if the second dimension is not utilized the acquired vocabulary will not be transferred to long-term memory. Therefore, the development stage in which the learner remembers the vocabulary and produces new versions of it is essential for vocabulary learning. According to Schmitt (2000), there are two types of memory. STM stands for Short-Term Memory in which the vocabulary stays for a short period and LTM stands for Long-Term Memory in which the vocabulary stays for a significant amount of time. Schmitt (2000) connected LTM with the concept of vocabulary retention and stated that without repetitive drills and activities that promote engagement, students' motivation

cannot be increased and vocabulary retention cannot occur. Moreover, Nation (2001) asserted the importance of using new vocabulary in a contextualized environment. According to Nation (2001), after understanding the meaning of the vocabulary, the learner needs to use the vocabulary in a contextualized environment so that the vocabulary could be recalled and retention could be achieved. One of the most essential vocabulary learning models was created by Brown and Payne (1994) and it was called the 5R model (see Figure 2.1). Although this model can be seen as a linear step-by-step process, it is a dynamic model that requires certain skills from learners. In the first step, the EFL learner needs to understand the form of the word through various means of learning. After that, consciously or subconsciously, the learner is expected to show efforts in recognizing it for the second time by guessing or associating it with a sound or an object. Steps three and four are to store the vocabulary and the connecting and utilize it in different contexts. Once the learner contextualizes the vocabulary the learning is achieved. However, it should be pointed out that the learner needs to utilize repetitive drills between steps three and four. Although vocabulary learning is divided into receptive and productive knowledge in the explanation of Schmitt (2000), the EFL learner does not need to follow all the steps of this model in a linear pattern as some vocabulary can be obtained from step five directly due to previous knowledge. (Shen, 2003).

Figure 2.1: 5R Model of Vocabulary Learning



Source: (Brown & Payne, 1994)

In vocabulary teaching, Schmitt (2010), highlighted the importance of student engagement as it provides learners to achieve vocabulary retention. Schmitt (2010) claimed that classroom activities should be chosen carefully by the teachers so that when activities provide student engagement, students' motivation will also increase. Hulstijn and Laufer (2001) also stated that in order for a vocabulary to transfer to long-term memory, the correct classroom activity that features interaction opportunities must be utilized by the instructors. Akar (2010) and McCarthy et al. (2010) emphasized the importance of pre-tasks in vocabulary teaching. McCarthy et al. (2010) further elaborated on this by stating that, these pre-task activities should be contextualized by the instructors

with the assistance of pictures or questions so that learners' existing knowledge could be unlocked. Schmitt (2008) pointed out that explicit teaching and incidental learning should be combined in order to get the maximized benefit from vocabulary teaching. The aim of the teachers must be to assist students to become self-sufficient learners so that their vocabulary knowledge will improve gradually as they will be exposed to new vocabulary in contextualized environments. Akar (2010) emphasized that the use of the five senses, role-playing activities, flashcards, and computer-assisted applications are essential in vocabulary teaching. Akar (2010) also categorized these techniques of vocabulary teaching into four categories and stated that instructors that aim to have a productive L2 vocabulary teaching environment should utilize these techniques. Akar (2010) referred to the use of flashcards, puzzles, and body language as visual techniques. Furthermore, poems and listening activities are listed as aural techniques. The use of role-playing, games, word lists, synonyms, antonyms, and paraphrasing was referred a to as verbal techniques. Akar (2010) stated that language instructors must ensure that verbal techniques are utilized in the classrooms. Lastly, in kinesthetic techniques, Akar (2010) emphasized the usage of the five senses and computer assisted applications and stated that these could help in the contextualization of the vocabulary which would allow students to perform the language and retain more words. Ultimately, it is undeniable that many researchers presented different perspectives for the optimized way of vocabulary learning and teaching.

2.3 Games

Throughout history, dating back as far as 3000 BC when board games were found in Egypt by archaeologists, games have had an undeniable effect on humanity, and they have had quite a significant role for people. However, trying to understand games with a systematic and formal approach is relatively contemporary. One of the first academics to endeavor this was the Austrian philosopher Ludwig Wittgenstein in 1958. According to Wittgenstein (1958), people can easily spot the difference between what is a game and what is not, however, a general definition is impossible because the word "game" includes a variety of heterogeneous activities. Luckily, this task was not as unconquerable as he believed it to be, as the other academics have been able to make progress about games ever since. Games can be defined as a set of challenges that give us rewards and inspiration that cannot be found in real life (Kapp, 2012). They also include elements such as a certain set of rules, goals, feedback, and willing participation (Berber, 2018). Many people make the mistake of identifying games with children, however, the "game instinct"

is an impulse that never goes away once the person is exposed. (Telman & Adanalı, 2009). With the arrival of technology and the internet, games are becoming increasingly common in the modern world. As a matter of fact, it can be presumed that everyone born in a developed country after the 1980s plays or has played video games. Needless to say, comprehending this multi-billion industry is vital not only for industries but also for educational institutions. Games are no longer just about entertainment; they are tools used for behavior change. As positive behavior change is at the core of education, the term "edutainment" was developed in order to define this new concept combining education and entertainment. (EduTrends, 2016). The effects of games can present themselves in real life as well. For instance, gamers can have enough motivation to repetitively perform a certain task on a daily basis or they can even wake up at unusual times just to gain some bonuses and progress in a game. However, it should be considered that even when these people stop playing games, they are able to create new strategies to cope with daily life struggles and think critically about these issues. (EduTrends, 2016). Prensky (2003) stated that games, when analyzed in a detailed way, foster certain abilities such as seeking knowledge, collaboration, and decision making. Furthermore, Prensky (2003) emphasized that engagement, competitiveness, collaboration, critical thinking, and problem solving are factors that arise in games, but they could also be key to fostering desired behaviors in an educational environment. Finally, Werbach and Hunter (2012) asserted the supportive role of games in many different scenarios. They hold that games can separate tasks into manageable pieces, encourage teamwork, and problem solving, and have a rewarding personalized experience while increasing the ability to think critically as well as reducing the fear of failure.

2.4 Gamification

The concepts of game and gamification are different from each other. Gamification is a trending term that arises interest from different research areas such as education, psychology, information and communication technologies, business, and medical science (Mora et al, 2017). Although Nick Pelling was the first person who used the term gamification in 2002, Zichermann and Cunnigham (2011) were the ones that made the term popular. Gamification can be defined as implementing game designs and mechanics in order to solve problems and promote user engagement (Zichermann & Cunningham (2011). Furthermore, Lee and Hammer (2011) defined Gamification as the result of the incorporation and usage of game mechanics, dynamics, and frameworks in order to promote desired behavior. Although there are various definitions of gamification in the

literature, the most frequent and widely accepted one belongs to Deterding et al. (2011) who stated that gamification is "the use of game design elements in non-game contexts." Deterding (2011) further elaborated that gamification is not just about entertainment as it has motivational attributes and other application areas such as health, education, and research. Moreover, in order to support his definition of gamification, Deterding et al. (2011) stated that gamification supports behavior change and user/player attraction through certain motivators. Moreover, Deterding et al. (2011) emphasized the importance of rewards, challenges, teamwork, and the element of fun while establishing gamification systems. Moreover, Hamari (2017) inspected user engagement on a website called "Sharetribe" with the introduction of gamification. After his observation, he concluded that the concept of badges motivated the users and made them more active on the website. Unlike what many people presume about gamification, the process is not about creating a game but taking the elements such as competition, challenges, and rewards in order to make the activity more engaging. The essential element is to get immediate positive feedback after a goal is accomplished so that the boredom and the passivity of the activity can be negated (Deterding et al., 2011).

Many questions were directed regarding the timing regarding the emergence of gamification. Strauss and Howe (2003) answered the question of "Why now?" in their Generational Theory as "The New Generation Gap". Generation Z is now considered the digitally native generation whereas generation X and Y are still trying to adapt to these changes in digital literacy. Although these digital natives know how to engage with the world effectively, they can also get bored and frustrated easily (McGonigal, 2011). Kapp (2012) elaborated on this by emphasizing the fact that teaching environments need to change with the implementation of gamification as the traditional teaching method will soon be irrelevant to a generation of digital natives who are born to games and these gamified conditions. Çetin (2013) stated that a whole new generation has emerged in society due to the need for entertainment in scientific, educational, and technological concepts. Birgham (2015) further explained this concept of millennial learners as people who desire immediate feedback and team-based interaction, adding that gamification is the innovative model that satisfies those requirements enhancing the context and the instruction. Students' need for personalized learning combined with immediate feedback can be satisfied with customized online gamification tools (Abrams & Walsh, 2014). Furthermore, Flores (2015) affirmed that the steps in learning are quite similar to the challenges in different stages of a game that can be conquered. Moreover, Hanus and Fox (2015) also asserted that combining game design elements with learning objectives would

get students' attention and create an effective learning environment for them. In a non-educational context, Prince (2013) gave the example of the application called "Foursquare by Swarm" in which people are trying to acquire as many points as possible and with those points, they earn the right to show their badges in their profile simply by checking in various places such as restaurants, cafes, and shopping malls and shops. As a result of that, one can become the "mayor" of that particular place when they have the most check-ins and get rewarded for the accomplishment. This example supported the power of engagement, rewards, social interaction, and satisfaction within gamification practices.

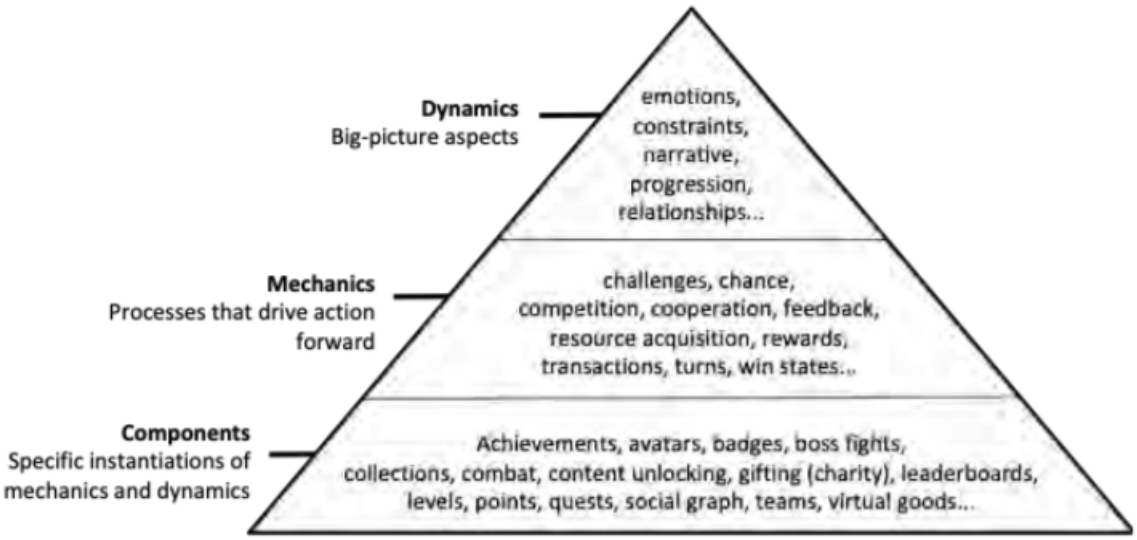
Educational systems are established on the concept of not making mistakes. Therefore, the fear of failure, embarrassment, and loss are common among students. However, mistakes can be made in games with less amount of penalty. In the worst-case scenario, they will start from the lower level. In an educational context, gamification gives the student a chance to fix their mistakes with immediate feedback resulting in an encouragement to eliminate the obstacles (Ede, 2016). Even in failure, students learn valuable lessons; more importantly, their memories got filled with entertainment (McGonigal, 2011). Finally, in order to further comprehend how to successfully establish a gamified system, relevant game design elements, and frameworks are presented below.

2.5 Game Design Elements and Frameworks

2.5.1 Game Design Elements

To further define the concept of gamification, Werbach and Hunter (2012) classified game design elements into three categories in a pyramid and stated that each game design element features fundamental elements (see Figure 2.2). Werbach and Hunter (2012) also stated that the inclusion of each game design element in a game or gamified content is essential to make the activity fun. Zichermann and Linder (2013) also pointed out the importance of innate game desire within gamers and stated that game designers should include game desire in their gamification process while utilizing this classification of game design elements.

Figure 2.2: Game Design Elements Pyramid



Source: (Werbach & Hunter, 2012)

As shown in Figure 2.2 above, Werbach and Hunter (2012) explained game dynamics as the whole theme of a game. Game dynamics consist of limitations, positive and negative emotions, and the sense of improvement within the construction of the game. Moreover, game mechanics can be described as the combination of randomness, challenges, collaborative tasks, and the element of surprise which triggers the gamers to continue playing the game (Kunduracıoglu, 2018). Werbach and Hunter (2012) stated that feedback and the state of winning in-game mechanics are essential to monitor the progression and the motivation of the students. Lastly, game components can be described as the combination of game mechanics and dynamics. Kim et al. (2017) asserted that game components are crucial in determining the tendencies of the learners and through that the instructor could make modifications to the gamified learning process. According to Zichermann and Linder (2013) points, leaderboards, levels, feedback, and achievements are essential in creating a desired gamification process.

2.5.2 The 6D Framework

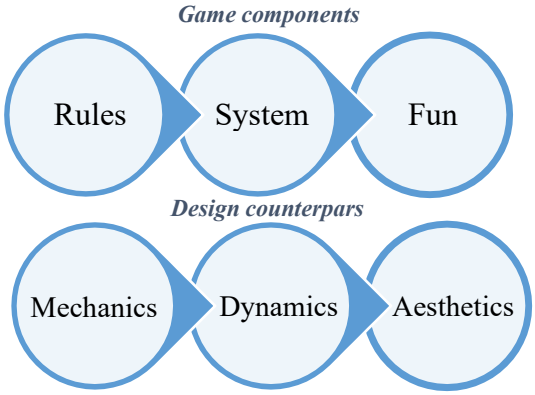
Werbach and Hunter (2012) described the gamified system in a six-step process called "The 6D Framework". In this framework, the first step is to define the business objectives, meaning that one needs to understand the purpose and the reason for the need for a gamified system. For instance, in an educational context, one needs to decide whether or not they are trying to gamify their lessons in hopes to increase academic achievement,

promote engagement, or make the student gain a new skill at the end of the process. The second step is to delineate the target behavior which shows the objectives of the gamified system along with the possibility of causing encouragement or discouragement in the player. The third step is to describe the intended players. This can be explained as the player types which can reflect the personalities of the players. Step four is to devise short-term and long-term engagement loops in which players will know the progression of the gamified system. They will also know how their engagement will be rewarded. The fifth step is to implement the element of fun. The creator of the gamified system must be sure that the gamification process has activities and tools that prompt the element of fun along with intrinsic motivation. The last step is to deploy the appropriate tools which are referred to as the last step of the gamified system in which the creator involves the dynamics and mechanics that are established according to the environment and player types. This can be further described as using leaderboards, badges, or educational tools like Quizizz and Kahoot in a classroom environment to promote competition.

2.5.3 The MDA Framework

Hunicke, LeBlanc & Zubek (2014) are considered the designer of the MDA framework in order to support and clarify the process of a gamified system (see Figure 2.3). Hunicke, LeBlanc & Zubek (2014) claimed that the MDA framework attempts to fill a gap between the technical and practical parts of gamified systems by allowing us to understand the perspectives of the player and the designer at the same time. The term “Mechanics” in this framework can be explained as the specific rules of the gamified system. Dynamics, on the other hand, are the responses of the player as a result of the mechanics. These can be considered as behavior changes, limitations, and progress. Finally, aesthetics are the emotional responses gathered from a player whether they are a sense of fun or frustration (Hunicke, LeBlanc & Zubek, 2014).

Figure 2.3: The MDA Framework



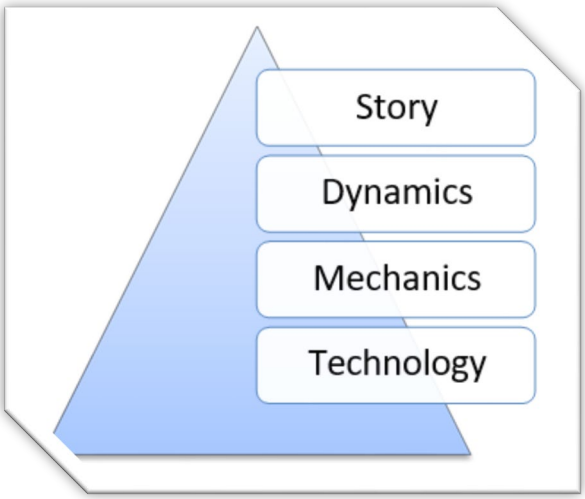
Source: (Hunicke, LeBlanc & Zubek, 2014)

Although the MDA framework has been quite relevant, it has been challenged and criticized for many reasons. Zichermann and Cunningham (2011) introduced the hierarchical order giving the utmost importance to mechanics stating that without its controlling factor, it is impossible to implement gamified systems. Werbach and Hunter (2012) elaborated on this by stating that mechanics are more concrete components of gamified systems than dynamics, allowing games to last longer. Game mechanics like challenges, competition, chances, feedback, cooperation, rewards, and state of winning are the ones that are most frequently used. Werbach and Hunter (2012) also supported the hierarchical order in this framework, but they also modified it by replacing aesthetics with components. Werbach and Hunter (2012) asserted that the components are the most concrete elements of a gamified system. According to them, components like badges, collections, unlocking content, leaderboards, levels, quests, points, avatars, and sense of achievement are among the most popular.

2.5.4 The Integrative Gamification Framework

Winn (2009) and Kim et al. (2017) introduced the concept of stories and technology into this framework. Kim et al. (2017) emphasized the importance of stories as it allows players to have intense emotions both during the activities of a game and even when they are not actively involved in it. Although technology is considered as the backbone of information and communication technology, it is not its sole purpose. With the introduction of the internet, computers, and smartphones, technology can be actively used in games (Kim et al., 2017). Kim et al., (2017) created "The Integrative Gamification Framework" by defining technology as the most concrete element of a gamified system along with the addition of stories in order to create a contextual environment (see Figure 2.4).

Figure 2.4: The Integrative Gamification Framework

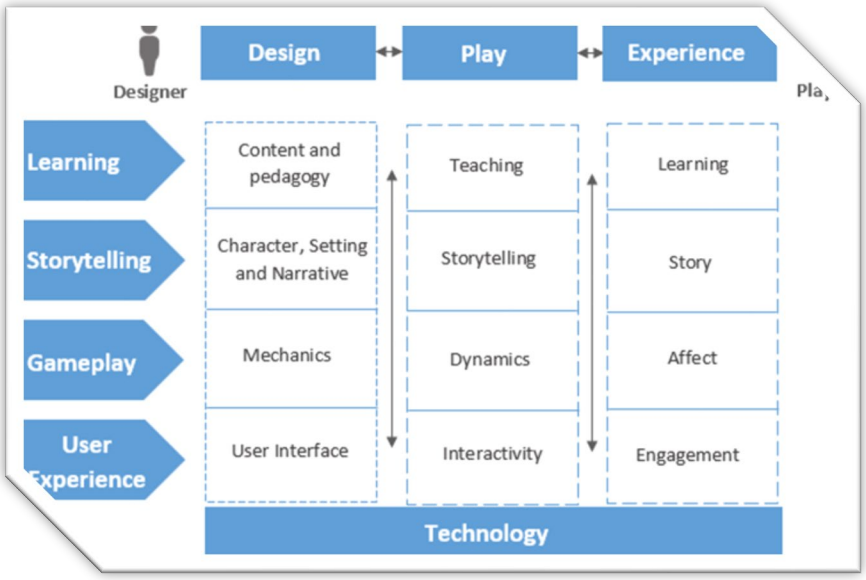


Source: (Kim et al, 2017)

2.5.5 The DPE Framework

Winn (2009) attempted to improve the MDA Framework with a similar integration to Kim et al., (2017) by introducing user experience, storytelling, and the influence of technology to his framework called Design, Play, and Experience (DPE). Although it is similar to MDA Framework, Winn (2009) claimed that DPE has a pedagogical context supported by narratives, settings, and characters of a story, therefore more adaptable and beneficial to educational purposes and experiences. The combination of storytelling, user experience, and technology in-game elements enhances the applicability of the DPE framework to the educational context (see Figure 2.5).

Figure 2.5: The DPE Framework



Source: (Winn, 2009)

2.5.6 Points, Badges, Levels and Leaderboards (PBLL)

Goals and rules are the essential elements of a game that differs from the concept of the game to the concept of play. Kapp (2012) stated that goals are what players need so that they can understand their progression. While reaching these goals, player awareness is crucial. According to Zichermann and Cunningham (2011), gaining points can be considered as one of the most essential parts of a gamified design. Werbach and Hunter (2012) further affirmed that the pointing system serves as a tool for giving feedback to the player while indicating how the player is performing in a game as well as a rewarding system. Nicholson (2015) emphasized the importance of rewards in the areas of skill mastery and encouragement. Robertson (2010) admitted the motivational factor of gaining points but also emphasized that goal achievement and storylines are crucial in the implementation of points.

As players gain points, they can level up, tasks can get more difficult and the player will have the willingness to complete more difficult tasks to get access to a higher level (Kim et al., 2017). Werbach and Hunter (2012) stated that with the implementation of the leveling process, players can have an idea of how they are doing throughout the gamification process and get instant feedback on their performance. Kapp (2012) asserted the importance of feedback as it can direct players to change their behavior and find the right clues to properly execute the task.

Badges can be defined as an indication of validation of one's accomplishment on a certain skill or interest (Grant, 2013). Werbach and Hunter (2012) argued that badges create more diversity than points as they are not limited to a number, and they are visually attractive representing the achievement of the player. Filsecker and Hickey (2014) focused on the encouraging side of the badges as they can promote appropriate and wanted behavior.

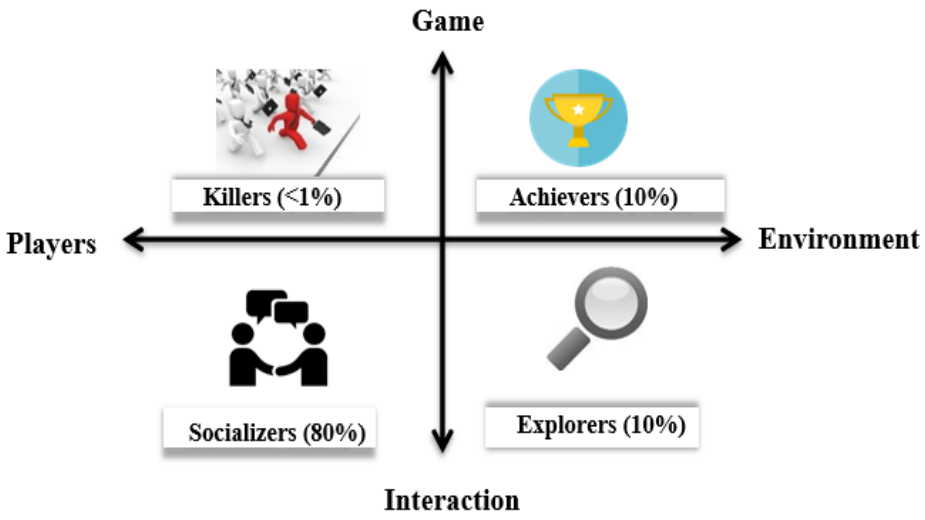
Leaderboards, on the other hand, are identified as the most functional and essential ingredient of a game design, Leaderboards indicate the player's position in a game in terms of scores. It promotes a sense of competition and fairness throughout the process (Reeves & Read, 2009). According to Werbach and Hunter (2012), the use of leaderboards comes with positive and negative sides. On one side, it can motivate players to get more points just to be placed in a higher position. However, in a situation where the player is too far from his or her goals, it can have a demotivating effect.

To sum up, the game elements and frameworks presented above have different functions and they are essential in the creation of game design in which people are able to reach goals and feel entertained during the learning process.

2.6 Player Types

Zichermann and Cunningham (2011) asserted that in gamification, game elements should be implemented in a context that appeals to different player types. As players are considered the key element of games, their expectations and motivation towards a gamified activity are not always the same. Bartle (1996) emphasized this similarity in his Test of Game Psychology and stated that there are four different types of players in a game (see Figure 2.6).

Figure 2.6: Player Types



Source:(Bartle, 1996)

1- **Killers:** Killers are considered as players who are highly competitive against other players. This player type is extremely rare (<1%) and its number one priority is to beat other players in the system as they get satisfaction from seeing other players lose. Leaderboards and levels are essential to game elements for these types of players.
2- **Achievers:** This is a player type in which the objectives are crucial. Terms like end-result and progression are key for these types of players. Their major focus is to achieve status by performing at a high level. They can easily get motivated with badges, points, and levels as they see these game elements as a priority.
3- **Explorers:** Unlike achievers and killers, this player type cares more about the discovery of the hidden treasures of a game. You can see them trying to collect a rare item, trying out different parts of a game as they get pleasure from discovering new parts. Interaction with other players is not a priority for these types of players.
4- **Socializers:** This player type values interaction between players and their number one priority is to socialize. For them, it is not about wins and losses, it is about having a good time. Concepts like cooperation, collaboration, and feedback are valuable to

them as they have sharing tendencies in a game environment.

All in all, player types and their needs should be considered to achieve pedagogically effective gamification designs (Folmar, 2015).

2.7 Game-Based Learning

Although game-based learning and gamification have a common entertainment purpose, they are vastly distinct in terms of structure and characteristics (Karataş, 2014). Game-based learning can be defined as instruction through the use of games that are ready with all their dynamics and mechanics. For instance, the use of the game called "Minecraft" in an ICT lesson or using "Angry Birds" to practice inclination in physics is the implementation of the game itself to solve a specific problem (Güntepe & Usta, 2016). Some researchers fall into this misconception and present their results as research on gamification while the study itself is about game-based learning.

Simoes, Redondo and Vilas (2013) further elaborated on how gamification and game-based learning are distinct from each other and work differently in a learning environment. Gamification, as an educational approach, harvests the essential game components in order to increase the level of motivation and engagement among students. Unlike gamification, in game-based learning student engagement is short-lived as the players/learners lose interest in a game that they have already completed or mastered. However, in gamification, the duration of time can be extended (Simoes, Redondo & Vilas, 2013). McGonigal (2011) pointed out that educational games are a temporary solution as there is a significant engagement gap along with a lack of lasting difference and by being short-lived, they do not meet the needs of the educational system, which further supported the claim of Zichermann (2010) that game industry had not produced many successful educational games. Both McGonigal (2011) and Zichermann (2010) supported Prensky (2001) claiming that the implementation of gamification promotes student engagement from beginning to end. Furthermore, Kulpa (2017) stated that with the addition of game elements, gamification makes the process of learning more attractive to students as it increases their willingness to complete challenging tasks in a classroom environment.

2.8 Gamification and Motivation

Lee and Hammer (2011) pointed out that the lack of motivation and engagement of students is one of the main issues that teachers are currently facing. Therefore, to enhance the learning environment, understanding motivation is a crucial task.

Dörnyei and Otto (1998) defined motivation as a need that energizes goal-oriented behavior by activating desire and want. Deterding (2011) claimed that gamification fulfills students' psychological needs and improves their motivation while increasing student engagement and academic achievement. Jovanovic and Matejevic (2014) also made a similar connection between success and motivation stating that gamification fosters a positive impact on the learners' motivation and success in a learning environment.

Motivation is divided into two different types: intrinsic and extrinsic. The intrinsic motivation which is also known as autonomous motivation is considered as someone's willing participation in an activity that offers personal satisfaction in return. On the other hand, extrinsic motivation (controlled motivation) occurs when the person has certain expectations such as money, reputation, or materialistic reward after the completion of the activity. (Ryan & Deci, 2000). As it can be understood from the definitions, intrinsic motivation focuses on the process whereas extrinsic motivation has an end-result expectation usually in the form of materialism.

The literature on gamification and motivation in an educational context shows the effectiveness and there are several studies conducted to understand these motivational effects. Kaufmann (2018) used gamification to his advantage when he did not have the necessary motivation to complete his Ph.D. thesis. With the help of the applications called "Habitica" and "Swipes", he listed his tasks that need completion along with the rewards so that he could finish before the determined deadline. He asserted that gamification in education can attract students to complete their short-term goals resulting in long-term benefits.

Cheong, Filippou and Cheong (2018) observed university students in an educationally gamified environment in order to comprehend the perception of the students. At the end of the study, students expressed that with the implementation of gamification, they were more motivated, and the classes were easier and more enjoyable to understand.

Considering the effects of gamification tools such as ClassDojo and ClassBadges, Gomes, Seixas and Filho (2016) observed 61 elementary school students in an English Language Teaching environment. The results of this study indicated that with the introduction of badges, students become more motivated and active in the classroom environment to earn

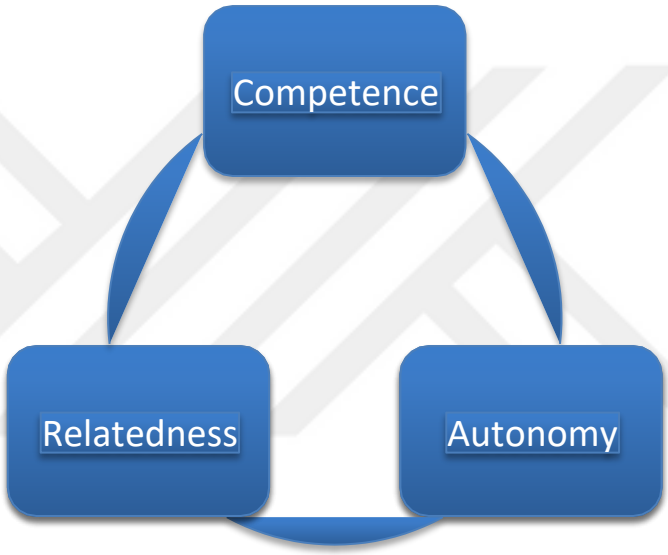
new badges. Hanus and Fox (2015) observed 80 university students to examine whether gamification had any motivational effects. In the study, it was observed that the implementation of leaderboards and achievement badges allowed experimental group students to be more motivated toward the lessons. However, Hanus and Fox (2015) gave the example of a "double-edged sword" in order to show that the motivation could be short-lived as some of the students demonstrated lower levels of academic achievement towards the end of the treatment. They also asserted that gamification treatments should be constantly updated to avoid this predicament. Cozar-Gutierrez and Saez-Lopez (2016) observed 89 master's level students to examine the effects of gamification on their academic achievement and motivation. In the treatment, various rewards, challenges, and levels were utilized. At the end of the study, students who got the gamified treatment demonstrated higher levels of academic achievement and motivation toward the lessons. Lastly, Dominquez et al. (2013) conducted a study among 123 university students to analyze the effects of gamification on students' motivation. The study revealed that although students had a positive outcome in terms of their homework and classwork scores, their level of engagement and motivation did not demonstrate a significant difference. The main reason for explaining this finding was that students in the experimental group did not enjoy competing with their peers for achievement badges and their place on the leaderboards. To further comprehend the emergence of motivation, the related theories, frameworks, and models are presented and explained below.

2.8.1 Self-determination Theory

This theory was put forth by Deci and Ryan (1985) and it focuses on human motivation and the basic psychological needs of people. It claims that autonomy, competence, and relatedness are what people need to evoke intrinsic motivation (see Figure 2.7). Autonomy can be described as someone's ability to make their own choices and control their own behavior. Kim et al. (2017) emphasized the importance of autonomy and stated that it is what educational environments need to guide students in the right way by making them their own decision-makers. Competence is defined as a person's need to feel mastery by achieving tasks and overcoming challenges (Kapp, 2012). Kim et al. (2017) suggested that scaffolding techniques must be used so that students can find their own solutions and not lose their competence in the process. Relatedness is described as the universal desire to have interactions with other people such as friends, family, or a certain group (Werbach & Hunter, 2012). Ferlazzo (2015) also added relevance to this theory as a key concept to promote intrinsic motivation. Pink (2009) further elaborated

on this theory by introducing the concept of drive, purpose, and mastery. Pink (2009) also stated that people have a constant need to progress, feel important, and be part of a bigger ideal, which is the core reason for playing video games, therefore this need is considered to be the key to the emergence of intrinsic motivation. Berber (2018), Przybylski, Rigby and Ryan (2010) asserted that people's needs of being rewarded, overcome gradual challenges, and the sensation of winning are satisfied in games, and this is the reason why people are attracted to them and can be used in an educational context.

Figure 2.7: Self-determination Theory



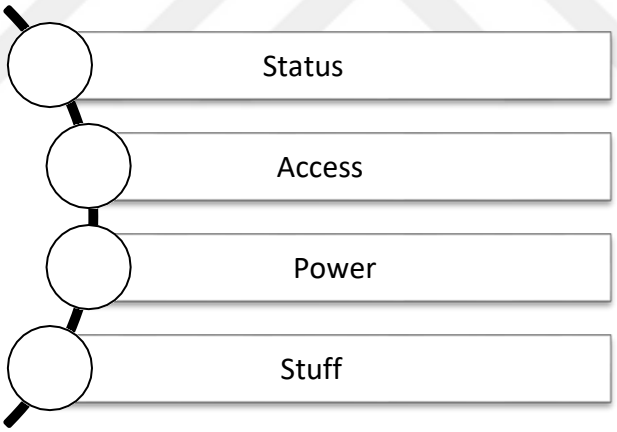
(Source: Deci & Ryan, 1985)

2.8.2 The SAPS Framework

As gamification relies on motivation, it can be stated that rewards are one of the most essential concepts to motivate students. Ede (2016) claimed that students are not very interested in activities that do not offer rewards. Ede (2016) also asserted that while rewarding students, instructors ought to choose rewards that are elating rather than psychical ones so that the motivation can be intrinsic and have long-term lasting effects. SAPS Framework is a structural hierarchy of rewards, and it stands for Status, Access, Power and Stuff (Zichermann & Cunningham, 2011). Status stands for someone's position in a social community. It is not materialistic as the idea of visibility by others is at the core of it. In a pedagogical context, badges and leaderboards can be considered as an indicator of status. As an example, a teacher can reward a student by asking for moderation in a school debate which would make this student feel a certain status among others. Access, on the other hand, is a unique privilege that cannot be obtained by many

people. Meeting a band in backstage, using an area specified for another work group such as teachers can be considered as access rewards. Similar to status rewards, they are not materialistic, and their value comes from the uniqueness of the situation. Power rewards are about executive control so that others will see this as an example, and some will have the willingness to achieve certain tasks to obtain that reward. Being the Student Representative can be considered as an example of this type of reward. Finally, Stuff is at the bottom of this hierarchical order of the rewarding process (see Figure 2.8). It is considered as a minor desire and has short-term effects; therefore, they represent extrinsic motivation. Yilmaz (2018) suggested that in gamification, rewards should not hold monetary value and in order for the reward to be effective, it should be symbolic like a badge representing a specific achievement that would promote intrinsic motivation. Lastly, according to Berber (2018), SAPS Framework must be considered while introducing rewards in a gamified context as the "wrong reward" could make the students lose their motivation just as the "right one" can make an everlasting effect.

Figure 2.8: The SAPS Framework



(Source: Zichermann & Cunningham, 2011)

2.8.3 Goal-Setting Theory

This is a goal-oriented theory put forth by Locke and Latham (1990) to foster high performance and task motivation. According to Locke and Latham (1990), clear goals had to be determined and actions need to be taken accordingly in order to be successful. If the goal is vague and it is not possible to measure, motivation cannot be achieved. The usage of the SMART mnemonic could be considered as a useful method to achieve these goals that can foster motivation toward the task (Locke & Latham, 1990). The acronym SMART represents Specific, Measurable, Achievable, Realistic goals that are anchored

within a Time Frame. According to this theory, specific goals enabled players to reach a higher level of performance since people can have more commitment towards a goal considering the difficulty of a task. Furthermore, feedback is an essential part of this theory. Feedback can be used to track one's progress while trying to complete a task. According to Landers et al. (2015), along with immediate feedback, Goal-Setting Theory can be established through the implementation of various game design elements. To achieve this implementation, points, progression bars, levels, and badges can be considered as crucial game elements which can help with task completion and foster motivation in learning.

2.8.4 ARCS Model

The ARCS motivation model was put forward by Keller (1987). The acronym ARCS represents attention (A), relevance (R), confidence (C), and satisfaction (S). According to the ARCS Model, in order to create the perceived attitude and foster motivation, four dimensions should be included in the educational process (Keller, 1987). The most essential element of this model is attention which suggests sustaining students' attention throughout the learning experience (see Figure 2.9). Keller (1987) suggested the introduction of real-world examples as they can create an anchoring point for students and ease the learning experience and enhance their motivation. Secondly, relevance is presented as the content needs to guide students in understanding the purpose of the course. Keller (1987) suggested that by showing the usefulness of the activity, students can understand that this knowledge will be important to them. Thirdly, confidence is a considerable factor in the ARCS model since teachers must provide immediate feedback to students in order to gauge their progress and make them believe that they are capable of completing this task (Keller, 1987). Lastly, satisfaction will occur when the other three dimensions are included. This, in return, will provide extrinsic or intrinsic motivation depending on the task and a positive attitude towards the learning environment (Keller, 2004).

Figure 2.9: ARCS Model

(Source: Keller, 1987)

To sum up, the theories presented above are crucial in maintaining a positive learning environment enhanced by the implementation of gamification in order to foster intrinsic motivation and positive perception from students.

2.9 Gamification and Attitude

Attitude is a concept that is often ignored in the area of education and academic achievement. According to Smith (1971), attitude is a set of beliefs affecting one's response and manner towards a specific situation or an object. Attitude is a concept that can be learned and therefore can be taught. On the other hand, because it can be learned, one can also unlearn attitude (Smith, 1971). For example, as no student was born liking or disliking second language learning, if a student has a positive attitude towards language learning, he or she will have a better time at school as the attitude is highly influenced by the situation itself.

Although the terms motivation and attitude are close in literature, a distinction must be made. While attitude is a combination of beliefs, motivation is the reason for the execution of the task (Oroujlou & Vahedi, 2011). For instance, a student can have a positive attitude towards his or her English teacher or even the culture itself, therefore this person can be motivated to learn the language. In an educational context, Hamari, Sarsa and Koivisto (2014) elaborated on the concept of motivation and attitude by stating that the majority of gamification implementations have a positive effect on students' motivation, academic achievement, and attitude toward lessons. Bunchball (2010)

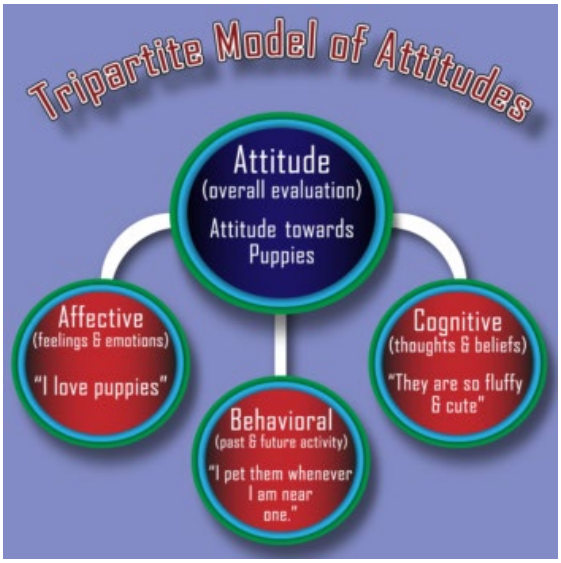
asserted that due to having game design elements, a gamified way of teaching is a key determiner in creating an effective learning environment due to fostering necessary motivation and positive attitude among students. Barata et al. (2013) conducted a 5-year study among 242 college-level engineering students to examine how gamification affected their academic achievement and attitude toward the courses. The results of the study were very encouraging as they showed that students who got the gamified treatment demonstrated a significant increase in their task engagement than the non-gamified group. Due to their developed proactive behavior, they were more interested in the subjects in comparison to other courses. O'Donovan, Gain and Marais (2013) examined the effects of gamification on attitudinal behavior. The study consisted of 44 university students, and it focused on their problem-solving skills, content understanding, lecture attendance, and engagement. Through the successful implementation of gamification with points, achievement badges, and progression bars, the researchers observed a significant increase in students' attitudinal behavior towards the courses in terms of problem-solving, content understanding, attendance, and engagement. In the study of De-Marcos et al. (2014), 371 university students were observed to examine the effects of gamification on students' academic achievement and attitude. The results of the study indicated that achievement badges and leaderboards significantly improved students' attitudinal behavior toward the lesson. However, no significant difference was found in their academic achievement as the study group that was exposed to the traditional methods of teaching demonstrated higher academic achievement. De-Marcos et al. (2014) elaborated on this result by stating that although gamification helped students to gain valuable in-class skills, this caused academic achievement not to become a priority for the students. Furthermore, Mekler et al. (2013) conducted a study among 295 university students on the effects of gamification on students' academic achievement, competence, autonomy, and attitude. In this study, gamified treatment with badges and leaderboards significantly improved students' academic achievement. On the other hand, this gamified treatment did not show any difference in students' autonomy, competence, and attitude toward the lessons. Lastly, Karamert and Kuyumcu Vardar (2021) conducted a study to examine the effects of gamification on mathematics learners' achievement and attitudes. In their study, 46 students were divided into control and experimental groups. As a result of the study, a significant difference was observed in the experimental group students' achievement. However, no differences were observed in their attitudinal behavior toward the mathematics lessons. To further understand fostering positive attitudinal behavior from students, the related theories and models are presented and

explained below.

2.9.1 The ABC Model of Attitude

ABC Model of Attitude was put forth by Ostrom (1969) and the name stands for the Affective, Behavioral, and Cognitive components of attitude management. Ostrom (1969) stated that he agreed with the theoretical importance of classifying attitudinal behavior responses. This classification was originally proposed by Rosenberg and Havland (1960). Taking this into consideration, Ostrom (1969) came up with the ABC Model of Attitude also known as Tripartite Model. According to this model, attitude consists of three components named affect, behavior, and cognition (see Figure 2.10). Unlike previous studies, in the ABC model, Ostrom (1969) stated that some attitudes do not contain all three of these components. In this model, A stands for affect and it can be explained as emotions and feelings towards an idea, a person, or an object. Liking, loving or hating, English lessons could be considered as an example of affect. B stands for the behavioral component of attitude. This could be explained as the actions taken as a result of the thoughts or feelings. For instance, because a student likes the gamified English lesson, he or she can choose to attend or participate regularly. Lastly, C stands for cognition which could be explained as certain beliefs towards an attitude. For instance, a student who sees other classes having gamified English lessons can think that these lessons are quite enjoyable and full of fun. Rosenberg and Havland (1960) asserted that to fully comprehend a person's attitude, prioritization needs to be made among the affect, behavior, and cognition components.

Figure 2.10: The ABC Model

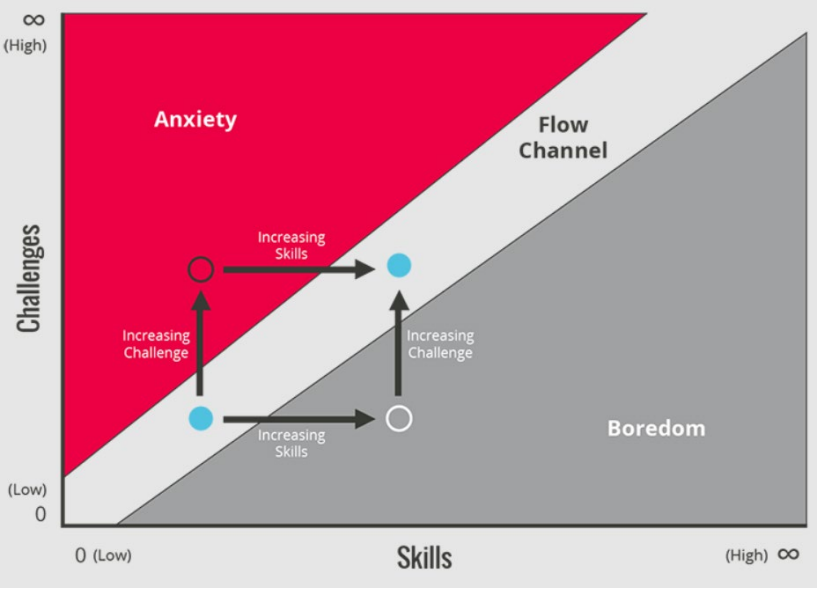


(Source: Stangor, 2015)

2.9.2 Flow Theory

Flow can be explained as a certain situation in which the person is fully immersed in any activity disregarding external factors. It is considered as an important factor in order to create positive attitudinal behavior and player engagement (Csikszentmihalyi, 2014). This theory is an attempt to explain the joy taken from playing games. According to this theory, there has to be a balance between the difficulty of the task and the skill mastery of it. Therefore, if the activity is too easy, the player feels boredom and stops the act of playing whereas when the activity is too challenging, the player feels anxious. The concept of flow occurs when the balance is achieved (Csikszentmihalyi, 2014). Loss sense of time is also another crucial aspect of the Flow Theory. For instance, when a student does not want to get involved with the process of learning or felt obligated to be in the learning environment, the concept of time slows down whereas an activity such as going to the gym or playing video games can ignite the concept of flow. As a result, the sense of time can have an accelerated feeling. Csikszentmihalyi (2014) connected this issue to attitudinal and motivational reasons. Kim (2014) suggested that in a gamified context, the gradually increasing level of the learning tasks can enhance the learner's experience and skill as the only way to maximize the effects of learning is through the careful establishment of tasks that require the highest level of performance possible in consideration with the learner's ability. This theory has crucial importance in implementing gamification methods in an educational context. Figure 2.11 below shows the essential level of flow created to have maximized attitudinal and motivational behavior from players who are involved in the activity (see Figure 2.11).

Figure 2.11: Flow Theory



(Source: Csikszentmihalyi, 2014)

2.10 Criticisms of Gamification in Education

When the literature was reviewed, over-justification was seen as the main criticism of gamification (Zichermann, 2011). Zichermann (2011) pointed out that the removal of extrinsic motivators such as materialistic rewards can extinguish an intrinsic motivation due to being accustomed to the presence of the motivator. Zichermann (2011) claimed that neglecting intrinsic motivators can cause shallowness in the gamified experience. Furthermore, a fine balance of extrinsic and intrinsic motivators must be found which would make the implementation of gamification even more effective with sustained and desired engagement loops.

Another criticism of Gamification is the possible emergence of compulsive behavior. According to Zichermann (2011), compulsive behavior can be triggered by the concept of "pointsification" in which the player is addicted to collecting every single point rather than the learning experience itself which then can result in ineffective learning environments. Zichermann (2011) suggested implementing limitations to the concepts and rewards in order to avoid this unwanted circumstance.

Dominquez et al. (2013) emphasized the controlling effect and the possibility of discouragement by the implementation of leaderboards in gamified contexts as some learners/players do not have any desire to compete or see their names ranked. As this can cause a negative change in attitude and motivation, they suggested that the introduction of less competitive options as a reward can be considered.

Loss of performance is also a significant criticism of gamification. De-Marcos et al. (2014) reported that some students did not like to get penalized during a gamified activity which results in impacting their performance in a negative way. Furthermore, Campos et al. (2015) also reported that the complexity of the rules caused anxiety in learners and negatively impacted their performance as they were unable to understand the rules of gamified experience.

2.11 Gamification and Language Learning

With the digitalization of the world and the advancements in technology, gamification, and second language learning had become a subject of discussion. Although there were studies regarding the effects of gamification in learning, the same cannot be said for the studies examining the effects of gamification in second language learning. Lee and Hammer (2011) emphasized the importance of a heightened sense of attention, interest, and motivation when gamification activities are introduced in learning environments. Wright et al. (2012) stated that gamification should not be used as a "time filler" in

language lessons. Instead, gamification should be integrated into the language learning process which would make the whole experience more effective. According to Aydın (2014), gamification allows students to be more relaxed in the learning environment. When the students are free from the anxiety of making mistakes, language learning occurs subconsciously during the gamification activities along with high engagement and element of fun. Furthermore, Brull and Finlayson (2016) claimed that gamification is a powerful tool that allows language learners to control the pace of their learning process. The combination of technology and gamification creates effective language learning environments full of purposeful activities that make learners use the language efficiently. (Gömleksiz, 2005). Perry (2015) examined the effects of gamification in learning French as a second language. In the gamification treatment, Perry (2015) utilized quests and challenges along with incorporating augmented reality. As a result of this study, students showed high levels of motivation toward the lessons, thus they performed significantly better in the French language classes. In another study conducted in Bangladesh, Rafi (2021) investigated the effect of gamification on students' ability to learn English as a second language. In the study, Kahoot was used as a gamification tool, and it was found that students felt more autonomous while completing grammatical tasks and they were more engaged in the language lessons than in the traditional methods of teaching. Furthermore, Xin (2015) aimed to find out the effects of gamification on students' ability to learn Mandarin. He developed a gamification tool called "Chingual" which contained listening, writing, pronunciation, and speaking activities in a gamified way. As a result of this study, Xin (2015) found out that gamification elements such as points and leaderboards combined with visual materials and the user-friendly interface of the application allowed students to learn Mandarin more effectively. Finally, Juntunen (2019) examined the effects of gamification on the language competence of the students. In the study, she used "Duolingo" as a gamification tool. The results indicated that although the gamified elements in "Duolingo" facilitated high levels of engagement, critical thinking, and problem-solving skills among students, it was not effective enough to create a learning environment on its own. Instead, the researcher offered to use this application as a supporting tool in the language lessons.

2.12 Gamification and Vocabulary Learning

Vocabulary is a crucial part of language learning and one cannot achieve mastery of a language without an appropriate range of vocabulary. Gamification could offer an innovative way to acquire vocabulary since it is usually thought of as a difficult and boring activity. Wilkins (1972) asserted that although one still can perform to a certain extent within the limitations of a language without grammar knowledge, showing performance within the language is impossible without vocabulary knowledge. Richards et al. (2008) further emphasized the importance of vocabulary acquisition by identifying it as essential for grammar achievement. Nation (2001) claimed that vocabulary knowledge and linguistic achievement cannot be thought of separately. Throughout the years, the most common perception toward vocabulary learning relied on traditional methods of teaching through memorizing long lists of vocabulary or giving the L1 definitions of them. It was often observed that these methods create a short-term learning effect which is not ideal when it comes to English language teaching. According to Bakar and Nosratirad (2013), the only way to be more proficient in a language is through acquiring more vocabulary. Therefore, gamification emerged as a key element in creating effective learning environments that meet learners' expectations (Jung & Graf, 2008). Furthermore, Kingsley and Hagen (2018) reported that using game elements such as achievement badges, quests, challenges, points, progression bars, and avatars in vocabulary lessons results in a more effective learning atmosphere in which students are more determined to increase their vocabulary acquisition. In their study, Kingsley and Hagen (2018) used quest cards, challenges, progression bars, and levels to promote better vocabulary learning. As a result of the study, it was found that these gamification elements allowed students to be more in control of their vocabulary learning while achieving the necessary mastery through clearly established goals. Glowacki, Kruikova and Avshenyuk (2018) conducted a study comparing achievement and motivation in second language learning. They divided students into control and experimental groups. The class was an English for Specific Purposes (ESP) class and Kahoot was used as a game design element. 21 students were placed into the control group whereas 22 students were placed in the experimental group. The study showed that the students in the experimental group who experienced Kahoot in their lessons had an improved vocabulary knowledge along with the emergence of intrinsic motivation toward the lesson. Alemi (2010) examined the effects of gamified elements presented in games on students' vocabulary learning. This study consisted of 60 students divided into control and experimental groups. At the end of the study, it was reported that experimental group students had learned more vocabulary and showed

higher vocabulary retention rates than the control group students with the help of gamified elements. In another study conducted by Mert and Samur (2018), the implementation of points, levels, leaderboards, and badges as game design elements in vocabulary lessons made students more eager to learn due to having self-satisfaction and being more successful because they were able to get instant feedback regarding their progression. Kayseroğlu and Samur (2018) conducted a similar study and found that the element of competition in gamification allows students to motivate themselves toward vocabulary learning. In their study, they used "QuizGame" as a gamification tool. The results indicated that through the implementation of this gamification tool, students were not apprehensive toward making mistakes and they were learning better through immediate feedback. Young and Wang (2014) focused on the ability of vocabulary retention when gamification is involved. According to their findings, gamification allowed experimental group students to be less anxious in the speaking lessons while the students in the control group performed better when it comes to remembering the vocabulary. Furthermore, Huyen and Nga (2003) focused on the role of gamification in Vietnamese students' vocabulary learning. According to the perception of the students, traditional methods of teaching did not provide adequate opportunities to learn new vocabulary as it only relies on memorization. As a result of the study, not only gamification created a relaxed and effective learning environment for the students, but also it allowed them to get better at learning and using new vocabulary. Taylor and Reynolds (2018) also focused on vocabulary retention through a treatment that involved "Kahoot" as a gamification tool. In this study, 51 university students were divided into control and experimental groups. After the gamified treatment, it was found that the use of "Kahoot" as a gamification tool improved the vocabulary retention of the experimental group students while establishing a more effective learning environment. Moreover, Karaaslan et al. (2018) created an online learning platform that featured gamified elements. In their 8-week study, the focus was to enhance vocabulary learning and retention. At the end of the study, it was found that gamification tools within the online learning platform allowed them to learn and remember vocabulary while maintaining a high level of motivation. Finally, the study of Abrams and Walsh (2014) showed that the game elements and the contextualized environment in their educational website allowed the experimental group students to perform significantly better in vocabulary retention and acquisition than the control group students proving the positive effects of gamification in vocabulary achievement.

To sum up, when the relevant literature is considered, a conclusion can be made that although there are criticisms against the concept of gamification, the general consensus

regarding the effects on the perception and the motivation of students can be considered as positive. However, review of the literature shows that more studies within the educational context need to be conducted in the national arena. The literature shows that many studies related to gamification and language learning are limited to being connected with motivational behavior. More studies need to be conducted not only to investigate the connection between motivational behavior and gamification, but also attitudinal behavior needs to be taken into account. Furthermore, there is a clear gap that needs to be filled in the area of game components and elements used in the gamification treatment. Many of the studies focus on a limited number of game mechanics and dynamics, which calls for a study with a wider range of game design elements. To draw meaningful connections between gamification and vocabulary learning, differentiated gamification treatments with varieties of game components and elements need to be utilized. Moreover, the connection to attitudinal and motivational behavior needs to be investigated with a widened scope of gamification treatment. Therefore, this study aims to discover the differences in second language learners' motivation, attitude, and vocabulary achievement when elements of gamification are implemented. The next chapter will provide information about the methodology of this thesis.

CHAPTER III
METHODOLOGY

This chapter of the study presents information about the research design, setting, and participants, data collection instruments, and data collection procedures as well as an overview of the data analysis. As this thesis attempted to analyze the effects of differentiated gamification treatments on middle school student attitudes, motivation, and vocabulary achievement, the following research questions are taken into consideration.

Research Questions

RQ1: Does gamification have any effects on learners' vocabulary achievement?

RQ2: Do design features of gamification have any effects on learners' vocabulary achievement?

RQ3: What are the EFL learners' perceptions towards the differentiated gamification treatments in terms of their academic achievement, motivation and attitudes?

3.1. The Research Design

This study applied a mixed-method research design that collects, analyzes, and interprets both quantitative and qualitative data in a single study. As it can be seen in Table 3-1 below, quantitative data can be explained as a numeric value that can be obtained from instruments like tests, questionnaires, closed-ended observations, and interviews whereas qualitative data can be obtained from observations, journals/diaries and interview techniques (Creswell, 2002). Comprising the numeric data of the quantitative research, vocabulary achievement tests were used in a pre-test, and post-test format whereas forming the qualitative dimension of the study, the semi-structured interview method was adopted (see Table 3.1).

Table 3.1: Differences between Quantitative and qualitative research

Quantitative Research		**Qualitative Research**	
Methods of Data Collection	Data	Methods of Data Collection	Data
Instruments (e.g., questionnaire, closed-ended interview, closed-ended observation)	Numeric scores	Open-ended interviews	Text data from transcribed interviews
Documents (e.g., census, attendance records)	Numeric scores	Open-ended questions on questionnaires	Text data transcribed from questionnaires
		Visual materials	Image data from pictures, photography, or audiotapes

(Source: Creswell, 2002)

The researcher opted for a quasi-experimental study as he could not establish groups in a random or planned way (Creswell, 2002). In this study's case, 8th grade students from English classes were pre-determined since the beginning of the academic year. These students were divided into control group and experimental groups. During the process of this study, the control group did not get any gamified treatment whereas the experimental groups had gamified treatment with differentiated game design elements. Table 3.2 below illustrates the prerequisites of the quasi-experimental design.

Table 3.2: Quasi-experimental Design

Quasi-Experimental Designs

Pre- and Post-test Design → Time

Select Control Group	Pre-test	No Treatment	Post-test
Select Experimental Group / Groups	Pre-test	Experimental Treatment	Post-test

(Source: Creswell, 2002)

Creswell (2013) stated that, for this research design to succeed, the researcher should apply the treatment only to the experimental groups while teaching the control group in a traditional way. As just one method cannot provide adequacy to a study, the researcher collected data from a variety of different instruments in order to enhance the depth of the analysis. This is called triangulation. "Triangulation involves using multiple research techniques and multiple sources of data in order to explore the issues from all feasible

perspectives. Using the technique of triangulation can aid in credibility, transferability confirmability, and dependability" (Mackey & Gass, 2005). The combination of these qualitative and quantitative elements provided the much-needed depth of understanding and triangulation of data while understanding the effects of gamification on middle school student vocabulary achievement, motivation, and attitudes. Table 3.3 shows the design of the study for collecting quantitative data.

Table 3.3: The Research Design of the Study

Groups	Pre-test Stage	Treatment	Post Test Stage
Con	O_1	X_1	O_1
E_{X-1}	O_1	X_2	$O_1 + O_2 + O_3$
E_{X-1}	O_1	X_3	$O_1 + O_2 + O_3$

Con: Control Group

E_{X-1}: Experimental Group – 1

E_{X-2}: Experimental Group – 2

X_1: Non-Gamified Instruction

X_2: Gamified Instruction

X_3: Gamified Instruction with Achievement Badges, Rewards and Leaderboards

O_1: Vocabulary Achievement Test (VAT)

O_2: Semi-Structured Interview

O_3: Perceived Motivation Questionnaire and Attitude Scale

The variables of this study are academic achievement, motivation and attitude. Within this framework, pre-test and post-vocabulary achievement test was conducted for both the control group and the experimental groups in order to analyze students' contextualized vocabulary learning in English lessons. After the differentiated gamification treatments, the researcher chose to look at the data regarding the motivation and the attitude of the students. Therefore, semi-structured interviews were utilized for that purpose. Ten students from each experimental group of the study participated in the semi-structured

interviews allowing the researcher to obtain valuable information with the carefully constructed questions. In addition to the data collected via semi-structured interviews, the researcher wanted to strengthen the results regarding the motivation and attitude of the students via utilizing the perceived motivation questionnaire and attitude scale. This quantitative data was collected at the post-test stage as complementary data to further support the qualitative side of the study and see the motivation and attitude levels of the both experimental group students at a wider scale.

3.2 Participants and Setting

The participants of this study were composed of sixty 8th grade students from a private school in Turkey. The ages of the students ranged from 13 to 14. Two experimental groups and one control group were chosen as the study groups. Of sixty participant students, twenty formed the Control group while the remaining forty students formed the Experimental group – 1 and Experimental group – 2. Moreover, the researcher interviewed ten students from each experimental group on a voluntary basis.

There were various differences regarding the gamified treatment of the experimental group – 1 and experimental group – 2. Although both groups received a gamified treatment through educational applications that featured effective game design elements, the experimental group – 2 received an enhanced gamification treatment adding weekly leaderboards and achievement badges offering unique and non-materialistic rewards.

In order to create an unbiased and reliable research environment, students were not informed about the formation of the groups. Below, you could find the gender distribution of the participants (see Table 3.4).

Table 3.4: Gender Distribution of the Study

Control Group		**Experimental Group - 1**	**Experimental Group - 2**
Gender	n	n	n
Male	11	9	10
Female	9	11	10
Total	20	20	20

The school where the research was conducted provides intense English lessons throughout the academic year. The main focus of these lessons was on listening, speaking, and reading skills. The school's program employs the Common European Framework of Reference (CEFR). As there was a mixed design in student placement, the classes were not determined according to the level of the students. In terms of language proficiency, the students in each group had an average language level of B2. Due to the students being trained for the high school entrance exam, their aptitude, motivation, and attitude levels toward language were mostly similar. At the beginning of the academic year, a grade 8 baseline assessment was administered so that all students are placed in their classrooms in a mixed design while their language proficiency is being taken into account. Moreover, throughout the implementation of the English lessons, the researcher tried to increase students' motivation on remembering the content of the class reader and completing their vocabulary homework, and classwork tasks on a weekly basis so that all the students would join the research project wholeheartedly.

The English lessons were implemented 5 hours a week in the respective classes. Each class had the necessary technological requirements such as projectors and smart boards. Therefore, the setting of this study can be considered as convenient to carry out differentiated gamified treatments and non-gamified traditional lessons.

3.3 Data Collection Instruments

The instruments for data collection were determined in regard with the research questions of this study. Vocabulary achievement tests in the pre and post-test stages and semi-structured interviews were used as the means for data collection forming the qualitative and quantitative side of the study. The purpose of using a range of data-gathering devices is to reinforce the results and achieve data triangulation which is quite valuable to take a broader view regarding the issue at hand.

Both prior to and after the gamified and non-gamified lessons, students' ability to remember the content and understand the target vocabulary were measured using a vocabulary achievement test in pre-test and post-test format. In addition to knowledge tests, ten volunteer students from each experimental group were interviewed in semi-structured interviews. In order to complement the qualitative side of the study and see the motivation and attitude levels of all the students in the experimental groups, the perceived motivation questionnaire and attitude scale were administered to the experimental groups after the differentiated gamification treatments.

In the following sections, the pre-test, and post-test stage vocabulary achievement tests (VAT), the structure of the semi-structured interview, and the content of the complementary motivation and attitude scale are described in depth.

3.3.1 Vocabulary Achievement Test (VAT)

The use of pre-test and post-test allows for the comparison of the mean change between different study groups because pre-test data is gathered before the treatment whereas the post-test data is presented after the treatment (Creswell, 2002). Therefore, in order to collect quantitative data on students' vocabulary achievement, vocabulary achievement tests (VAT) were administered before and after the differentiated gamification process. The tests consisted of twenty-three multiple-choice questions each measuring the vocabulary knowledge of the students (see Appendices D & E). Overall, students were responsible for over 114 words. In both pre and post-test questions, contextualization was achieved through excerpts, quotations, and statements from the class reader featuring the target vocabulary. To measure the vocabulary knowledge in a reliable and effective way, different question types were utilized while creating both tests. These question types included paraphrasing the vocabulary through synonyms, recognizing the antonyms of the target vocabulary, filling in the blanks with the appropriate vocabulary, identifying the correct vocabulary in a sentence with a hint such as the first or the last letter, and recognizing the vocabulary through its definition used in a contextualized sentence.

Pre-test was administered to the study groups before the gamification process whereas the post-test was administered to the groups after the gamified and non-gamified lessons in order to detect possible differences. The time given for both tests was 30 minutes. Students did not have any prior knowledge regarding the vocabulary of the pre-test. However, both the control and students from the experimental groups were exposed to the same vocabulary in the traditional and the different gamified treatments. Furthermore, for the content of the pre-test and post-test, feedback was taken from the students who had not participated in the study, and field experts were consulted to ensure that the tests were understandable and free of any ambiguity.

3.3.2 Semi-structured Interview

According to Mackey and Gass (2005), structured interviews and semi-structured interviews are the two types of qualitative data-collecting instruments. As structured interviews are rather rigid and inflexible, semi-structured interviews are considered as more versatile with the usage of a question list (Mackey & Gass, 2005). Moreover, according to Fisher (2012), quantitative data should not be used as the only instrument for data gathering. Instead, data triangulation should be aimed by utilizing both quantitative and qualitative means of data gathering. Therefore, in order to obtain specific information from a broader perspective, the researcher conducted semi-structured interviews with ten students from each of the experimental groups.

The semi-structured interview was conducted after the gamification process. The purpose of these questions was to determine students' perception in terms of their motivation, attitude, and vocabulary achievement towards the gamified lessons. During the preparation of the questions, field experts were advised in order to maintain the understandability and coherence of the research questions. The students voluntarily took part in the interviews as they were very eager to share their perceptions towards different gamified treatments. Each interview lasted about 15 to 20 minutes. Interviews were conducted in groups of two in order to create a more friendly and stress-free environment. Students were observed to talk more frequently and enthusiastically when they had their peers during the interview process. They were fully engaged in the discussion and brainstormed together to demonstrate their levels of motivation and attitude toward the different gamified treatments. Furthermore, students' opinions were taken into consideration while determining the time and the place of the interviews and it was decided that the interviews should take place in the library in order to create a more comfortable and quieter environment.

Since learners were fluent in English, they were given a choice of whether they wanted to take the interview in English or Turkish. All participants agreed to take the interview in English. Therefore, the medium of the interview was decided to be English. There were six questions regarding the effects of gamification on students' vocabulary achievement, motivation, and attitude levels in second language learning. The list of questions in the interview is as follows (see also Appendix – C).

1. What did you think about the implementation of gamification in our lessons? Did you find it useful? Why or why not?
2. Which game design element and gamification tool helped you the most (Quizizz, Kahoot, Quizlet or the Virtual Escape Room) in terms of vocabulary learning?
3. How would you compare your attitude and motivation towards the English lessons before and after the gamification treatments?
4. Would you like to see a more gamified approach in other lessons? Why / Why not?
5. Which reward was your favorite during the gamification process? Why?
6. How motivating are the use of a pointing system, achievement badges and the weekly leaderboard in your opinion? Did they motivate you to do more in class? Why / Why not?

These questions were designed by the researcher in consideration of Bloom's Taxonomy. Bloom (1956) asserted the importance of application, analysis, and synthesis in question-making. According to Bloom (1956), teachers should use these criteria in creating questions in order to avoid close-ended questions which would result in yes-no statements that show no production of the knowledge. Questions which asked in application, analysis, and synthesis format could result in students' encouragement while putting together the information needed for the answer (Bloom, 1956).

Finally, the whole interview process was recorded and transcribed by the researcher in order to further analyze the data on the perception of the students towards gamification and lessons with the active usage of the game design elements. After students had responded to each question, the researcher asked if they would like to add anything further so that they could clarify their ideas in a more clear and more thorough way. Ultimately, the effects of the differentiated gamification treatments on students' attitudes and motivation toward the English lessons were obtained throughout their answers.

3.3.3 Perceived Motivation Questionnaire

To complement the qualitative side of the study and see the motivation levels of all the students in the experimental groups, a perceived motivation questionnaire was administered at the post-test stage. This questionnaire allowed the researcher to understand the motivation levels of the students after the differentiated gamification treatments while enhancing the rich data obtained from the semi-structured interviews. The questionnaire was initially created and introduced by Shi and Cristea (2016). In their study, Shi and

Cristea (2016) developed a questionnaire to examine the changes in students' motivation after a gamified treatment implemented through an e-learning system called "Topolor". Self-Determination theory is one of the widely used motivational theories that focus on how self-determined and self-motivated individual behaviors are (Shi & Cristea, 2016). Therefore, during the design of this questionnaire, Shi and Cristea (2016) utilized the Self-Determination Theory to examine the motivational triggers and detect the level of perceived motivation among students.

Considering the purpose of this study, the term "Topolor" had been changed with gamification and game design elements. No other modifications were made to this questionnaire regarding the translation or differences in the statements.

The questionnaire aimed to address three aspects of motivation: Autonomy, Competence, and Relatedness. Table 3.5 shows the factors related to the motivation questionnaire and the number of items ascribed to each factor.

Table 3.5: Sub-factors of the Perceived Motivation Questionnaire

Sub-factors	Number of Items
Autonomy	4
Competence	4
Relatedness	4

According to the Self-Determination Theory created by Deci and Ryan (1985), autonomy is described as one's universal urge to be in control of their life and act in harmony with one's inner self. Therefore, autonomy has a direct influence on students' performance and motivation toward a subject or a task. Questions 1-2-3 and 4 in the perceived motivation questionnaire are regarded to measure students' state of autonomy. Secondly, competence is the second factor of this questionnaire. According to Deci and Ryan (1985), competence is someone's desire to achieve mastery and control the outcome. Questions 5-6-7 and 8 in the perceived motivation questionnaire aimed to measure students' capacity of competence. Finally, relatedness can be considered as the universal want toward interaction, experience, and care for others (Deci and Ryan, 1985). Questions 9-10-11 and 12 in the perceived motivation questionnaire aimed to analyze students' level of relatedness. Deci and Ryan (1985) asserted that these factors are essential for the emergence of learners' intrinsic motivation.

To sum up, the Perceived Motivation Questionnaire had 12 items divided into three factors, autonomy, competence, and relatedness and it was used to measure the intrinsic

motivation levels of the students (see Appendix A). It had a 5-point Likert Scale that ranges between “strongly disagree” (scored as 1) to “strongly agree” (scored as 5).

3.3.4 Attitude Scale

To complement the qualitative side of the study and gather data on a wider scale regarding the attitude levels of the both experimental group students, an attitude scale was applied after the differentiated gamification treatments. This attitude scale was originally created by Küçük et al. (2014)”. In their study, Küçük et al. (2014) developed an attitude scale to determine the attitudes of secondary school students towards the usage of “Augmented Reality” (AR) applications in education. Küçük et al. (2014) emphasized the importance of focusing on inner judgment, manners, desires, and hesitations rather than forceful adaptation when it comes to measuring learners’ attitudes. Considering the purpose of the study, the term “Augmented Reality” was adjusted to “Gamification and game design elements”. No other modifications were made in terms of translation or statements.

This questionnaire had 14 items that addressed three factors related to conceiving the attitudes of individuals: satisfaction, intent, and willingness (see Appendix B). The Attitude scale was applied to all the students in the experimental groups. In terms of format, it had a 5-point Likert Scale that ranged from “strongly disagree” (scored as 1) to “strongly agree” (scored as 5). Table 3.6 shows the factors related to the attitude scale and the number of items ascribed to each factor.

Table 3.6: Sub-factors of the Attitude Scale

Sub-factors	Number of Items
Satisfaction	5
Intent	5
Willingness	4

3.4 Gamification Treatment

To have a broader perspective on students' achievement, attitude, and motivation levels toward second language learning, different gamification treatments were utilized throughout the study. Werbach and Hunter (2012) stated that the power of gamification lies within the game-design elements, every gamification treatment could feature different applications that were powered by various game-design elements. Therefore, the researcher included different game design elements in each gamification treatment such as instant feedback, competition, collaboration, leaderboards, levels, and points. Although there are many technological tools that could feature such elements in a classroom environment, "Quizizz", "Kahoot", "Quizlet" and a "Virtual Escape Room" were the chosen applications implemented in the lessons by the researcher. The school actively used these applications throughout the middle school curriculum and students were quite familiar with the process. However, a pilot study had been conducted with both the control group and the experimental groups. Throughout the pilot study, students from other classes who were not part of this research were consulted in order to get feedback regarding the understandability of the questions and the vocabulary used in the different gamified contexts.

During the treatment, students were exposed to various game design elements through selected educational applications: "Quizizz", "Kahoot" and "Quizlet". Furthermore, the researcher's own creation, a "Virtual Escape Room" was utilized as a revision tool for both retention purposes and the acquisition of the new vocabulary learned in the lessons. On the other hand, one of the experimental groups was exposed to an enhanced gamified treatment with the implementation of the weekly leaderboards, pointing system and achievement badges with rewards. Finally, students in the control group had the same exposure in terms of vocabulary and the content of the book, however, they were only limited to the traditional drill-like activities such as worksheets with multiple choice questions and matching activities along with various booklet work. Below, you can find the explanation regarding the gamification tools used for the experimental groups.

3.4.1 Quizizz

Quizizz is an online educational gamification application featuring many gamified elements. In an English Language Teaching context, questions focused on remembering a specific content and learning new vocabulary can be administered via this application. The implementation can be instructor based with a time limit in which the instructor controls the speed of the process, or it can be used as a time-attack in which students compete with

each other or collaborate as a team to finish the questions with the most points available. Questions can be presented via true-false statements, multiple choice, images, listening, or watching content. The game elements featured in this educational application are leaderboards limited within the game, levels, instant feedback, and surprise power-ups which can be explained as the randomization of rewards such as frozen time, double points, and 50 percent chance enhancing the gamified process with the element of fun. Moreover, students were able to use their nicknames while playing this game and answer questions through their iPads. They get different points according to their quickness in answering the questions. During the gamified lessons, Quizizz was used effectively in order to implement the element of fun, instant feedback, and engagement and to measure students' performance in terms of remembering the content, retention, and acquisition of new vocabulary. In terms of the format, there were vocabulary questions featuring paraphrasing, antonyms, and understanding the definitions through excerpts and quotations from the class reader. The questions included in this educational application were shown to the field experts and the students who had not participated in the research to get their feedback and free the questions from ambiguity.

3.4.2 Quizlet

Quizlet is an educational gamification tool created by Andrew Sutherland in 2005. This tool provides vocabulary in flash cards with their definitions. It can be implemented both during the lesson and as a revision or self-study tool for the vocabulary learned in an English class. Therefore, this tool is found valuable for second language learning by many instructors.

There are different gamification elements in this educational tool. Firstly, the time-attack mode allowed students to collaborate or compete with each other while identifying the definition of the target vocabulary in the quickest possible way. Moreover, students can also be divided into groups or they can play individually. There is also a multiple-choice quiz version in which students are required to find the definition or the target vocabulary in sentences. There is a game side of the quizlet in which the student can also save their planet from meteor showers just by clicking on the right word when the definition is presented. Therefore, we can state that instant feedback, collaboration, leaderboards, and points are among the most effective game elements of this educational tool.

As the word lists with the target vocabulary were designed by the researcher and shared with the students after the pre-vocabulary test, Quizlet was used both for self-study purposes and for gamifying the lessons. In the lessons targeting vocabulary knowledge,

both individual and group time-attack, saving the planet game, and multiple-choice quizzes were utilized. The questions and the statements in the Quizlet included the target vocabulary taken from the class reader which was also included in the post-test. Lastly, the opinions of the field experts and the students were taken into consideration prior to the implementation of this educational tool in order to free the questions from any possible ambiguity and coherence issues.

3.4.3 Kahoot

Kahoot is an educational gamified application used by millions of students throughout the world. Just like "Quizizz", students were able to use their nicknames and participate through their iPads. In an English Language Teaching context, questions aiming to comprehend target vocabulary and remember the content of a specific reading material can be implemented through this application. In distinction with the "Quizizz", surprise power-ups, levels, or time-attack mode is not featured in this application. However, in Kahoot, the choices for the questions can be presented in a colorful way with various images. The game elements featured in this educational application are competition, collaboration, instant feedback, leaderboards, and points. The number of points students get is determined by the time they spent on answering the questions. This means that the quicker they answer the questions, the more points they are rewarded.

Kahoot was implemented as a gamification tool throughout the study. In this treatment, the questions featured visual materials, true-false statements, paraphrase, synonym, and antonym questions in a multiple-choice and written style. The activities were aimed to promote retention abilities and the acquisition of the target vocabulary during the lessons. During the preparation for the Kahoot event, students' feedback was also taken into consideration. Prior to the implementation, field experts were consulted in order to free the questions from ambiguity.

3.4.4 The Virtual Escape Room

Escape rooms can be considered as a fresh concept in gamified teaching. The biggest parameter that differentiates this gamification tool from others is that it provides a contextualized way of teaching. It is possible to embed a "story within a story" scenario while teaching English. In this gamified treatment, 8th grade teachers had videos pretending that they were trapped in a room and the only way to find the secret code was to answer the questions that measure the understanding and the retention of the target

vocabulary.

Besides contextualization, another major difference in terms of game design elements was the introduction of levels. With levels, the surprise element of gamification was presented in the form of penalties. If a student gives the wrong answer, they were sent to the previous level or they were presented with multiple extra questions in order to move to the next level. Many students could be familiar with this concept that creates a gamified environment whether through blockbuster movies such as “Jumanji” and “Zuthara” or even from various famous board games such as “Unlock” or “EXIT”. Moreover, “Minecraft” and “Roblox” could be considered as games in which these types of environments could be utilized. The concept of challenges, the sense of progress, and fulfillment have always been something that catches students’ attention. An ideal escape room had to provide the concept of flow for the players. Csikszentmihalyi (2014) stated that flow is an essential element to provide for students during a gamification process. In other words, an escape room needs to offer varieties of increasing challenges that would lead to peak engagement and performance. Therefore, while establishing an educational escape room, the researcher had to make sure that the tasks were neither too easy nor too difficult so that the players would want to carry on overcoming challenges and passing levels in the escape room. This flow would eventually lead to the retention and acquisition of the target vocabulary. In the creation of the virtual escape room, google forms application was utilized. There were four levels and each level presented a new challenge within a context. The students were trying to save their teachers and themselves from the locked room which can only open with a specific code. Each level was supported with visual materials and videos. After the vocabulary questions were answered at each level, a clue was presented to the learners. Through the collection of these clues, the learners were able to get to the last question in which they would unlock the escape room with the code they found from the collection of the clues. All questions in each level were related to the target vocabulary and they were contextualized through paraphrased excerpts and quotations from the class reader. Field experts were consulted while establishing the levels and the questions of the escape room. Furthermore, instant feedback, surprise element, collaboration, fun, and leaderboards were the other gamified elements of this educational escape room.

This gamification tool was used in the last week of the treatment as it provided an effective way to revise all the information gathered by the students. As it was contextualized, it was compelling for the revision of the vocabulary knowledge and the content of the class reader which was acquired over the course of the English lessons.

3.4.5 Leaderboards and Achievement Badges

Throughout the study, students who were in the experimental groups were exposed to the questions, excerpts, and quotations from the class reader featuring target vocabulary in a gamified way. Both groups had weekly assignments in terms of vocabulary homework and classwork which they were required to complete. While both experimental groups received gamification treatment through educational applications that featured effective game design elements such as competition, collaboration, challenges, problem solving, and the element of fun, there were major differences in their gamification treatment.

In addition to all these game design elements provided for the experimental group – 1, a weekly leaderboard and a pointing system with levels were designed for the experimental group – 2's enhanced gamification treatment. Students in the experimental group – 2 were to gain or lose experience points based on their actions, performance, and completion of the tasks in the English lessons. The main reason for the implementation of this weekly leaderboard was to take the element of competition out of the educational gamification tool and create a competitive learning environment. Moreover, instant feedback from the leaderboard also allowed students to acknowledge their progress throughout the English lessons so that they could ask the instructor for office hours and extra practice lessons or take the necessary action themselves. As no weekly leaderboard had been established, students in the Experimental Group – 1 did not receive any points or levels from their actions, performance, or the completion of the tasks in the English lessons. Therefore, their points, competition, and instant feedback remained within the gamified educational tool. Additionally, for the experimental group – 2 students' enhanced gamification treatment, unique achievement badges were utilized. These achievement badges featured unmaterialistic rewards and the aim was to promote intrinsic motivation and higher levels of positive attitude towards the English lessons. According to the SAPS framework, the wrong reward could heavily damage students' motivation and attitude toward the lesson. The right reward should feature status, access, or power rather than materialistic value (Zichermann and Cunningham, 2011). Therefore, the SAPS framework was utilized in the creation of these rewards. On the other hand, the experimental group – 1 students did not benefit from this achievement badge system and they did not receive any rewards for their efforts during the gamification treatment. It was presumed that the feeling of motivation would remain within the gamified educational tool and not be reflected in the English lessons as a whole. Table – 3.7 below reflects the detailed version of the gamification treatment for the experimental groups and the traditional treatment for the control group.

Table 3.7: Implementation of the Gamification Process

STUDY GROUPS	ACTIVITIES	Weeks of the Study				TREATMENT DETAILS
		Week 1	Week 2	Week 3	Week 4	
Control Group	Target Vocabulary Instruction	+	+	+	+	This study group was not exposed to any gamification tools. They had a traditional treatment through booklets and worksheet activities. This group had no chance to compete or collaborate with each other. They also could not overcome challenges, collect any points, earn badges or rewards as the concept of weekly leaderboards and achievement badges was not introduced.
	Homework and Classwork Check	+	+	+	+	
	Questions related to remembering the content of the book and learning target vocabulary	+	+	+	+	
	Implementation of the Gamification Tools	-	-	-	-	
	Leaderboards and Badges	-	-	-	-	
Experimental Group - 1	Target Vocabulary Instruction	+	+	+	+	Unlike the Control Group, this study group was exposed to the gamification tools listed above. Instant feedback, collaboration, problem solving, sense of competition, challenges, and element of fun were among the game design elements used in this gamification treatment. Points and leaderboards remained within the educational application. However, the students did not receive any rewards as there was no introduction to points, weekly leaderboards, and rewards through achievement badges.
	Homework and Classwork Check	+	+	+	+	
	Questions related to remembering the content of the book and learning target vocabulary	+	+	+	+	
	Implementation of the Gamification Tools	+	+	+	+	
	Leaderboards and Badges	-	-	-	-	
Experimental Group - 2	Target vocabulary instruction	+	+	+	+	This study group received an enhanced gamification treatment. They were exposed to all gamification tools just like the other experimental group. However, they were also introduced to a point system that designated their place on the weekly leaderboard. Through their actions in the classroom, students paved their way in this leaderboard and they had a chance to win exclusive rewards. Unique achievement badges provided rewards that show status and privilege during the lessons.
	Homework and classwork check	+	+	+	+	
	Questions related to remembering the content of the book and learning target vocabulary	+	+	+	+	
	Implementation of the gamification tools	+	+	+	+	
	Leaderboards and badges	+	+	+	+	

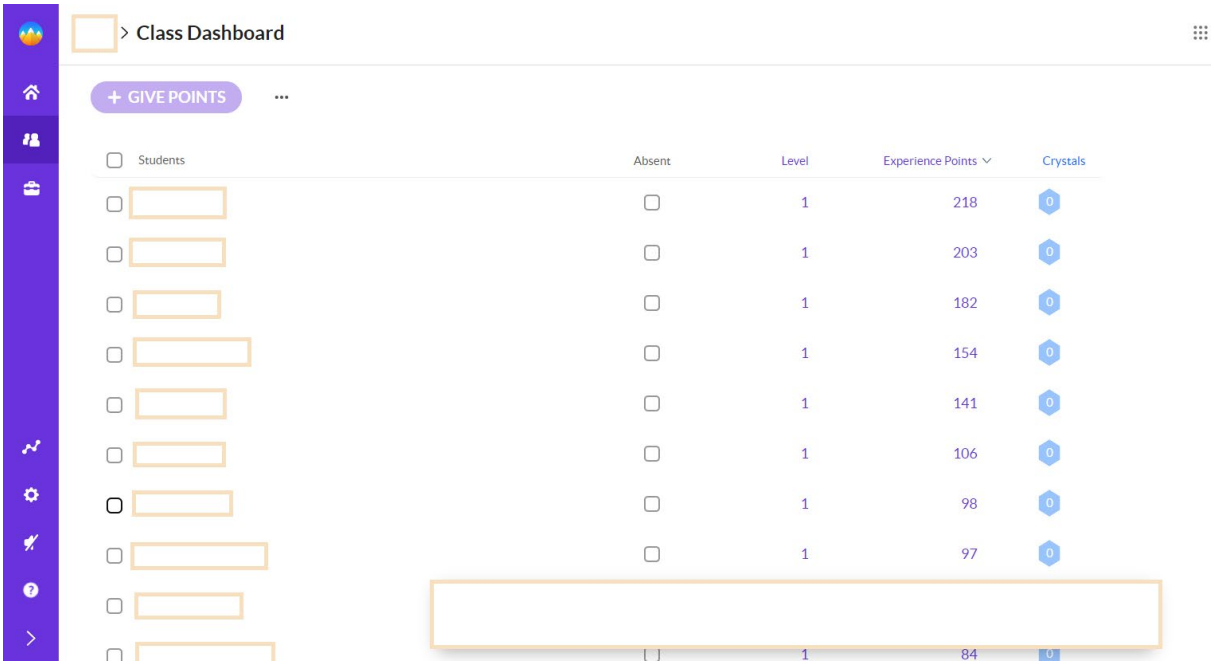
As it can be seen from Table 3.7, unlike the experimental groups, the control group did not receive a gamified treatment. Their traditional treatment was utilized through drill-like activities from the booklet and worksheets which were conducted in the English lessons. Furthermore, the weekly leaderboard created exclusively for the experimental group – 2 allowed students to gain experience points and levels according to the completion of certain tasks and their performance during the English lessons. The procedures on how to lose and gain experience points are explained below and shared with the students from Experimental Group – 2 at the beginning of the study.

1- **Completing homework and classwork assignments on time:** Students gain 10 experience points for each homework and classwork assignment they have completed throughout the week. If a student had a "streak" which can be explained by back-to-back homework and classwork completion, he or she is awarded extra 5 points for each assignment they completed.
2- **Usage of L1 in the classroom:** Students lose 10 experience points every time they speak Turkish or their L1 language during English lessons.
3- **No room for rudeness:** Students lose 10 experience points every time they are rude to a classmate.
4- **Asking for permission before speaking:** From this activity, students gain 1-2 experience points per lesson based on their participation after raising their hands.
5- **Completion of Gamification Tools:** To promote participation, every student who participates in the gamified activity completing all the questions, regardless of the answers gains 2 experience points, 4th and 5th place receive 6 experience points as runner-up, 3rd place receives 8 experience points, 2nd place receives 9 experience points and 1st place receives 15 experience points.
6- **Teamwork:** To promote teamwork, students who successfully co-exist in an activity receive 5 experience points. This is based on the teacher's observation.
7- **Notetaking Skills:** To promote notetaking, the teacher checked students' notebooks after the lessons that required taking notes. Based on the teacher's observation, students who take their notes regularly get 10 extra experience points at the end of the week.

These experience points were reflected to the students after the end of every week throughout the study. The procedures for gaining points and experience points that were collected by the students were registered to ClassCraft and Microsoft Excel so that the

researcher could keep up with the standings. Furthermore, all the positive and negative behaviours were listed in ClassCraft's interface and shared with the students at the beginning of the treatment. Through getting points from these in-class behaviors, every week of the treatment, there were differences in the standings of the leaderboard (see Figure 3.1). The aim of using these tools was to have a motivational but competitive learning environment while visually attracting the learners.

Figure 3.1: Leaderboard Standings from ClassCraft



In addition to leaderboards and points, achievement badges were also introduced to the Experimental Group – 2 in the enhanced implementation of gamification. Students could obtain any badge with a specific reward as long as they collect enough experience points. In order to promote the element of competition, collaboration, and long-term motivational effects, the rewards that badges provide were established in a non-materialistic way in accordance with the SAPS framework (Zichermann and Cunningham, 2011). At the beginning of the treatment, students were reminded that once they use their experience points to obtain a badge, it will be recorded on the weekly leaderboard as levels. The names of the badges and the rewards they provide are indicated below and shared with the students from Experimental Group – 2 at the beginning of the study.

1- **I am in Charge! :** To obtain this badge, the student must gain 25 experience points from the completion of the tasks in the English lessons. The reward of this badge is the ability to choose the topic or the music in the English morning chats for a week

period.

2- **Revive your Friend:** To obtain this badge, the student must gain 45 experience points from the completion of the tasks in the English lessons. The reward is that the student can share 20 experience points with another friend. This reward promotes collaboration among students.
3- **Got Next VIP:** To obtain this badge, the student must collect 60 experience points from the tasks. This will be resulted in not waiting in the queue in the lunch hall for a week period.
4- **Cut me some Slack:** To obtain this badge, the student must collect 75 experience points so that he or she can postpone the deadline of any English assignment by two days.
5- **The Stylist:** To obtain this badge, the student must gain 50 experience points as this will give them the freedom to wear casual clothes coming to school and during English lessons. The effect of this badge is limited to three days and the necessary permission from the school was taken.
6- **The Gourmet:** The student who obtains this badge in exchange for 40 experience points can eat or drink during the English lessons. Furthermore, this privilege can be shared with another pupil. The effects of this badge last for two days.
7- **Redeem Yourself:** This badge is worth 70 experience points and it allows the student to get 10 extra points added to a homework or a classwork of their choice.
8- **Comfortable Yet:** This badge gives the student the privilege to use the teacher's desk and chair for 2 days during the English lessons. It can be obtained by gaining 55 experience points. The effect of this badge lasts for two days.

Figure – 3.2 below presents the overview of the achievement badges which are implemented specifically for the differentiated gamification treatment of the experimental group – 2.

Figure 3.2: Overview of the Achievement Badges

As it can be seen from the achievement badges, SAPS Framework by Zichermann and Cunningham (2011) was utilized in their creation. Status, power, and privilege are known indicators of intrinsic motivation (Zichermann and Cunningham, 2011). Therefore, the researcher aimed to create rewards that hold no materialistic value as they are the key to promoting intrinsic motivation. As stated in the SAPS Framework, the researcher wanted the rewards to be visible to others and hold power and status value. For instance, one would think that eating during the lessons should hold less value than gaining 10 extra experience points or postponing the deadline of an assignment. Therefore, it was quite significant to observe students while choosing their achievement badges as some of them can be more productive than others. Moreover, the achievement badges such as “Revive your Friend” promoted collaboration as the students could share their experience points with each other. Lastly, as the experimental group – 2 students were exposed to the implementation of badges, levels, weekly leaderboards, and rewards as game design elements, their gamification treatment could be considered as enhanced and differentiated gamification. Both gamification treatments were utilized in order to conceive the effects of gamification toward vocabulary achievement, motivation, and attitude.

3.5 Data Analysis Procedure

After the necessary permissions had been taken from the school and the original creators of the questionnaires, the vocabulary achievement pre-test (VAT) was administered to sixty students in the first phase of the study. In the pre-vocabulary test, students did not read the class reader yet as they were only informed that there will be a test regarding this term's class novel. Therefore, they did not have any prior knowledge of the vocabulary or the context. Both for the control group and the experimental groups, the differentiated treatments lasted for four weeks in 5 hours a week English lesson context. All the classrooms were taught by the same teacher. The objectives of the lessons had been created at the beginning of the academic term with the consideration of the gamification process. The objectives of these lessons include;

1- Continue to extend the vocabulary range of language and use it appropriately
2- Analyze and respond to the range of ideas and differing viewpoints, purposes, and themes in a variety of related texts
3- Identify the main ideas, viewpoints, themes, and purposes in a text
4- Spell and use most vocabulary correctly, including some complex polysyllabic words and unfamiliar words
5- Demonstrate control of target vocabulary in a variety of sentence types used for the intended purpose and desired effect.

The lessons and the vocabulary tests revolved around a class reader called "The Giver" as it is one of the best-seller children's novel featuring a 12-year-old boy named Jonas with a teenager perspective just like the students who participated in the study. Field experts were consulted while choosing this book as a class novel for the school's academic term of 2021-2022. Schmitt (2010) emphasized the importance of contextualization in the vocabulary learning process. Therefore, one of the main reasons to use class reader was that it provided a contextualized exposure of the vocabulary to the students with the help of different chapters, excerpts, and quotations from the book.

After the pre-test, gamified treatment started for the students in the experimental groups. Considering the purpose of this study, the control group was not offered any gamification tools or game design elements throughout their English lessons. For the control group, traditional treatment was administered with drill-like activities from the vocabulary booklet and the worksheets. Furthermore, they were required to take notes of their definitions while writing the statements with answers. No rewards, leaderboards, badges,

or experience points were provided after the completion of these tasks, as they simply moved on from one task to the other through traditional methods of teaching. All the differentiated treatments were in accordance with the lesson objectives.

After the initial vocabulary achievement was measured, a post-vocabulary test was administered to observe the differences in the vocabulary achievement of the students. Target vocabulary in the pre and post-vocabulary tests were implemented via contextualized statements from the book so that students were not able to use memorization techniques.

After phases one and two of the study, semi-structured interviews were conducted with ten voluntary students from each experimental group in order to understand the motivational and attitudinal perceptions towards gamification. Phase four of the study came as complementary work to all the other phases. In order to see the motivation and attitude levels of all the students in the experimental groups while supporting the data collected from the interviews, perceived motivation questionnaire and attitude scale were administered. In the analysis of the quantitative data SPSS (Statistical Package for the Social Sciences) version 26 was utilized. After the homogeneity and the normality of the data had been determined, respective data analysis tests were administered for the academic achievement data. Furthermore, data collected in the semi-structured interviews were analyzed through context analysis. Lastly, frequency analysis was utilized to analyze the data obtained from the perceived motivation questionnaire and the attitude scale. Table 3.8 presents the data collection tools and the respective analysis methods for this study (see Table 3.8).

Table 3.8: Data Collection Tools and Analysis Methods

Research Questions	Data Collection Tools	Data Analysis Method
RQ1: Does gamification have any effects on learners' vocabulary achievement?	Vocabulary Achievement Test (VAT) – Pre-test, Post-test Semi-structured Interview	Descriptive Statistics (One-way ANOVA) Paired samples t-Test
RQ2: Do design features of gamification have any effects on learners' vocabulary achievement?	Vocabulary Achievement Test (VAT) – Pre-test, Post-test Semi-structured Interview	Descriptive Statistics (One-way ANOVA) Paired samples t-Test
RQ3: What are the EFL learners' perceptions towards the differentiated gamification treatments in terms of their academic achievement, motivation and attitude?	Semi-structured Interview Perceived Motivation Questionnaire Attitude Scale	Content Analysis (Theme, Category, Code) Frequency Analysis

3.5.1 The Researcher's Role

In accordance with the purpose of this study, the researcher had different roles. First of all, the researcher had prepared different gamified lesson plans which include the gamification tools such as applications and the virtual escape room. Moreover, the researcher continued to enhance this gamification procedure with the introduction of leaderboards, and experience points and by creating achievement badges with rewards exclusively for the experimental group – 2. The researcher prepared the pre and post-vocabulary tests in accordance with the school's curriculum and lesson objectives aiming to measure the level of the target vocabulary acquired before and after the gamification process. Furthermore, the researcher instructed all the gamified and non-gamified lessons. After the treatment and the post-vocabulary test, the researcher was in charge of conducting the semi-structured interview to understand the attitudinal and motivational perceptions of the students. Finally, as complementary data, the researcher implemented the motivation questionnaire and the attitude scale to all the students in the experimental groups hence was able to see their motivation and attitude levels towards the English lesson. Through the careful analysis of the data, the researcher aimed to find the effect of gamification on students' vocabulary achievement, motivation, and attitudes.

3.6 Conclusion

All in all, this section intended to introduce and examine the methodology of this research in the areas of research design, participants and setting, data collection instruments, data analysis, detailed explanation of the gamification treatment, and the researcher's role throughout the study. In the next chapter, the data collected through data collection instruments are analyzed and interpreted in accordance with the research questions of this study.

CHAPTER IV
DATA ANALYSIS & RESULTS

4.1 Introduction

In this chapter, the analysis and results of the qualitative and quantitative data are represented in order to determine whether differentiated gamification treatments have any effect on students' vocabulary achievement, motivation, and attitude toward second language learning. First of all, the reliability and validity of data collection instruments are presented. Then, findings regarding the distinction between the control group and the experimental groups' vocabulary achievement are analyzed through descriptive analysis. After that, data gathered from semi-structured interviews forming both of the experimental group students' motivational and attitudinal perceptions towards gamification are examined via content analysis. Lastly, the analysis of the complementary data collected from the perceived motivation questionnaire and the attitude scale is presented. Below, you could the detailed data analysis and results in accordance with the research questions of the study.

4.2 Reliability and Validity

Quantitative data were collected through vocabulary achievement tests (VAT) in the format of pre-test and post-test. As for the qualitative data, the semi-structured interview method was used to analyze the motivational and attitudinal perceptions of the students. To further understand the motivation and attitude levels of the students, the perceived motivation questionnaire and attitude scale were applied to the experimental groups at the post-test stage. Cortina (1993) suggested that when Cronbach's alpha value of a work is above (r=0.700), it can be considered reliable and the questions have integrity regarding internal consistency. In order to meet the reliability criteria, the internal consistency of the vocabulary achievement tests, perceived motivation questionnaire, and attitude scale were measured. The coefficient alpha value of the 23-item pre and post-vocabulary achievement tests were measured as (r=0.843) and (r=0.806) respectively proving that the questions of tests had integrity in terms of internal consistency. On the other hand, the internal consistency of the original 14-item perceived motivation questionnaire created by Shi and Cristea (2016) was found to be (r=0.810). In this study, Cronbach's alpha value for the

perceived motivation questionnaire was measured as (r=0.907). Furthermore, Cronbach's alpha value of the original 15-item attitude scale created by Küçük et al, (2014) was found to be (r=0.835). In this study, Cronbach's alpha value for the attitude scale was measured as (r=0.925).

To meet the validity criteria, field experts were consulted through every stage of creating the questions in the pre and post-vocabulary achievement test and the interview questions in order to remove any possible bias and ambiguity. Moreover, the statements in the complementary questionnaires were also checked by field experts. In terms of the difficulty of the questions in the vocabulary achievement test, parallelism was aimed. Moreover, Schmitt (2010) suggested that prior to the activities that measure the vocabulary knowledge of the learners, a pilot study must be conducted. Therefore, a pilot study was conducted in which students' opinions regarding the understandability of the statements and the questions with the vocabulary used in the test were taken into consideration. According to Mackey and Gass (2005), if one test is more difficult than the other, the pre-test and post-test methods may not reflect the improvement of the student. Therefore, each question was tested according to the lesson objectives so that parallelism in overall difficulty could be achieved.

4.3 Quantitative Results

The data for the quantitative analysis were collected both before and after the implementation of gamification by using pre-tests and post-tests to measure students' vocabulary achievement. Furthermore, quantitative data for motivation and attitude was obtained through the perceived motivation questionnaire and attitude scale. To analyze the obtained data, SPSS (Statistical Package for the Social Sciences) was used.

First of all, in order to determine the normality in data distribution, the Shapiro-Wilk Normality test was utilized for both pre-tests and post-tests. After the normality was assured, the homogeneity of the data was checked via the implementation of Levene's Test of Homogeneity of Variance. Upon successful determination of normality and homogeneity, it has been decided that the prerequisites for parametric tests were not violated. Therefore, the researcher decided to conduct parametric tests for data analysis.

A one-way ANOVA test was implemented to compare learners' pre-test and post-test scores on vocabulary measures. Exclusively for the post-test data, the Post-Hoc Tukey test was utilized to enhance the data comparison. Furthermore, in order to widen the scope of the analysis within groups, paired samples t-test was conducted for both the control group

and the experimental groups' pre and post-vocabulary achievement tests. Complementing the qualitative side of the study, the data obtained from the perceived motivation questionnaire and the attitude scale was analyzed via frequency analysis.

The quantitative data results gathered from the pre-test, post-achievement test, perceived motivation questionnaire, and attitude scale are presented and examined in detail. Furthermore, comparisons on the academic achievement are made both within and between the control group and the experimental groups.

4.3.1 Findings regarding the pre-test vocabulary achievement scores

The researcher aimed to examine whether there was a significant difference in students' vocabulary achievement before and after the implementation of the gamification process. To understand data distribution, the data collected through pre-tests were first evaluated via the Shapiro-Wilk normality test. The results regarding the normality test are presented below (see Table 4.1).

Table 4.1: Shapiro-Wilk normality test results for the pre-test

Shapiro-Wilk			
Pre-test	Statistic	df	p-Value
Control	0.915	20	0.080
Ge-1	0.923	20	0.115
Ge-2	0.912	20	0.071

The Shapiro-Wilk normality test in Table – 4.1 revealed the significance levels for the control group (p=0.080, p>.05), the experimental group – 1 (p=0.115, p>.05), and the experimental group – 2 (p=0.071, p>.05) respectively. The initial analysis of data showed that since the significance levels were greater than p=0.05, the pre-test scores in all three groups were normally distributed.

After the normality of the pre-test data was assured, Levene's Test of Homogeneity of Variances was applied to determine whether the data were homogenous or not. According to this test, if the significance level is greater than p=0.05, the data is considered homogenous. The results of the Homogeneity test are presented below in Table – 4.2.

Table 4.2: Homogeneity test results for the pre-test

Test of Homogeneity of Variances				
Pre-test	Levene Statistic	df1	df2	p-Value
Based on Mean	0.436	2	57	0.649
Based on Median	0.215	2	57	0.807
Based on the Median and with adjusted df	0.215	2	55.588	0.807
Based on trimmed mean	0.443	2	57	0.644

The homogeneity test in Table – 4.2 revealed that the pre-test results of all three groups were homogenous (p=0.649, p>.05). Therefore, a decision was made to use parametric tests to further analyze the data. Table – 4.3 below illustrates the descriptive statistics for the pre-test results.

Table 4.3: Descriptive statistics for the pre-test

	N	Mean	Std. Deviation	Lower Bound	Upper Bound	Minimum	Maximum
Control	20	62.39	22.714	51.761	73.022	17.39	91.30
Ge-1	20	63.91	20.153	54.481	73.345	17.39	86.96
Ge-2	20	65.43	22.414	54.945	75.925	13.04	91.30
Total	60	63.91	21.454	58.371	69.455	13.04	91.30

As it can be seen from Table – 4.3, all three groups shared similar mean scores for the pre-test (M: 62.39 vs 63.91 vs M:65.43). The inter-group comparison of the pre-test results was made via a One-way ANOVA test in accordance with the research questions of the study. Table – 4.4 shows the results of one-way ANOVA conducted to find out if there was a significant difference between the study groups in terms of the pre-test results.

Table 4.4: One-way ANOVA test results for the pre-test

	Sum of Squares	df	Mean Square	F	p-Value
Between Groups	92.628	2	46.314	0.098	0.907
Within Groups	27064.272	57	474.812		
Total	27156.9	59			

Data analysis via One-way ANOVA test showed that the difference between the pre-test scores of the control group, the experimental group – 1 and experimental group – 2 students was not statistically significant ($F_{2, 59}$= 0.098 p= 0.907 p>.05). Additionally, the results indicated that all the students from the control group and the experimental groups had similar academic levels in terms of the target vocabulary. This provided the researcher with a distinct opportunity to measure the effects of gamified treatment on vocabulary achievement more effectively.

4.3.2 Findings regarding the post-test vocabulary achievement scores

After the 4-week gamified and non-gamified treatment, the researcher used a post-achievement test to determine whether there was a significant difference in the vocabulary achievement of the control group students and the students from the experimental group – 1 and experimental group - 2. In order to determine post-test data distribution, the Shapiro-Wilk normality test was utilized. The results regarding the normality test are presented below (see Table 4.5).

Table 4.5: Shapiro-Wilk normality test results for the post-test

Shapiro-Wilk			
Post-test	Statistic	df	p-Value
Control	0.913	20	0.074
Ge-1	0.911	20	0.065
Ge-2	0.913	20	0.072

The Shapiro-Wilk normality test in Table – 4.5 illustrated the significance levels for the control group (p=0.074, p>.05), the experimental group – 1 (p=0.065, p>.05), and

experimental group – 2 (p=0.072, p>.05) respectively. As the initial analysis showed, the significance levels were greater than p=0.05. Therefore, it could be concluded that post-test scores in all three groups were normally distributed.

After the data normality was determined, Levene's Test of Homogeneity of Variances was conducted to find out if the post-test data was homogeneous. The results of the Homogeneity test for the post-test results are presented below (see Table 4.6).

Table 4.6: Homogeneity test results for the post-test

Test of Homogeneity of Variances				
Post-test	Levene Statistic	df1	df2	p-Value
Based on Mean	2.278	2	57	0.112
Based on Median	2.141	2	57	0.127
Based on the Median and with adjusted df	2.141	2	56.63	0.127
Based on trimmed mean	2.294	2	57	0.11

The homogeneity test in Table – 4.6 showed that the post-test results of all three groups were homogenous (p=0.112, p>.05). Therefore, parametric tests were utilized for further analysis of the data. Table – 4.7 below reveals the descriptive statistics for the post-test results.

Table 4.7: Descriptive statistics for the post-test

	N	Mean	Std. Deviation	Lower Bound	Upper Bound	Minimum	Maximum
Control	20	73.26	13.624	66.88	79.64	47.83	91.3
Ge-1	20	78.91	15.534	71.64	86.18	52.17	100
Ge-2	20	84.78	11.329	79.48	90.08	56.52	100
Total	60	78.99	14.189	75.32	82.65	47.83	100

Table – 4.7 presented the post-test mean scores for the control group and experimental groups respectively (M: 73.26 vs M: 78.91 vs M: 84.78). As the data shows, all three groups scored higher and showed improvement from the pre-test to post-test scores.

However, to determine whether this improvement was significant or not, the gathered data from the post-test results were analyzed and a between-group comparison was made via a one-way ANOVA test in accordance with the research questions of the study (see Table 4.8).

Table 4.8: One-way ANOVA test results for the post-test

	Sum of Squares	df	Mean Square	F	p-Value
Between Groups	1327.662	2	663.831	3.587	0.034
Within Groups	10550.095	57	185.089		
Total	11877.757	59			

Data analysis from a one-way ANOVA test revealed that the difference between the post-test scores of the control group, the experimental group – 1, and experimental group – 2 was statistically significant ($F_{2, 59}$= 3.587 p= 0.034 p<.05). Post-Hoc Tukey was then carried to further compare the means of the study groups. Table – 4.9 below shows the one-way
ANOVA and post-hoc analysis of the post-test results.

Table 4.9: One-way ANOVA and post-hoc analysis of the post-test results

Study Group		Mean Difference	Std. Error	p-Value
Control	Ge-1	-5.652	4.302	0.194
	Ge-2	-11.522	4.302	0.010
Ge-1	Ge-2	-5.870	4.302	0.178
	Control	5.652	4.302	0.194
Ge-2	Ge-1	5.870	4.302	0.178
	Control	11.522	4.302	0.010

The findings showed that there was a significant difference between the experimental group – 2 and the control group (p=0.010, p<.05). There were however no significant differences between both of the experimental groups (p=0.178, p>.05) or the control group and the experimental group – 1 (p=0.194, p>.05). It could be concluded that the experimental group – 2 outperformed the control group in the vocabulary achievement

post-test scores.

4.3.3 Findings regarding the pre-test and post-test vocabulary achievement scores

To further examine the distinctions in the vocabulary achievement of the control group students and the students from the experimental group – 1 and experimental group - 2, a comparative analysis was made between the pre-test and post-test scores via paired samples T-test. The results regarding the difference between the groups in terms of vocabulary achievement are presented below (see Table 4.10).

Table 4.10: Pre-Test and Post-Test results within groups

	Test	N	Mean	Mean Diff.	Std. Dev.	t	df	p-Value
Control Group	Pre-Test	20	62.39	10.87	26.144	1.859	19	0.079
	Post Test	20	73.26					
Experimental Group - 1	Pre-Test	20	63.91	15.00	26.371	2.544	19	0.020
	Post Test	20	78.91					
Experimental Group - 2	Pre-Test	20	65.43	19.35	26.105	3.315	19	0.004
	Post Test	20	84.78					

Data analysis from paired samples T-test indicated that the difference between the pre-test and post-test scores within the control group was statistically not significant ($p= 0.079$, $p>.05$). Furthermore, the data showed that the mean score of the experimental group – 1 was higher than that of the control group ($M=78.91$ vs $M=73.26$). On the other hand, the experimental group – 2's mean score was higher than both the control group and the experimental group – 1 respectively ($M=84.78$ vs $M= 78.91$ vs $M=73.26$). The results revealed that the difference in the pre-test and post-test scores of the experimental group – 1 ($p= 0.020$, $p<.05$) and experimental group – 2 ($p= 0.004$, $p<.05$) was considered to be statistically significant. Moreover, the difference in the experimental group – 2 was considered to be statistically more significant compared to the experimental group – 1 ($p= 0.004$ vs $p=0.020$, $p<.05$). It could be concluded that both experimental groups showed significant improvement from the pre-test to the post-test. The variety and enhancements throughout the 4-week treatment of gamification allowed the experimental group – 2 students to achieve fundamentally higher in the post-tests. However, it should be pointed out that the gamification treatment for the experimental group – 1 was also beneficial regarding the vocabulary achievement of second language learning.

4.4 Qualitative Results

At the end of the 4-week study with the gamified lessons, a semi-structured interview was conducted with ten volunteer students from each of the experimental groups. Brewer and Hunter (1989) asserted that in order to compensate for the limitations of a study, different methods for data collection and analysis should be utilized. Shenton (2004) also stated that the key to effective research is to combine quantitative and qualitative means of data collection and analysis. The qualitative data results gathered from the semi-structured interviews are analyzed and examined in detail via content analysis.

For reliability measures, the recordings and the transcribed version of the data were examined by the researcher and his colleague to compare both findings and make sure that there are no disagreements. After the completion of this step, the researcher labeled the participants' names from S1 to S20 along with their respective experimental groups in order to avoid any obscurity. Then, the researcher identified and coded the relevant themes in the categories of motivation, attitude, and vocabulary achievement to perceive the perception of students towards differentiated gamification treatments in second language learning. Finally, these categories, themes, and codes along with student responses were also presented to field experts by the researcher and their suggestions were also taken into consideration during the content analysis.

4.4.1 Findings regarding students' perceptions towards gamification

When the interviewees from the experimental groups were asked to elaborate on their perception of gamification, several themes emerged in the categories of motivation, attitude, and vocabulary achievement. During the interviewing process, students showed great interest, positive attitude, and signs of elevated motivation towards gamification in second language learning. Table 4.11 presents the categories, themes, and codes of the content analysis.

Table 4.11: Categories, Themes and Codes of the Content Analysis

Categories	Themes	Codes
Motivation	Collaboration	Teamwork, help, together, socialize, friends, communicate
	Setting Goals	Plan, goal, reach, realistic, challenges, clear, concentrate
	Fun	Playing, entertaining, enjoy, surprises
	Interest	Interested in, eager, attention, curious, invested
	Game Design Elements	Badges, levels, leaderboards, competitive, competition, points, win, personalized
Attitude	Atmosphere	Comfortable, positive effect, positive environment
	Behavior	Responsibility, confidence, self-confidence being aware
	Expectations	Believe, effort, feeling encouraged
	Emotions	Adrenaline, ambitious, excitement, desire
Vocabulary Achievement	Retention	Revision, revise, remember, memorize, useful
	Engagement	Participation, effort, wanting to do more
	Success	Knowledge, hard work, successful, achieve
	Instant Feedback	Feedback, knowing what to do next, getting better, attention

For the motivational side, one of the essential factors mentioned by eleven of the students while sharing their perspectives towards different gamification treatments was collaboration. Some of the quoted statements below demonstrate how students

internalized collaboration as a crucial element that affects their perception of second language learning.

> "*I really enjoyed using the revive your friend badge as a reward because I actually gave points to my friend to extend his writing assignment's due date. I was happy because it allowed me to help a friend in need because he was struggling.*" *(S8 – Experimental Group 2)*

> "*Share points with your friend badge helped me to study and socialize with my friends even more.*" *(S12 – Experimental Group 2)*

> "*I believe the teamwork in Quizlet live made me communicate with my friends more while solving problems and questions.*" *(S17 – Experimental Group 1)*

> "*I was more motivated to the English lessons because I love working with my friends in a group and playing games while learning new things.*" *(S19 – Experimental Group 1)*

The deductions that can be made from students' statements is that the implementation of achievement badges promoted collaboration between students and motivated them to help each other out with the badges and get the benefits together. Furthermore, the time attack mode in Quizlet prompted students to work together in a collaborative way to win the game, and while doing that they were able to solve questions regarding vocabulary in an easier way, and they were encouraged to learn more effectively.

Additionally, during the implementation of different gamification treatments, students were working towards a specific goal that was indirectly helping them to learn vocabulary. They were able to overcome certain challenges to reach their goals throughout the gamification process. Eight students asserted in the interviews that gamification enabled them to set and achieve their learning goals effectively. The following statements from students can support this perception toward gamification.

> "*In regular lessons, you are working towards a good grade, but it does not affect you right then and there, you are not working towards a goal but with a pointing system and badges, you have a goal that you*

are trying to achieve." *(S8 – Experimental Group 2)*

"*Working for a specific goal was the reward for me and it was much better than being on the leaderboard. But I think when your goal is realistic, you get what you want from the lesson at the end.*" *(S10 – Experimental Group 1)*

"*I would like to see gamification in other lessons, it is easier to learn and when you are trying to get points and badges, it actually raises your motivation. Also, because you are showing effort, you can concentrate on your next goal.*" *(S15 – Experimental Group 2)*

"*I love challenges. While playing Quizlet, I was racing against time and it was a great challenge for me. I made my plan and tried again and again to become number 1.*" *(S19 – Experimental Group 1)*

It can be deduced from the student statements that different gamification treatments enabled students to set their goals toward second language learning more effectively and realistically. Furthermore, knowing that there is a clear road map with points and rewards prompted students to perform better in classes and hence learn more vocabulary in the process.

Another factor to be considered in aiding to shape students' perception towards different gamified treatments was the element of fun. All the students from the interviews asserted that fun was a crucial element that triggered their motivation to learn more in English lessons when gamification was applied. Some of the following statements below could act as evidence toward this perspective shaped by the element of fun in gamification.

"*Usually when you are coming to the English lesson, you think to yourself, we are going to check homework and complete some worksheets on paper and this demotivates me. With the help of gamification, my motivation started from a higher place and I had fun while learning.*" *(S14 – Experimental Group 2)*

"*Instead of thinking of the lesson as a chore that you have to get to and finish, the games we played helped me to stay motivated and I was having fun. So, it was not about winning and the rest of the lesson proceeded faster for me.*" *(S9 – Experimental Group 1)*

"*The escape room was the best because it was different, from others we played before, but this was new. In the game, we were trying to be quick and winners with my friends, it was fun for vocabulary revision.*" *(S6 – Experimental Group 1)*

"*I enjoyed the gamified lessons because when it is just a worksheet you are given it does not motivate you or make you want to come to lesson earlier, but games do that for me.*" *(S1 – Experimental Group 2)*

As it can be examined from the student statements, the element of fun had created a learning environment in which students demonstrate desire and attention towards learning new vocabulary. This led students to have fun and enjoy the learning process. Unlike the traditional classroom environment, this was achievable through the fun that was generated from the implementation of different gamification treatments.

Some students from both of the experimental groups stated that they were more interested in the English lessons than before due to the implementation of different gamification treatments. Therefore, rising interest due to gamification can be considered as an important factor for motivation. Some of the statements below could work as evidence for this emerging theme.

"*I think I was more invested in the gamified lessons so my motivation was higher than before.*" *(S20 – Experimental Group 2)*

"*Playing games while learning new vocabulary was a great experience for me. I was very eager to play and learn because games are my favorite.*" *(S11 – Experimental Group 1)*

"*Normally, when the teacher says we will play a game in the lesson, it does not catch my interest. But when I was allowed to play those digital applications from my iPad, I felt like I was more motivated to learn new vocabulary.*" *(S7 – Experimental Group 1)*

"*Gamification both improved my interest and vocabulary knowledge because we were playing games while learning which made me feel active and more interested towards the subject and it made me*

want to learn more and not be distracted." *(S3 – Experimental Group 2)*

It can be deduced from the student statements that different gamification treatments created an out of the ordinary way of teaching which indirectly raised students' interest and motivated them towards learning new vocabulary.

Additionally, supporting the elevated perception of students towards gamification, game design elements emerged as one of the leading motivators. Ten students asserted in the interviews that certain game design elements such as points, leaderboards, and badges within the gamification tools created a competitive environment for them and they enjoyed competing with one another. Some of the following statements could provide insight regarding the importance of certain game design elements in gamification.

"*After knowing that I will get rewards from my place on the leaderboard, I was more motivated than before because I wanted to be on top and go to the next level. So, I tried harder to compete, participate and learn.*" *(S12 – Experimental Group 2)*

"*This was not like a normal game. I loved the Quizizz, it was a nice and motivational tool, I liked it because you could get some super power-ups and it changes your performance. I felt like I was in control and this was created personally for me. It also created a competitive environment between us and I liked it.*" *(S16 – Experimental Group 1)*

"*Winning was the most important part of gamification for me. By our nature, as students, we like to win and compete. In the regular lessons, we do not have that opportunity, especially against your friends, it motivates you a lot. When you go down the leaderboard or could not get the badge you want, it lowers your motivation a little bit, but it is okay, I like competing.*" *(S20 – Experimental Group 2)*

"*You look at the leaderboard and there is your name on it, start of the week, you are in the 3rd place and then you see that end of the week you are at the top, not only you see it, but your friends see it too. It was rewarding because it makes other people see your success. Even when I lost some points, I worked harder because I felt more competitive in the rivalry, I felt more powerful.*" *(S3 – Experimental Group 2)*

As it can be perceived from the student statements, game design elements in the gamification tools such as Quizlet, Kahoot, and Quizizz created a competitive environment in which students' desire to learn new vocabulary was significantly boosted. Furthermore, racing against a certain time limit and surprise elements, knowing their places on the leaderboard, and getting achievement badges made their learning experience significantly more effective and exclusive. Therefore, the whole gamification process shaped students' motivational perception towards vocabulary learning because most of them felt like this was not just like any game, this was personalized for them. However, another important finding from one of the student's statements is that due to his place on the leaderboard, his motivation was negatively affected for a while. He also stated that he was able to bounce back from this decreased motivation state which could be considered as one of the valuable findings of the gamification treatment.

On the attitudinal side of the analysis, several students emphasized the change in the classroom atmosphere and how it was an effective environment for vocabulary learning.

> "*You know.. when we come to the lessons, it is usually the same thing over and over again. But when you showed the ClassCraft leaderboard and the badges, everybody was impressed. The whole environment in the classroom changed.*" *(S1 – Experimental Group 2)*

> "*I am pretty good with the internet and online applications. When I knew I could use my skills to win rewards, I felt more comfortable and it had a positive effect on my vocabulary learning.*" *(S13 – Experimental Group 2)*

> "*As the generation Z, we are always online and we have many skills. Using these skills in the lessons was amazing for me and it changed the way I look at English lessons.*" *(S9 – Experimental Group 1)*

From the student statements, it can be concluded that different gamification treatments have the power to change the classroom environment. Students being more comfortable and using technological tools during the lessons can create a more positive language learning environment.

Another important factor for the attitudinal side was the change in student behavior. It was understood from the student statements that even the most uninterested student can be gained with the power of digital gamification tools and game design elements.

> "*Normally I don't really like doing homework because of my high school exam efforts. But, when I see the achievement badges, rewards, and the leaderboard, I was doing everything I can to fulfill my responsibilities and gain more points to get those rewards.*" *(S5 – Experimental Group 2)*

> "*I am a very anxious person. I thought this whole process would create problems for me. But, the quicker I gave the right answers in the gamification tools, I felt more aware and more confident.*" *(S14 – Experimental Group 2)*

> "*When I led my team to victory during Kahoot, I felt really powerful and self-confident.*" *(S10 – Experimental Group 1)*

Student statements showed that, when applied effectively, different gamification tools featuring game design elements could change students' behavior in a positive way. Moreover, one reason for this change of behavior could be the implementation of achievement badges, rewards, and leaderboards that boosts students' awareness and confidence throughout the process.

Smith (1971) and Oroujlou and Vahedi (2011) both stated that the keys to changing attitudes lie in the beliefs and expectations of people. Some statements from the students indicated the importance of expectations during the different gamification treatments and their effect on attitudinal behavior.

> "*I believe other lessons should have gamification, especially the ones I struggle with. Because it motivates me and pushes me to do my best. I actually put in a lot more effort than I would usually do in these four weeks.*" *(S11 – Experimental Group 1)*

> "*These four weeks were much better than I expected. I thought it was going to be only games but it was much more than that. Tools like Quizizz and Quizlet encouraged me to do more and I learned better.*"

(S18 – Experimental Group 2)

It can be deduced from the students' statements that different gamification treatments exceeded students' expectations. For some, it was not just games but the whole experience of gamification that changed their beliefs towards English lessons. Many students stated that they expect other subjects to have gamification in their lesson flows and this created a positive attitude toward English as a whole.

The last factor that shaped students' attitudinal perception was emotions. Students stated that throughout the gamification treatment, they were very excited to learn and some of them said that they were quite ambitious to win. The statements presented below could act as evidence for this attitudinal behavior.

> "*I remember what you (the researcher) said in class. I think my player type is killer. During gamification, all I wanted was to win. I felt really ambitious and I think I learned better because of that. I don't think I would feel like this in another lesson.*" *(S2 – Experimental Group 1)*
>
> "*Learning vocabulary from Quizizz, Kahoot, and Quizlet was very useful. My desire for the lessons increased when I knew that we were going to play games.*" *(S15 – Experimental Group 2)*
>
> "*I am not a person who concentrates well. I believe that the main difference for me was the adrenaline. I was very excited to be in the English lessons and I wished there were more.*" *(S17 – Experimental Group 1)*

From these statements, it could be deduced that because of the gamification tools, students were more ambitious toward the tasks in the English lessons. They were also feeling excited and they left wanting more after the lessons. These positive emotions could help in shaping their attitudinal behavior.

Finally, on the vocabulary achievement side of the analysis, seven students asserted the importance of retention and how having gamification tools in the lesson was effective for that purpose. Below, you could find some statements indicating students' perception toward the importance of gamification tools in the vocabulary achievement aspect of

second language learning.

> "*I liked the escape room personally because before I discovered the escape room, I found myself in trouble in terms of revision but after the escape room, it was easier for me to revise and remember the vocabulary from the escape room.*" *(S2 – Experimental Group 1)*

> "*I used to memorize the words all the time but now I can play games with it and remember the vocabulary better.*" *(S4 – Experimental Group 1)*

> "*I liked Quizlet because when I need to study for exams, I like studying from Quizlet. It helps me to revise the words. While having fun, you can learn new vocabulary and remember them. For me, this was great.*" *(S5 – Experimental Group 2)*

> "*The escape room was different, we were trying to move up the levels and I was remembering the vocabulary necessary so it was useful.*" *(S13 – Experimental Group 2)*

From these statements, it can be concluded that the virtual escape room when used as a gamification tool, amplified students' ability to learn and recall vocabulary. Therefore, it improved their retention abilities while making them show more effort due to being attracted to the task.

Moreover, it was observed from the interviews that engagement emerged as a significant factor that led to vocabulary achievement in the gamified lessons. All the students who participated in the interviews asserted that engagement was a crucial factor shaping their perceptions towards gamification. Below, you could find student statements supporting this point of view.

> "*When people don't want to do more, it is difficult to understand a lesson. When there are badges and badges have value, it makes you want to work more for it. It was great to have gamification because it helped me with my vocabulary knowledge and understanding of the subject.*" *(S18 – Experimental Group 2)*

"*Gamification made me want to show more effort. I did not like the English lessons or vocabulary learning at first, but because of gamification, I came to the lessons happier, and I just wanted to participate and learn more.*" *(S6 – Experimental Group 1)*

"*In our gamification method, we did not have badges or leaderboards, getting the first place had sentimental value which was a good motivator. For this, I was studying a lot and when I saw I can do something well in the game, it helped me with my grades and learning new vocabulary. But, if we had badges and leaderboards, I could see myself showing even more effort.*" *(S4 – Experimental Group 1)*

"*When I got the badge to choose the morning chat topic as a reward, I was able to talk about something I wanted and I engaged with my friends about world issues. Because I wanted this reward a lot, I had to show my vocabulary performance and gain points.*" *(S12 – Experimental Group 2)*

When student statements are examined, it can be deduced that the levels of engagement created through the implementation of different gamification treatments were remarkable. Students were much more excited and engaged in the gamified lessons. Elements such as rewards gained through points and achievement badges were extensively shaping students' perception towards gamification and it affected their vocabulary learning positively.

From what the students mentioned, another important element for vocabulary achievement was success. Students mentioned their hard work and improved vocabulary knowledge throughout the gamification process.

"W*hen I won points and badges at the end of a lesson, I was way more motivated than I used to be towards English lessons, I wanted to be more successful because I was getting something solid after my achievements and hard work.*" *(S1 – Experimental Group 2)*

"*Achieving something is important for me. Whether there is a reward or not, I don't really care. I am racing against myself. Thanks to gamification, I showed myself that I can do better*" *(S16 – Experimental*

Group 1)

"*You want to be successful while playing a game, otherwise why would you play it? In our lessons, combining the game with vocabulary learning made me want to succeed more so I showed more effort in the lessons.*" *(S7 – Experimental Group 1)*

It can be understood from the student statements that they were trying to be more successful with the help of the gamification tools utilized in different gamified lessons. For some of the students, it was not about the reward, they just wanted to do better. However, for some, the usage of leaderboards and rewards through achievement badges was very effective in enhancing their vocabulary learning.

Many students during the interviews mentioned that getting instant feedback both from the gamification tool and the teacher was very effective in their vocabulary learning. Several statements below could prove the effects of instant feedback on students' vocabulary achievement.

"*I was paying more attention to the gamified lessons because while playing, you also get feedback. I could see my negative and positive sides about the topic, and I improved myself through my teacher's feedback.*" *(S3 – Experimental Group 2)*

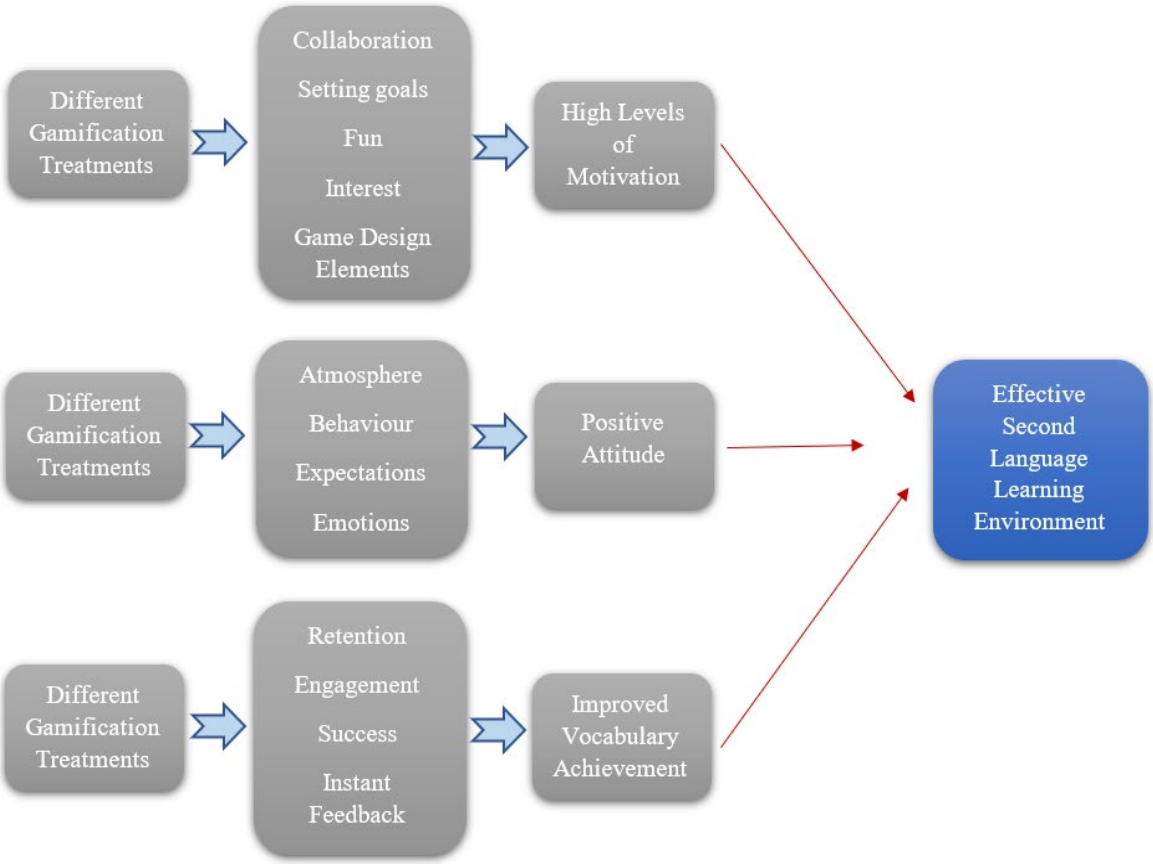
"*While doing worksheets, you need to wait for the teacher to give you feedback, but in applications like Quizizz, Quizlet, and Kahoot, it gives you feedback instantly. Therefore, you can make changes and learn from your mistakes easily.*" *(S8 – Experimental Group 2)*

"*We did not have leaderboards or badges, but I still think gamification helped with my vocabulary learning. In the escape room, even when you make a mistake, the application was helping you. Because of the feedback, I knew which vocabulary I need to study more so I could finish the escape room faster.*" *(S19 – Experimental Group 1)*

Upon examining the students' statements, it could be understood that gamification tools provided instant feedback which helped them to take the necessary action to fix their vocabulary mistakes. Students mentioned that they valued this feature a lot and they were relying on both the clues from the gamification tools and the teacher's feedback.

To sum up, upon examining the student statements and making necessary deductions, the interviews demonstrated that there were several themes revolving around motivation, attitude, and vocabulary achievement. The combination of these themes enhanced students' vocabulary achievement, shaped their motivation and attitudes, and led to a more desirable language learning environment free from the dullness and repetitiveness of traditional teaching methods. Figure 4.1 below shows the summary of students' perceptions regarding the impact of gamification on their learning experience as language learners (see Figure 4.1).

Figure 4.1: The summary of students' perception on the impact of gamification



In the following sections, the motivation and attitude levels of all the students in both of the experimental groups are analyzed in detail, so that the rich data obtained from semi-structured interviews are complemented at a wider scale.

4.5 Findings regarding the perceived motivation questionnaire

To further analyze the motivation levels of both experimental group students after the implementation of different gamification treatments, frequency analysis was conducted on the students' responses to the perceived motivation questionnaire. As the questionnaire had three sub-factors, each sub-factor was analyzed separately. Furthermore, the experimental group – 1 and the experimental group – 2's data is divided in order to have a more comprehensive analysis of students' responses. Lastly, the weighted mean for the five-scale Likert was interpreted as follows: Strongly disagree in the point range of 1.00 - 1.80, Disagree 1.81 - 2.60, Neutral 2.61 – 3.40, Agree 3.41 - 4.20, and Strongly agree 4.21 - 5.00 (Pimentel, 2010).

4.5.1 Findings of the experimental group – 1 on the motivation questionnaire

As stated above, the perceived motivation questionnaire had three sub-factors named satisfaction, intent, and relatedness. As each sub-factor was targeted towards different elements of motivation, the items were pre-categorized. Students' responses towards these items are analyzed in accordance with the respective sub-factor.

First of all, students were asked to answer four statements in the autonomy sub-factor of the perceived motivation questionnaire. The weighted means and the percent of the responses of the 20 students on a five-point Likert scale to the four statements that were taken from the autonomy sub-factor were presented and analyzed below (see Table 4.12).

Table 4.12: Frequency Analysis Results of the Autonomy Sub-Factor – Ex-1

Statements from the Autonomy Sub-factor	Perceived Motivation Questionnaire (N= 20)					
	Distribution of the experimental group - 1 student responses for each statement					
	Mean (SD)	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1) I felt in control of my learning process with gamification.	3.55 (1.276)	10	10	20	35	25
2) I felt interested in a lesson with the gamified approach.	4.05 (1.191)	5	10	5	35	45
3) I felt confident participating in gamified activities.	3.45 (1.099)	5	15	25	40	15
4) I felt my gamified learning experience was personalized.	3.00 (1.026)	10	15	45	25	5
Overall	3.51 (1.148)	7,5	12,5	23,75	33,75	22,5
Note: Coding the students' responses as numeric values result in:				**Mean** **1.00-1.80** = 'Strongly Disagree' **1.81-2.60** = 'Disagree' **2.61-3.40** = 'Undecided' **3.41-4.20** = 'Agree' **4.21-5 .00** = 'Strongly Agree'		

As it can be seen from Table 4.12, responses from the students in the experimental group – 1 ranged from (M: 4.05) for statement 2 'I felt interested in a lesson with gamified approach' to (M: 3.00) for statement 4 'I felt my gamified learning experience was personalized'. In the first three items, the majority of the students supported (agree / strongly agree) the statements that suggest the use of gamification boosted their autonomy. In other words, most of the students felt interest, confidence, and control while participating in gamified activities during the treatment. On the other hand, the mean response of statement 4 (M: 3.00) showed that students were undecided on the personalization of the gamification approach. This means that students in the experimental group – 1 (45%) were not in agreement on whether their gamification treatment felt personal to them or not. As noted above, when the overall mean value of the autonomy sub-factor is examined, students lean towards agreement (M:3.51).

Secondly, students were asked to answer four statements in the competence sub-factor of the perceived motivation questionnaire.

The weighted means and the percent of the responses of the 20 students on a five-point

Likert scale to the four statements that were taken from the competence sub-factor were presented and analyzed below (see Table 4.13).

Table 4.13: Frequency Analysis Results of the Competence Sub-Factor – Ex-1

Statements from the Competence Sub-factor	**Perceived Motivation Questionnaire (N= 20)**					
	Distribution of the experimental group - 1 student responses for each statement					
	Mean (SD)	**Strongly Disagree**	**Disagree**	**Undecided**	**Agree**	**Strongly Agree**
5) I felt that I was having fun while also learning effectively.	4.10 (1.021)	0	15	0	45	40
6) I felt that I completed the gamified tasks easily.	3.60 (1.142)	5	15	15	45	20
7) It was easy to understand due to receiving instant feedback from the teacher.	3.75 (1.293)	10	5	20	30	35
8) It was easy to find the right information I need for a gamified lesson.	2.90 (1.210)	15	20	35	20	10
Overall	3.59 (1.167)	7.5	13.75	17.5	35	26.25
Note: Coding the students' responses as numeric values result in:				**Mean** **1.00-1.80** = 'Strongly Disagree' **1.81-2.60** = 'Disagree' **2.61-3.40** = 'Undecided' **3.41-4.20** = 'Agree' **4.21-5 .00** = 'Strongly Agree'		

Student responses for the competence sub-factor on Table 4.13 ranged from (M: 4.10) for statement 5 'I felt that I was having fun while also learning effectively' to (M: 2.90) for statement 8 'It was easy to find the information I need for a gamified lesson'. For statements 5-6 and 7, students' responses showed that the majority of them were in agreement (agree / strongly agree), stating that the use of gamification boosted their competence. In other words, most of the students felt that they were completing the gamified tasks with ease while having fun and instant feedback. On the other hand, the mean response of statement 8 (M: 2.90) showed that students were undecided when it comes to the easiness of finding the right information to support their gamified experience. This means that students in the experimental group – 1 (35%) were not in agreement on whether finding their way in the gamified lessons was easy or not. As noted above, when the overall mean value of the competence sub-factor is examined, students lean towards

agreement (M:3.59).

Finally, in the relatedness sub-factor of the perceived motivation questionnaire, students were asked to answer four statements.

The weighted means and the percent of the responses of the 20 students on a five-point Likert scale to the four statements that were taken from the relatedness sub-factor were presented and analyzed below (see Table 4.14).

Table 4.14: Frequency Analysis Results of the Relatedness Sub-Factor – Ex-1

Statements from the Relatedness Sub-factor	**Perceived Motivation Questionnaire (N= 20)**					
	Distribution of the experimental group - 1 student responses for each statement					
	Mean (SD)	**Strongly Disagree**	**Disagree**	**Undecided**	**Agree**	**Strongly Agree**
9) It was easy to share the gamified experience with peers.	3.55 (1.146)	0	25	20	30	25
10) It was easy to access shared information from peers.	3.85 (.988)	0	5	40	20	35
11) It was easy for me to share my likes/dislikes about gamification with my peers.	3.50 (1.357)	5	30	5	30	30
12) It was easy to discuss the content of the gamified lesson with my peers.	3.10 (1.373)	10	35	10	25	20
Overall	3.50 (1.216)	3.75	23.75	18.75	26.25	27.5
Note: Coding the students' responses as numeric values result in:				**Mean** **1.00-1.80** = 'Strongly Disagree' **1.81-2.60** = 'Disagree' **2.61-3.40** = 'Undecided' **3.41-4.20** = 'Agree' **4.21-5 .00** = 'Strongly Agree'		

As it can be seen from Table 4.14, responses from the students in the experimental group – 1 ranged from (M: 3.85) for statement 10 'It was easy to access shared information from peers' to (M: 3.10) for statement 12 'It was easy to discuss the content of the gamified lesson with my peers'. In the first three items of this sub-factor, students' responses showed that the majority of them were in agreement (agree / strongly agree) with the statements. In other words, most of the students thought it was easy to share their likes and dislikes regarding the gamified experience while working as a group to access the

necessary information. On the other hand, the mean response of statement 12 (M: 3.10) suggested that students were undecided on the difficulty of being able to discuss the gamified content with their friends. As noted above, when the overall mean value of the relatedness sub-factor is examined, students lean more towards agreement (M:3.50). Ultimately, when all the sub-factors of the perceived motivation questionnaire are examined, the experimental group – 1 students were in fair agreement with the majority of the items related to their motivation. The highest-ranked sub-factor was observed to be competence followed by autonomy and relatedness.

4.5.2 Findings of the experimental group – 2 on the motivation questionnaire

First of all, students in the experimental group – 2 were also asked to answer four statements in the autonomy sub-factor of the perceived motivation questionnaire.

The weighted means and the percent of the responses of the 20 students on a five-point Likert scale to the four statements that were taken from the autonomy sub-factor were presented and analyzed below (see Table 4.15).

Table 4.15: Frequency Analysis Results of the Autonomy Sub-Factor – Ex-2

Statements from the Autonomy Sub-factor	**Perceived Motivation Questionnaire (N= 20)**					
	Distribution of the experimental group - 2 student responses for each statement					
	Mean (SD)	**Strongly Disagree**	**Disagree**	**Undecided**	**Agree**	**Strongly Agree**
1) I felt in control of my learning process with gamification.	4.05 (.826)	0	0	30	35	35
2) I felt interested in a lesson with the gamified approach.	4.45 (.887)	0	5	10	20	65
3) I felt confident participating in gamified activities.	4.05 (1.099)	0	15	10	30	45
4) I felt my gamified learning experience was personalized.	4.05 (.999)	0	10	15	35	40
Overall	4.15 (.953)	0	7.5	16.25	30	46.25
Note: Coding the students' responses as numeric values result in:				**Mean** **1.00-1.80** = 'Strongly Disagree' **1.81-2.60** = 'Disagree' **2.61-3.40** = 'Undecided' **3.41-4.20** = 'Agree' **4.21-5 .00** = 'Strongly Agree'		

As it can be seen from Table 4.15, responses from the students in the experimental group – 2 ranged from (M: 4.45) for statement 2 'I felt interested in a lesson with gamified approach' to (M: 4.05) for statement 4 'I felt my gamified learning experience was personalized'. In all four of the items in this sub-factor, students' responses showed that the majority of them were in agreement (agree / strongly agree) with the statements that suggest the use of gamification boosted their autonomy. In other words, most of the students felt confidence and control while participating in gamified activities during the treatment. Students were also in relatively high agreement (75%) when it comes to the personalization of the gamified treatment. Additionally, the mean response of statement 2 (M: 4.45) showed that average student responses were consistently positive to this item. This means that students in the experimental group – 1 (85%) were quite interested in the gamified approach during the English lessons. As noted above, when the overall mean value of the autonomy sub-factor is examined, students lean towards agreement (M:4.15).

Secondly, the experimental group – 2 students were asked to answer four statements in the competence sub-factor of the perceived motivation questionnaire.
The weighted means and the percent of the responses of the 20 students on a five-point Likert scale to the four statements that were taken from the competence sub-factor were presented and analyzed below (see Table 4.16).

Table 4.16: Frequency Analysis Results of the Competence Sub-Factor – Ex-2

Statements from the Competence Sub-factor	Perceived Motivation Questionnaire (N= 20)					
	Distribution of the experimental group - 2 student responses for each statement					
	Mean (SD)	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
5) I felt that I was having fun while also learning effectively.	4.55 (.877)	0	0	10	25	65
6) I felt that I completed the gamified tasks easily.	3.95 (.826)	0	5	20	50	25
7) It was easy to understand due to receiving instant feedback from the teacher.	4.35 (.745)	0	0	15	35	50
8) It was easy to find the right information I need for a gamified lesson.	3.65 (.933)	0	10	35	35	20
Overall	4.13 (.845)	0	3.75	20	36.25	40
Note: Coding the students' responses as numeric values result in:				**Mean** **1.00-1.80** = 'Strongly Disagree' **1.81-2.60** = 'Disagree' **2.61-3.40** = 'Undecided' **3.41-4.20** = 'Agree' **4.21-5 .00** = 'Strongly Agree'		

Student responses for the competence sub-factor on Table 4.16 ranged from (M: 4.55) for statement 5 'I felt that I was having fun while also learning effectively' to (M: 3.65) for statement 8 'It was easy to find the information I need for a gamified lesson'. For all four statements in this sub-factor, the majority of students were in agreement (agree / strongly agree) that suggests the use of gamification boosted their competence. Additionally, the students agree more strongly with statements 5 and 7 emphasizing the importance of fun and instant feedback for their competence. On the other hand, the lowest ranked item was statement 8 (M: 3.65) but it was still on the agreement side of the scale. As noted above, when the overall mean value of the competence sub-factor is examined, students lean towards agreement (M:4.13).

Lastly, students from the experimental group – 2 were also asked to answer four statements in the relatedness sub-factor of the perceived motivation questionnaire.

The weighted means and the percent of the responses of the 20 students on a five-point Likert scale to the four statements that were taken from the relatedness sub-factor were

presented and analyzed below (see Table 4.17).

Table 4.17: Frequency Analysis Results of the Relatedness Sub-Factor – Ex-2

Statements from the Relatedness Sub-factor	**Perceived Motivation Questionnaire (N= 20)**					
	Distribution of the experimental group - 2 student responses for each statement					
	Mean (SD)	**Strongly Disagree**	**Disagree**	**Undecided**	**Agree**	**Strongly Agree**
9) It was easy to share the gamified experience with peers.	3.70 (1.218)	0	25	15	25	35
10) It was easy to access shared information from peers.	3.95 (.999)	0	10	20	35	35
11) It was easy for me to share my likes/dislikes about gamification with my peers.	4.10 (.968)	0	10	10	40	40
12) It was easy to discuss the content of the gamified lesson with my peers.	4.10 (.912)	0	5	20	35	40
Overall	3.96 (1.024)	0	12.5	16.25	33.75	37.5
Note: Coding the students' responses as numeric values result in:				**Mean** **1.00-1.80** = 'Strongly Disagree' **1.81-2.60** = 'Disagree' **2.61-3.40** = 'Undecided' **3.41-4.20** = 'Agree' **4.21-5 .00** = 'Strongly Agree'		

As it can be seen from Table 4.17, responses from the students in the experimental group – 2 ranged from (M: 4.10) for statement 11 'It was easy for me to share my likes/dislikes about gamification with my peers' to (M: 3.70) for statement 9 'It was easy to share the gamified experience with peers'. In all four of the items in this sub-factor, students' responses lean toward agreement (agree / strongly agree). In other words, the majority of the students thought it was easy to interact with their friends while sharing their likes and dislikes towards the gamified experience. Statement 9 was on the lowest side of the four statements while still being on the agreement side. As noted above, when the overall mean value of the relatedness sub-factor is examined, students lean more towards agreement (M:3.96). In conclusion, when all the sub-factors of the perceived motivation questionnaire are examined, the experimental group – 2 students were in noticeable agreement with the majority of the items related to their motivation. Unlike the experimental group – 1, autonomy was observed to be the highest-ranked sub-factor

followed by competence and relatedness.

4.6 Findings regarding the attitude scale

In addition to motivation, both experimental group students' attitude levels after the implementation of different gamification treatments were further examined and to measure it, frequency analysis was conducted on the students' responses to the attitude scale. As the scale had three sub-factors, each sub-factor was analyzed separately. However, it is important to point out that, as there were negative statements in the attitude scale, those statements were reverse-coded during the analysis of the data in order to avoid ambiguity. Furthermore, the experimental group – 1 and the experimental group – 2's data is divided in order to have a more comprehensive analysis of students' responses. Finally, the weighted mean for the five-scale Likert was interpreted as follows: Strongly disagree in the point range of 1.00 - 1.80, Disagree 1.81 - 2.60, Neutral 2.61 – 3.40, Agree 3.41 - 4.20, and Strongly agree 4.21 - 5.00 (Pimentel, 2010).

4.6.1 Findings of the experimental group – 1 on the attitude scale

As stated above, the attitude scale had three sub-factors named satisfaction, intent, and relatedness. As each sub-factor was targeted towards different elements of attitude, the items were pre-categorized. Students' responses towards these items are analyzed in accordance with the respective sub-factor.

First of all, students in the experimental group – 1 were asked to answer five statements in the satisfaction sub-factor of the attitude scale. The means and the percent of the responses of the 20 students on a five-point Likert scale to five statements that were taken from the satisfaction sub-factor were presented and analyzed below (see Table 4.18).

Table 4.18: Frequency Analysis Results of the Satisfaction Sub-Factor – Ex-1

Statements from the Satisfaction Sub-factor	Attitude Scale (N= 20)					
	Distribution of the experimental group - 1 student responses for each statement					
	Mean (SD)	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1) I enjoy lessons thought with a gamified approach.	4.05 (.759)	0	0	25	45	30
2) *The concept of gamification bores me during the lesson flow.	3.75 (1.118)	0	20	15	35	30
3) *I feel threatened when gamification activities are introduced.	3.25 (1.020)	0	25	40	20	15
4) I can focus better to understand the subject when gamification activities are used.	3.30 (.979)	5	15	30	45	5
5) Gamification activities in lessons prompt me to work harder.	3.15 (1.226)	10	20	30	25	15
Overall	3.50 (1.020)	3.75	20	35	42.5	23.75
Note: Coding the students' responses as numeric values result in: *: Reverse coded statements toward gamification				**Mean** **1.00-1.80** = 'Strongly Disagree' **1.81-2.60** = 'Disagree' **2.61-3.40** = 'Undecided' **3.41-4.20** = 'Agree' **4.21-5 .00** = 'Strongly Agree'		

As it can be seen from Table 4.18, student responses from the experimental group – 1 for the satisfaction sub-factor of the attitude scale show variation. The highest ranked student response (M: 4.05) is statement 1 'I enjoy lessons thought with a gamified approach'. In other words, the majority of the students (75%) stated that they enjoyed the gamification integrated into the English lessons. Furthermore, as a reversed statement, the second item tended towards disagreement. This means that most of the students did not find the gamification process boring. On the other hand, for the last three items of this sub-factor, students' agreement levels were noticeably lower. In other words, students remained undecided about the effects of gamification on their focus and hard work. However, when the overall mean value is examined (M: 3.50), the majority of the students were satisfied with the gamified elements introduced in the English lessons.

Secondly, in the intent sub-factor of the attitude scale, students in the experimental group – 1 were asked to answer five statements.

The means and the percent of the responses of the 20 students on a five-point Likert scale to five statements that were taken from the intent sub-factor were presented and analyzed below (see Table 4.19).

Table 4.19: Frequency Analysis Results of the Intent Sub-Factor – Ex-1

Statements from the Intent Sub-factor	**Attitude Scale (N= 20)**					
	Distribution of the experimental group - 1 student responses for each statement					
	Mean (SD)	**Strongly Disagree**	**Disagree**	**Undecided**	**Agree**	**Strongly Agree**
6) *Gamified approach in a lesson causes confusion and therefore makes my learning difficult.	3.25 (1.293)	10	20	25	25	20
7) Knowing that there are game elements in a lesson creates a desire in me toward the lesson.	3.65 (1.182)	5	10	30	25	30
8) *There is absolutely no need for a gamified approach in second language lessons.	3.85 (1.226)	5	10	20	25	40
9) The game elements in a lesson raise my curiosity to the task.	3.50 (1.235)	0	30	20	20	30
10) *I am not interested in the concept of gamification.	3.85 (1.182)	5	10	15	35	35
Overall	3.62 (1.224)	6.25	20	27.5	32.5	38.75
Note: Coding the students' responses as numeric values result in: *: Reverse coded statements toward gamification				**Mean** **1.00-1.80** = 'Strongly Disagree' **1.81-2.60** = 'Disagree' **2.61-3.40** = 'Undecided' **3.41-4.20** = 'Agree' **4.21-5 .00** = 'Strongly Agree'		

Student responses for the intent sub-factor on Table 4.19 ranged from (M: 3.85) for statement 8 'There is absolutely no need for a gamified approach in second language lessons' to (M: 3.25) for statement 6 'Gamified approach in a lesson causes confusion, therefore, makes my learning difficult'. The majority of students were in agreement (agree / strongly agree) with the last four items of this sub-factor. In other words, while gamification evoked students' desire and curiosity, they were quite interested in the whole

process. On the other hand, the lowest ranked item, statement 6 showed that students were undecided whether gamification affected their learning negatively by creating confusion or not. Finally, when the overall mean value of the intent sub-factor is examined, students were tending more toward agreement (M:4.13).

Finally, in the willingness sub-factor of the attitude scale, students in the experimental group – 1 were asked to answer four statements.
The means and the percent of the responses of the 20 students on a five-point Likert scale to four statements that were taken from the willingness sub-factor were presented and analyzed below (see Table 4.20).

Table 4.20: Frequency Analysis Results of the Willingness Sub-Factor – Ex-1

Statements from the Willingness Sub-factor	**Attitude Scale (N= 20)**					
	Distribution of the experimental group - 1 student response for each statement					
	Mean (SD)	**Strongly Disagree**	**Disagree**	**Undecided**	**Agree**	**Strongly Agree**
11) I would like to see more subjects teaching lessons with a gamified approach in the future	4.30 (1.031)	0	10	10	20	60
12) When there is a subject that is difficult for me to comprehend, I use gamification techniques to understand it better.	2.90 (1.373)	20	15	40	5	20
13) *Using game elements in a lesson is a waste of time.	4.25 (.967)	0	5	20	20	55
14) Gamified activities should be used more effectively in education.	3.70 (1.261)	10	5	20	35	30
Overall	3.79 (1.158)	7.5	8.75	22.5	20	41.25
Note: Coding the students' responses as numeric values result in: *: Reverse coded statements toward gamification				**Mean** **1.00-1.80** = 'Strongly Disagree' **1.81-2.60** = 'Disagree' **2.61-3.40** = 'Undecided' **3.41-4.20** = 'Agree' **4.21-5 .00** = 'Strongly Agree'		

As it can be seen from Table 4.20, student responses from the experimental group – 1 for the intent sub-factor of the attitude scale show variation. There is a relatively high agreement for statement 11 'I enjoy lessons thought with a gamified approach' and

statement 13 ‘Using game elements in a lesson is a waste of time’. In other words, the majority of the students supported (strongly agree) that more subjects should implement the gamified approach in their lessons and that it is not a waste of time for their learning process. However, the most variable agreement was shown in statement 12. This means that students remained undecided about deciding to use gamification techniques on a subject that they are already not good at. However, when the overall mean value is examined (M: 3.79), the majority of the students were tending towards agreement showing that their interest and willingness were aligned with the gamified approach. To sum up, when all the sub-factors of the attitude scale are examined, the experimental group – 1 students were in fair agreement with the majority of the items related to their attitudes. The highest-ranked sub-factor was observed to be willingness followed by intent and satisfaction.

4.6.2 Findings of the experimental group – 2 on the attitude scale

Students in the experimental group – 2 were also asked to answer five statements in the satisfaction sub-factor of the attitude scale.

The means and the percent of the responses of the 20 students on a five-point Likert scale to five statements that were taken from the satisfaction sub-factor were presented and analyzed below (see Table 4.21).

Table 4.21: Frequency Analysis Results of the Satisfaction Sub-Factor – Ex-2

Statements from the Satisfaction Sub-factor	**Attitude Scale (N= 20)**					
	Distribution of the experimental group - 2 student responses for each statement					
	Mean (SD)	**Strongly Disagree**	**Disagree**	**Undecided**	**Agree**	**Strongly Agree**
1) I enjoy lessons thought with a gamified approach.	4.35 (1.137)	5	0	20	5	70
2) *The concept of gamification bores me during the lesson flow.	4.10 (1.165)	5	10	0	40	45
3) *I feel threatened when gamification activities are introduced.	3.80 (1.056)	5	5	20	45	25
4) I can focus better to understand the subject when gamification activities are used.	3.75 (1.164)	10	0	20	45	25
5) Gamification activities in lessons prompt me to work harder.	3.75 (1.251)	5	10	30	15	40
Overall	3.95 (1.155)	7.5	6.25	22.5	37.5	51.25
Note: Coding the students' responses as numeric values result in: *: Reverse coded statements toward gamification				**Mean** **1.00-1.80** = 'Strongly Disagree' **1.81-2.60** = 'Disagree' **2.61-3.40** = 'Undecided' **3.41-4.20** = 'Agree' **4.21-5 .00** = 'Strongly Agree'		

As it can be seen from Table 4.21, responses from the students in the experimental group – 2 ranged from (M: 4.35) for statement 1 'I enjoy lessons thought with a gamified approach' to (M: 3.75) for statement 4 'I can focus better to understand the subject when gamification activities are used'. In all five of the items in this sub-factor, students' responses showed that the majority of them were in agreement (agree / strongly agree) with the statements that suggest the use of gamification was a satisfying experience for them. In other words, most of the students felt that gamification affected their ability to focus and study with no signs of boredom. Additionally, the mean response of statement 1 (M: 4.45) showed that average student responses were consistently positive to this item. This means that students in the experimental group – 1 (85%) were very appreciative of the integration of gamification during the English lessons. As noted above, when the overall mean value of the satisfaction sub-factor is examined, students lean towards

agreement (M: 3.95).

Secondly, in the intent sub-factor of the attitude scale, students in the experimental group – 2 were asked to answer five statements.

The means and the percent of the responses of the 20 students on a five-point Likert scale to five statements that were taken from the intent sub-factor were presented and analyzed below (see Table 4.22).

Table 4.22: Frequency Analysis Results of the Intent Sub-Factor – Ex-2

Statements from the Intent Sub-factor	**Attitude Scale (N= 20)**					
	Distribution of the experimental group - 2 student responses for each statement					
	Mean (SD)	**Strongly Disagree**	**Disagree**	**Undecided**	**Agree**	**Strongly Agree**
6) *Gamified approach in a lesson causes confusion and therefore makes my learning difficult.	4.35 (.587)	0	0	5	55	40
7) Knowing that there are game elements in a lesson creates a desire in me toward the lesson.	4.25 (.786)	0	5	5	50	40
8) *There is absolutely no need for a gamified approach in second language lessons.	4.55 (.686)	0	0	10	25	65
9) The game elements in a lesson raise my curiosity to the task.	4.30 (.801)	0	5	5	45	45
10) *I am not interested in the concept of gamification.	4.25 (1.164)	5	5	10	20	60
Overall	4.34 (.805)	1.25	3.75	8.75	48.75	62.5
Note: Coding the students' responses as numeric values result in: *: Reverse coded statements toward gamification				**Mean** **1.00-1.80** = 'Strongly Disagree' **1.81-2.60** = 'Disagree' **2.61-3.40** = 'Undecided' **3.41-4.20** = 'Agree' **4.21-5 .00** = 'Strongly Agree'		

As it can be seen in Table 4.22, the responses to the five statements related to the intent sub-factor lean toward high agreement (agree / strongly agree). The two highest ranked items were statement 6 'Gamified approach in a lesson causes confusion, therefore, makes

my learning difficult' and statement 8 'There is absolutely no need for a gamified approach in second language lessons'. In other words, almost none of the students felt confusion during gamified instruction or questioned its necessity. Additionally, when the overall mean value is examined (M: 4.34), students were tending towards a high agreement that shows their intentions shaping their attitudinal behavior.

Finally, in the willingness sub-factor of the attitude scale, students in the experimental group – 2 were also asked to answer four statements.

The means and the percent of the responses of the 20 students on a five-point Likert scale to four statements that were taken from the willingness sub-factor were presented and analyzed below (see Table 4.23).

Table 4.23: Frequency Analysis Results of the Willingness Sub-Factor – Ex-2

Statements from the Willingness Sub-factor	**Attitude Scale (N= 20)**					
	Distribution of the experimental group - 2 student responses for each statement					
	Mean (SD)	**Strongly Disagree**	**Disagree**	**Undecided**	**Agree**	**Strongly Agree**
11) I would like to see more subjects teaching lessons with a gamified approach in the future.	4.40 (1.142)	5	5	5	15	70
12) When there is a subject that is difficult for me to comprehend, I use gamification techniques to understand it better.	3.70 (1.261)	5	15	20	25	35
13) *Using game elements in a lesson is a waste of time.	4.30 (1.261)	5	10	5	10	70
14) Gamified activities should be used more effectively in education.	4.25 (1.209)	5	10	0	25	60
Overall	3.96 (1.024)	5	10	7.5	18.75	58.75
Note: Coding the students' responses as numeric values result in: *: Reverse coded statements toward gamification				**Mean** **1.00-1.80** = 'Strongly Disagree' **1.81-2.60** = 'Disagree' **2.61-3.40** = 'Undecided' **3.41-4.20** = 'Agree' **4.21-5 .00** = 'Strongly Agree'		

When student responses in Table 4.23 are examined, the majority of the students lean towards relatively high agreement (agree / strongly agree) with the statements. The highest ranked item was statement 11 'I would like to see more subjects teaching lessons with a gamified approach in the future' followed by statement 13 'Using game elements in a lesson is a waste of time'. In other words, students were consistently positive towards the need for gamification in other subjects and its value for their learning process. Additionally, the mean response of statement 12 showed that students (60%) used gamification techniques to understand a subject even when it was challenging. Lastly, emphasizing their enthusiasm towards the integration of gamification in the English lessons, students' responses for the overall willingness sub-factor were also consistently positive (M: 3.96). To conclude, when all the sub-factors of the attitude scale are examined, the experimental group – 2 students were in consistent agreement with the majority of the items related to their attitudes. Unlike the experimental group – 1, intent was observed to be the highest-ranked sub-factor followed by willingness and satisfaction.

Ultimately, both quantitative and qualitative data revealed that students came to the English lessons with positive attitudes and enhanced motivation levels. Students were aware that with the implementation of different gamification tools, their actions will be rewarded and they will be in a competitive environment. Results also revealed that the combination of high engagement, positive expectations, and the use of effective game design elements led to a more effective second language learning environment enhancing students' vocabulary achievement. This has also generated a significant increase in the experimental groups' post-test scores emphasizing the positive effects of gamification.

CHAPTER V
FINDINGS & DISCUSSION

5.1 Introduction

This chapter aims to discuss the findings of the study and provide connections to the related literature in accordance with the research questions.

5.2 Discussion of Findings

The aim of this quasi-experimental study was to investigate the effects of gamified approach on middle school students' vocabulary achievement, motivation, and attitude in English lessons. To conduct an in-depth analysis, the experimental groups and the control group were compared in terms of vocabulary achievement both before and after the gamified treatment and this data was analyzed via respective parametric tests. Moreover, the experimental group – 1 and experimental group – 2 students were interviewed and they were given motivation and attitude questionnaires after the differentiated gamification treatments. The data obtained through these qualitative and quantitative means were analyzed via content and frequency analysis in order to understand the effects of different gamification treatments on students' academic achievement, motivation, and attitudes. Data triangulation was achieved through the combination of quantitative and qualitative means. Therefore, the results of this study will be explored in relation to the research questions regarding vocabulary achievement, motivation, and attitude.

5.2.1 Effects of Differentiated Gamification Treatments on Students' Vocabulary Achievement

RQ1: Does gamification have any effects on learners' vocabulary achievement? RQ2: Do design features of gamification have any effects on learners' vocabulary achievement? The purpose of the first and the second research question was to investigate the effects of gamification in general and the effects of different gamification treatments with various game design elements on students' vocabulary achievement. In order to answer these research questions, a pre-test was implemented for both the experimental groups and the control group before the gamification and the traditional treatments. The tests included questions about the target vocabulary from the class reader in a contextualized format. As there was no significant difference in any of the groups' pre-

test scores, it was assumed that they had similar academic levels of vocabulary knowledge. The data in the post-test showed meaningful differences between the implementation of the traditional method and the enhanced gamification treatment. Upon comparing the post-test mean scores of the control group, the experimental group – 1, and the experimental group – 2, a statistically significant difference was found in the favor of the experimental group – 2. These findings could be explained with the enhanced implementation of gamification and game design elements. In the semi-structured interviews, students from the experimental groups stated that the usage of Quizlet, Quizizz, Kahoot, and the virtual Escape Room helped them with their vocabulary retention as well as their commitment and engagement towards the lesson. These results showed coherence with the findings of Alemi (2010), Karaaslan et al. (2018), and Taylor and Reynolds (2018) as they have also found that gamification allowed students to demonstrate higher rates of vocabulary retention. Furthermore, in the interviews, many students stated that they felt more engaged in lesson tasks because of the gamification tools. These findings echoed with the claims of Schmitt (2000) stating that to maximize vocabulary retention, the learning environment should feature student engagement rather than teacher-oriented lessons. Given the background of the differentiated gamification treatments, they could have fostered the necessary engagement which made the lesson student-oriented. Overall, the difference between the control and the experimental groups was in line with the findings of the following studies in which experimental groups outperformed the control group in learning new vocabulary supporting that gamified way of teaching increased students' academic achievement towards learning new vocabulary (Kingsley & Hagen, 2018; Huyen & Nga, 2003; Glowacki, Kruikova & Avshenyuk, 2018; Mert & Samur, 2018; Kayseroğlu & Samur, 2018; Abrams & Walsh, 2014).

On the other hand, when the pre-test and post-test scores of the control group were compared, no statistical difference was demonstrated. This could be considered as an indication of students finding the traditional methods of teaching ineffective and insufficient. These findings echoed those of Lee and Hammer (2011), Kapp (2012), and McGonigal (2011) who also asserted that students are becoming numb to the traditional methods of teaching and innovative methods must be found to overcome this obstacle.

Another important fact that must be pointed out is that although the experimental group – 1 and experimental group – 2 received gamified instruction, their gamification treatments

were differentiated with the addition of weekly leaderboards, points, levels, achievement badges, and rewards. Upon comparison of the pre and post-vocabulary tests, both the experimental group – 1 and experimental group – 2 showed statistically significant differences. This can be interpreted as both gamification treatments being effective in students' vocabulary learning. However, the variety in the gamification treatments resulted in a significant outperformance in favor of the students from the experimental group – 2 compared to the control group and the experimental group – 1. This result could be explained by the rewards factor as it was an essential difference in the implementation of gamification to the experimental group – 2. Berber (2018) suggested that the SAPS Framework of Zichermann and Cunningham (2011) must be considered when introducing rewards in a gamified context as the "wrong reward" could make the students lose their motivation and thus lower their academic achievement just as the "right one" can make an everlasting effect. Results from the qualitative data indicated the students' perception toward the quality of the rewards. Since the SAPS framework (Zichermann & Cunningham, 2011) was utilized in the creation of the rewards, students mentioned that the rewards obtained from the achievement badges were not materialistic, they were able to show their social position to other friends, obtain distinct privileges and be more inclined to learn new vocabulary effectively. According to the SAPS framework, rewards that feature status and access are the biggest contributors to creating intrinsic motivation, and they can amplify students' academic achievement (Zichermann & Cunningham, 2011). Students in the interviews stated that through instant immediate feedback, they were able to do better in the gamification tools and it was very useful for their vocabulary learning process. In addition, through leaderboards and achievement badges, the rewards they earned such as using the teacher's desk, deciding on the morning chat topic, extending an assignments' due date, and getting extra points allowed them to work harder and become more successful in vocabulary learning. Furthermore, since the gamification treatment of experimental group – 2 was full of challenges, instant feedback, and rewards, it offered support to Lepper (1998)'s claim that challenges and rewards could foster intrinsic motivation needed for better academic results. Kapp (2012) also asserted the importance of instant feedback as it can affect players' learning ability. Additionally, these results were in line with the findings of the earlier studies in which the integration of leaderboards, points, and achievement badges in the language learning environment was utilized and it boosted vocabulary learning and allowed students to have higher academic achievement. (Hamari, Sarsa & Koivisto, 2014; Hanus & Fox, 2015; Lam, 2014;

Kayseroglu & Samur, 2018).

Taking qualitative and quantitative data into consideration, it could be concluded that game elements such as challenges, collaboration, and instant feedback combined with the integration of leaderboards and non-materialistic rewards could be the key to creating an efficient language learning environment. This results in engaged students who acquired and recalled the target vocabulary better than their peers. However, it must be pointed out that, the fact that both experimental groups made significant improvements from pre-test to post-test, but the control group did not make similar improvements suggests that both types of treatment had some beneficial effects. It also suggests that a longer treatment duration might result in a significant change between experiment group – 1 and the control group. Additionally, both experimental groups benefited from the gamification treatment even though the impact was more noticeable for the experimental group – 2 than for the experimental group – 1. Therefore, these findings provide some evidence in favor of the facilitating effects of differentiated gamification treatments in L2 vocabulary learning.

5.2.2 Effects of Differentiated Gamification Treatments on Students' Motivational Perception

RQ3: What are the EFL learners' perceptions towards the differentiated gamification treatments in terms of their academic achievement, motivation and attitudes? One of the other major research questions of this study was asked to find out about the middle school students' motivational perceptions towards vocabulary learning after differentiated gamification treatments. To provide an answer to this question, semi-structured interviews and frequency analysis were utilized for both experimental group students.

In the interviews, many students stated the importance of teamwork, challenges, entertainment, and the use of game design elements. Students mentioned that they enjoyed overcoming challenges and learning vocabulary indirectly. Furthermore, students also asserted that through leaderboards, they were competing against one another in a gamified context which was fun and that during their time participating in these activities, time was going by faster. This could be related to the Flow Theory of Csikszentmihalyi (2014) as the tasks in the gamification tools were carefully constructed according to the ability of the students which allowed them to avoid getting bored or overly excited. In the

interviews, students also expressed that their motivation was higher than before because they had specific goals which enabled them to reach a higher level of performance. They had more commitment to the task. As the Goal-Setting theory in the related literature suggests, goals in a lesson should not be weak in order to keep students engaged with the learning process (Locke & Latham, 1990). In the gamification treatment, students' goals were not weak, and they were actively being measured with points, leaderboards, and achievement badges.

In order to complement the findings of the qualitative side, a perceived motivation questionnaire was applied to both experimental group students after the 4-week gamification process.

In the perceived motivation questionnaire, there were three sub-factor items; autonomy, competence, and relatedness. Some of the highlights from the autonomy sub-factor were 'I felt in control of my learning process with gamification' and 'I felt my gamified learning experience was personalized'. In this section, a sense of control and personalization were the items that stood out. Both experimental group students responded favorably toward the control item. In other words, they were seeing gamification as a controlling element of their learning process. It is noteworthy that, this sense of control could have been fostered through the different gamification treatments that featured various game design elements. Supporting this further, on the qualitative side, two students also responded that they felt that they were in charge throughout their gamification process. On the other hand, the experimental group – 2 students responded more favorably towards the personalization item whereas students from the experimental group – 1 demonstrated variable agreement. It is probable that, due to the achievement badges and rewards presented to the students from the experimental group – 2 via the weekly pointing system and leaderboards, they were able to see their places on the leaderboard and they had achievement badges and rewards to prove their success. In the interviews, there was one student from the experimental group – 2 stated that her gamification experience was not just like any other game without a purpose and that it felt special. Therefore, these specific game design elements could be the indication of personalization in this gamification treatment. These findings were in line with the claims of Ede (2016) suggesting that the right reward can have ever-lasting effects on students' motivation, and this can pave the way for intrinsic motivation. When students' efforts were rewarded with a meaningful indication of status

in a non-materialistic way, their motivation toward the English lessons could have increased significantly. The second sub-factor of the questionnaire was competence. Competence sub-factor included statements such as 'It was easy to understand due to receiving instant feedback from the teacher' and 'I felt that I was having fun while also learning effectively'. In the competence section, a sense of instant feedback and fun were the items that stood out. Both experimental group students seemed consistent in that they were exposed to instant feedback and fun. On the qualitative side, many students from both experimental groups asserted that they were having a lot of fun while receiving constructive feedback. In the 6D Framework created by Werbach and Hunter (2012), fun and instant feedback were described as crucial elements for the gamification process. Without the element of fun, intrinsic motivation could not foster (Werbach & Hunter, 2012). Kapp (2012) also stated that instant feedback is what can cause a motivational difference in students. However, it is important to point out that from the experimental group – 2 students, there was a stronger agreement on the instant feedback item. This could be explained by the differentiated gamification treatments. Although both groups were receiving instant feedback from the gamification tools, the experimental group – 2 students received additional feedback from points, leaderboards, and achievement badges. Therefore, the implementation of leaderboards and achievement badges in the differentiated gamification treatments could have caused this difference. In the related literature, these findings echoed with the statements of Filsecker and Hickey (2014) that were focused on the encouraging and motivational aspect of the achievement badges. The last sub-factor of this questionnaire was relatedness. The highlight of this section was interaction featuring statements such as 'It was easy for me to share my likes/dislikes about gamification with my peers'. Students' responses from both experimental groups were somewhat similar and they were tending towards agreement. This similarity could be explained by the students' inherent desire to socially interact which is not very unusual. Birgham (2015), for instance, explained the importance of social interaction for millennial learners and how it is required to create effective learning environments. However, this lack of difference should not be considered as negative as it also shows that both experimental groups wanted to relate their feelings to other people to a similar extent. To support that, some students in the interviews also stated that they were quite motivated towards tasks regardless of leaderboards and achievement badges and that it was the idea of socializing that got their attention. It can be assumed that the implementation of gamification worked as an innovative model that satisfied this requirement and it created

a learning context where vocabulary learning is facilitated while maintaining similar levels of relatedness for both groups. As it can be seen from the results, both experimental groups were very motivated toward the lessons and they were also aware of their motivators. Through the effects of these motivators, it could be explained that the Self Determination Theory of Deci and Ryan (1985) is the reason why students were feeling motivated towards gamified tasks as they also claimed that autonomy, competence, and relatedness are the key determiners of intrinsic motivation. It is probable that, through the effective use of game design elements, students' felt more self-determined which resulted in the emergence of higher intrinsic motivation toward vocabulary learning.

Ultimately, it can be noted that gamification tools and game design elements fostered high levels of motivation towards second language learning allowing both experimental group students to be more engaged, goal-oriented, and competitive in the English lessons resulting in a more efficient vocabulary learning environment. These results also were in line with the findings of the following studies (Cheong, Filippou & Cheong, 2018; Landers, 2015; Seixas & Filho, 2016; Mekler et al., 2013; Cozar-Gutierrez & Saez-Lopez, 2016). This could also prove that gamification is not just about the tools that are being used but also the game design elements that were chosen which had a crucial role in raising students' motivation and allowing students to learn new vocabulary more efficiently.

5.2.3 Effects of Differentiated Gamification Treatments on Students' Attitudinal Perception

The same research question asked about the middle school students' attitudinal perceptions after the differentiated gamification treatments. Although motivation and attitude are concepts that are connected to each other, they have certain distinctions. In the relevant literature, belief is stated as the first thing that needs to be altered so the attitude can be shifted which would allow motivation to occur (Oroujlou & Vahedi, 2011). In other words, before a positive attitude, it is very unlikely to assume that motivation will emerge in a learning environment. To provide an answer to this research question, semi-structured interviews were utilized with the students from the experimental groups.

The students mentioned during the interviews that gamification tools such as Quizlet, Quizizz, Kahoot, the virtual Escape Room, and the game design elements in them created a more enhanced positive and comfortable language learning environment in comparison

to the traditional ways of teaching including lots of drill-like worksheets and booklet work. These findings supported the perspective of Kapp (2012) who also underscored the importance of much-needed changes in teaching environments as the traditional method causes frustration and is becoming irrelevant compared to gamification. The findings also support Prensky (2003)'s claim stating that today's generation is considered digitally native and games should be utilized in education as a remedy for their decreasing motivational and attitudinal behavior. Another important finding from the interviews was that students felt more confident and encouraged because they knew with the help of the gamification tools featuring different game design elements. Students also stated that they were more aware of what they are doing thanks to the pointing system and ClassCraft tools. These findings were in line with Smith (1971)'s claim stating that attitudes could be learned from one another in a social environment. It is probable that the positive atmosphere affected all the students within the classroom and shaped their perception of vocabulary learning.

As it was seen from these results, students in both experimental groups have demonstrated positive attitudes towards the lessons. Many students mentioned that after seeing the leaderboards and badges, they were more ambitious and showed more effort which indirectly led them to learn new vocabulary. Moreover, when students were earning points and moving their ranks in the leaderboard, it created an enhanced desire in them for English lessons and vocabulary learning. They supported this statement by saying that "they could not wait longer for the English lessons to start". In the relevant literature, this could be explained with the ABC model of Attitude. Ostrom (1969) claimed in his model that after someone associates an activity with an emotion, it could affect that person's behavior. Moreover, when that person takes repetitive actions towards the activity, this could turn into a routine and eventually a belief over time. Overall, these are considered as the key elements for fostering a wanted attitude (Ostrom, 1969). It is probable that students internalized the different gamified activities featuring game design elements and with the help of the changed classroom environment, they wanted to engage repeatedly. These repeated actions could have resulted in the emergence of positive attitudes in the students. This deduction could also be supported by two of the student statements mentioning that although they did not really like doing homework or English lessons, they felt more inclined to do so because of the achievement badges and leaderboards.

In order to complement the findings of the qualitative side, the attitude scale was applied to both experimental group students after the 4-week gamification process.

In the attitude scale, there were three sub-factors named satisfaction, intent, and willingness. Some of the highlights from the satisfaction sub-factor were 'I can focus better to understand the subject when gamification activities are used' and 'Gamification activities in lessons prompt me to work harder'. Only the students from the experimental group – 2 responded favorably towards these items. In other words, while the experimental group – 1 students were inconsistent in believing that gamification helped their focus and hard work, students from the experimental group – 2 were in relatively high agreement. It is possible that students in the experimental group – 1 might have required a higher purpose in the form of rewards. The non-materialistic rewards for the experimental group – 2 might have prompted them to work and focus harder. Many students in the experimental group – 2 stated in the interviews that rewards "changed the way they look" at the English lessons and encouraged them to work harder. This echoes with the statement of Nicholson (2015) claiming that rewards are key elements for achieving mastery in certain skills and engagement. The second sub-factor of the attitude scale was intent. This sub-factor included various statements such as "Knowing that there are game elements in a lesson creates a desire in me towards the lesson" and "The game elements in a lesson raise my curiosity to the task". Although both experimental group students showed similar patterns in their responses, there was a particularly strong agreement among the students in the experimental group – 2. It is probable that the integration of achievement badges and leaderboards exposed students to a unique SLL context that they were not used to. This system might have boosted their self-confidence, curiosity, and desire. Parallel to these responses, in the semi-structured interviews, some students from the experimental group – 2 asserted the changes in their self-confidence, curiosity, and desire towards the English lessons. One of the students stated that she started paying more attention to homework and classwork activities because she wanted to see what she can accomplish with them. Another student stated that seeing his name on the leaderboard made him show more effort toward the tasks. Furthermore, it should be pointed out that students might have found themselves engaging with the flow of the learning environment (Csikszentmihalyi, 2014). In the relevant literature, Kapp (2012) claimed that the traditional English language teaching system in which the students are accustomed to repetitive actions is now irrelevant to a generation of digital natives who are born to games

and the use of gamification could alter their perspective in a positive way. Therefore, the integration of different gamification tools could be the reason why for this positive attitude from both experimental groups. These results in the intent section were also in line with Bunchball (2010)'s claim who stated that a gamified learning environment encourages students to be more eager towards learning thus creating motivation and a positive attitude toward the lessons. The last sub-factor of the attitude scale was willingness. The highlights of this section were 'When there is a subject that is difficult for me to comprehend, I use gamification techniques to understand it better' and 'I would like to see more subjects teaching lessons with a gamified approach in the future'. In general, student responses from the experimental group – 1 seemed inconsistent to show their willingness to use gamification techniques in order to understand a subject better. It is probable that the lack of some game design elements such as leaderboards might have created this inconsistency. To support this, one of the students in the experimental group – 1 stated that if she had badges and leaderboards, she would have shown more effort toward the tasks. This also echoes with the claim of Werbach and Hunter (2012) asserting the importance of leaderboards and how they could work both ways depending on their integration features. However, students from both experimental groups responded very favorably to the other items in this section, showing their willingness to see gamified approaches in other subjects and education as a whole. Supporting this high agreement, many students in the interviews emphasized the need for more gamified activities and stated that it would make them more aware, self-confident, and ambitious toward the lessons.

Ultimately, both qualitative and quantitative data supported that with the implementation of different gamification tools, students in both experimental groups showed curiosity, ambition, desire, and self-confidence toward the English lessons and demonstrated positive attitudes toward vocabulary learning. All these elements led to a more positive vocabulary learning environment. Lastly, the results regarding the heightened attitudinal behavior were in line with the findings of Barata et al. (2013), O'Donovan, Gain & Marais (2013) and Mekler et al. (2013) as the students in these studies also demonstrated high levels of positive attitudes towards vocabulary learning.

CHAPTER VI
RECOMMENDATIONS & CONCLUSION

6.1 Introduction

The final chapter of this study provides the limitations of the study. In the following section, suggestions for instructors, language teachers, researchers, and curriculum and materials developers will be made. Lastly, a discussion will be made regarding the pedagogical association and importance of this study for the future of ELT.

6.2 Limitations and Recommendations for Further Research

The researcher faced several limitations during this study. First of all, the study was conducted in a private school named "Aci Schools" in Istanbul, Turkey featuring grade 8 students. The number of students who participated in this study was 60 and they were divided into experimental groups and a control group. This number limits the generalizability of the findings. A treatment on a larger population from various schools could create more generalizable findings. Also, it would be effective to conduct similar studies with different age groups which could lead to distinctive results.

Secondly, although the study had different game elements for each gamified lesson plan, the treatment lasted for 4 weeks in the Academic Year of 2021-2022. More time could have been allocated so that the games can be played more times and the students would have wider scope in understanding the role of game elements and differentiated gamification processes so that the experiences can be evaluated more effectively. This also could result in comprehending the long-term effects of gamification in a better way.

Moreover, Microsoft excel and ClassCraft were implemented to keep track of students' points after every gamified lesson. However, it presented challenges and limitations regarding the effectiveness of the task and the time spent by the instructor. Therefore, researchers should remember to make sure that they can allocate adequate time to writing down students' points after every gamified lesson so there will not be any unfairness for the students.

For the motivational and attitudinal side of the study, different approaches could also be viable to support the qualitative data and measure the motivation and attitude levels of the students. The perceived motivation questionnaire and the attitude scale were applied after the differentiated gamification treatments and to the experimental groups only. A pre and

post-application of these questionnaires to all groups would have allowed for conducting a quantitative comparison between the mean scores of students, which could have provided additional measures to detect changes in students' motivation and attitudes.

As for recommendations, instructors from other subjects should be encouraged to use a similar gamified approach in their lessons which could result in a schoolwide implementation of gamification. Furthermore, with technology advancing at an extraordinary speed, gamified classroom environment could be created in the "metaverse" utilizing virtual reality (VR) and augmented reality (AR) technologies, Open AI technologies and with the assistance of Blockchain technology, the rewards such as achievement badges can be given as NFTs (Non-Fungible Token) since it creates significant attraction among the members of generation Z. Every school could even have their own NFT. Furthermore, all of the gamification tools utilized in this study were part of Web 2.0. Researchers should be notified that Web 3.0 is slowly taking over and gamification tools will adapt themselves to this new system. Therefore, further research should be conducted on Web 3.0 and its effects on educational gamification tools. Ultimately, researchers could have a distinct opportunity to conceive students' vocabulary achievement, motivation, and attitude when the gamification context is established through advanced technological means.

Additionally, in the gamification process, many game design elements were utilized. It would be plausible for future researchers to examine the game design elements used in this study in detail in order to understand which ones foster greater vocabulary achievement, motivation, and attitude differences in students.

As academic achievement is one of the major objectives and the benchmark of any lesson, the statistically significant difference between the control group and the experimental groups' vocabulary achievement test scores must be taken into consideration. In light of the findings of this thesis, curriculum, and material developers, as well as teachers, can incorporate gamification into their curriculum.

Moreover, achievement badges and rewards that demonstrate desirable status within students are among the most important game design elements and they should be carefully considered while creating gamified lesson plans. As the SAPS framework was utilized in this study, future researchers could also base their rewards on acceptable frameworks. In addition, tangible rewards and linguistic motivators could also be utilized for the emergence of intrinsic motivation. To widen the effects, in-service trainings and seminars

must be conducted within schools giving more information and awareness to the teachers about the correct implementation of gamification.

Another point regarding the study is that the technological infrastructure of the schools should be examined and adjusted according to the needs of the gamification process as it mostly relies on educational gamified applications and technological means. It could be beneficial to create a language management system (LMS) to record necessary details regarding students such as the points and badges which were obtained during the course of the treatment. Thus, the researcher could have more knowledge about the process and guide the students accordingly.

Additionally, if the researchers would like to utilize different motivation and attitude questionnaires, they should examine the statements carefully in order to make sure that they are eligible to use in the pre and post-test format. This would give the researchers more opportunities to compare the motivation and attitude levels as well as determine the starting points of these variables.

One more point regarding the recommendations of the study is that instructors should be careful with the implementation of weekly leaderboards as they can have significant positive and negative effects on students' motivation and attitude resulting in a bigger impact on their academic achievement accordingly. While implementing leaderboards and achievement badges in the gamified context, a healthy level of competition and collaboration must be aimed so that an effective learning environment could be facilitated for students. It is also very significant that gamification treatments need to be updated in the long run so the curiosity levels stay to continue to be satisfactory which would result in a more effective language learning environment.

On a last note, the fact that both the experimental group – 1 and experimental group – 2 demonstrated significant improvement in their vocabulary learning but the control group did not, must warrant researchers for longer treatment duration and further future study as it could result in a more significant change between groups.

6.3 Conclusion

The results of this quasi-experimental study showed that when implemented correctly, gamification can foster high motivation, attitude levels, and academic achievement in middle school students while learning new vocabulary in English. As the COVID–19 pandemic has taken over our world, we are forced to digitalize not only in our lives but also in education. Future ELT education is going to incorporate more technologically

endorsed programs to assist language learning. Personalized learning and social interaction are at the core of these technological advancements. There is a strong trend of e-learning techniques and technologies that feature this personalization and social interaction through gamification.

In relation to these technological trends, motivational and attitudinal theories are being utilized to maximize learners' motivation and attitude toward language learning. It is fair to say that motivation and attitude play a key role in language learning. Without intrinsic motivation and a positive attitude, academic success cannot be achieved. In this regard, games play a dual purpose. In a language learning context in which traditional methods of teaching are used extensively, games not only enhance the motivation of learners and foster positive attitudes towards language learning but also, facilitate and expedite the L2 learning process.

By enhancing students' perception, gamification can provide a smoother classroom environment with a changed atmosphere full of positive attitudes, high levels of motivation, fun, and engagement. Therefore, this study can serve the purpose of being a guideline in the ELT field of Turkey both for teachers and students in order to promote a positive attitude, high levels of motivation, and better academic success in the L2 learning process.

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APPENDICES

APPENDIX-A. Perceived Motivation Questionnaire

MOTIVATION TOWARDS GAMIFICATION AND LESSONS WITH GAMIFIED ELEMENTS – PERCEIVED MOTIVATION SCALE

Dear students,
Below, there are several statements regarding motivation toward gamification and lessons with gamified elements. Please read each one and indicate to what extent you agree or disagree with each statement. Please do not leave the statements blank and answer to the best of your ability. Thank you for your patience and support.
Bahadır AYKUT

1. Gender: Female ☐ Male ☐

2. Grade / Age : ..... / .....

3. Please indicate to what extent the statements below reflect your motivation toward gamification.

(1: Strongly Disagree; 2: Disagree; 3: No Opinion; 4: Agree; 5: Strongly Agree

		Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree	Category
		1	2	3	4	5	
1.	I felt in control of my learning process with gamification.						**Autonomy**
2.	I felt interested in a lesson with the gamified approach.						
3.	I felt confident participating in gamified activities.						
4.	I felt my gamified learning experience was personalized.						
5.	I felt that I was having fun while also learning effectively.						**Competence**
6.	I felt that I completed the gamified tasks easily.						
7.	It was easy to understand due to receiving instant feedback from the teacher.						
8.	It was easy to find the right information I need for a gamified lesson.						
9.	It was easy to share the gamified experience with peers.						**Relatedness**
10.	It was easy to access shared information from peers.						
11.	It was easy for me to share my likes/dislikes about gamification with my peers.						
12.	It was easy to discuss the content of the gamified lesson with my peers.						

APPENDIX-B. Attitude Scale

ATTITUDES TOWARDS GAMIFICATION AND LESSONS WITH GAMIFIED ELEMENTS – ATTITUDE SCALE

Dear students,
Below, there are several statements regarding attitudes towards gamification and lessons with gamified elements. Please read each one and indicate to what extent you agree or disagree with each statement. Please do not leave the statements blank and answer to the best of your ability. Thank you for your patience and support.
Bahadır AYKUT

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1. Gender: Female ☐ Male ☐

2. Grade / Age : ..... / .....

3. Please indicate to what extent the statements below reflect your attitude towards gamification.

(1: Strongly Disagree; 2: Disagree; 3: No Opinion; 4: Agree; 5: Strongly Agree

		Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree	Category
		1	2	3	4	5	
1.	I enjoy lessons thought with a gamified approach.						**Satisfaction**
2.	*The concept of gamification bores me during the lesson flow.						
3.	*I feel threatened when gamification activities are introduced.						
4.	I can focus better to understand the subject when gamification activities are used.						
5.	Gamification activities in lessons prompt me to work harder.						
6.	*Gamified approach in a lesson causes confusion and therefore makes my learning difficult.						**Intent**
7.	Knowing that there are game elements in a lesson creates a desire in me toward the lesson.						
8.	*There is absolutely no need for a gamified approach in second language lessons.						
9.	The game elements in a lesson raise my curiosity to the task.						
10.	*I am not interested in the concept of gamification.						
11.	I would like to see more subjects teaching lessons with a gamified approach in the future						**Willingness**
12.	When there is a subject that is difficult for me to comprehend, I use gamification techniques to understand it better						
13.	*Using game elements in a lesson is a waste of time.						
14.	Gamified activities should be used more effectively in education.						

(*Reversed - negative statements towards gamification and lessons with gamified elements)

APPENDIX-C. Interview Form

Interview Form

Hello, my name is Bahadır AYKUT. I am having a master's degree from Sabahattin Zaim University in the area of English Language Teaching (ELT). I am conducting a research study on "THE EFFECTS OF DIFFERENTIATED GAMIFICATION TREATMENTS ON MIDDLE SCHOOL STUDENTS' ACADEMIC ACHIEVEMENT, MOTIVATION AND ATTITUDES IN SECOND LANGUAGE LEARNING" and I would like to interview you to get your opinion. Your opinion on this issue is extremely valuable as it can be used for further research and wider implementation of gamified activities in lessons. This whole interview will be confidential.

Thank you in advance for your support and patience.

Bahadır AYKUT
Master's Student
English Language Teaching
Sabahattin Zaim University

1. What did you think about the implementation of gamification in our lessons? Did you find it useful? Why or why not?
2. Which game design element and gamification tool helped you the most (Quizizz, Kahoot, Quizlet or the virtual Escape Room) in terms of vocabulary learning?
3. How would you compare your attitude and motivation towards the English lessons before and after the gamification treatments?
4. Would you like to see a more gamified approach in other lessons? Why / Why not?
5. Which reward was your favorite during the gamification process? Why?
6. How motivating are the use of a pointing system, achievement badges and the weekly leaderboard in your opinion? Did they motivate you to do more in class? Why / Why not?

APPENDIX-D. VOCABULARY ACHIEVEMENT TEST – Pre-test

Name / Surname:

Question 1

"She skipped my name!" Jonas thought. Was something wrong? It must be a mistake.
According to this statement, which of the words below best describes how Jonas is feeling as a result?

a) honored
b) enthusiastic
c) startled
d) dizzy

Question 2

The memory of war causes a/an _____ pain to the Giver and he cannot stand it anymore.

a) excruciating
b) sensation
c) concentrating
d) drenched

Question 3

Jonas thinks his father's job is **to take care of** the newborn children.
Which is the **best** option that has a similar meaning to the words written in bold?

a) require
b) acknowledge
c) adhere
d) nurture

Question 4

When Jonas asks his parents about love, they _____ to answer because they do not know the meaning of the word.

a) hesitate
b) require
c) prohibit
a) distract

Question 5

The collection of books in the Giver's library seems **incalculable.**
Which is the best option that has a similar meaning to the word written in bold?

a) famous
b) endless
c) bright
d) wonderful

Question 6

Jonas's mother is responsible for the _____ of the rules in the Community.

a) sympathy
b) criticism
c) adherence
d) solution

Question 7

The Community's assignment system achieves **maximum productivity with minimum effort.**

According to this statement, what kind of a system does the Community have?

a) ineffective
b) efficient
c) extravagant
d) deceptive

Question 8

Jonas does not want the sled ride to end. It is a/an _____ experience for him.

a) prohibiting
b) transparent
c) exhilarating
d) distracting

Question 9

The idea of keeping the memories forever certainly **terrifies** Jonas.

Which is the best option that has a similar meaning to the word written in bold?

a) annoys
b) disturbs
c) perceives
d) frightens

Question 10

In the Community, there is no room for _____ as everyone is required to act similarly.

a) sympathy
b) dullness
c) solitude
d) diversity

Question 11

In the Community, the idea of being the "Receiver of Memory" was sold as a great h_____, meaning that it shows merited respect and reputation.

Please complete the statement with the appropriate vocabulary.

Question 12

Jonas **escapes** the Community with Gabriel to give everyone their memories back.

What is one synonym that can replace the word written in bold?

f_____

Question 13

Jonas is **desperately** looking for food in order not to starve.

Which of the following is the definition of the word written in bold?

a) doing something in an organized way
b) in a way involving sadness with little hope
c) in a quick but not serious way
d) in a mysterious way not knowing what will happen next

Question 14

Babies who are not strong enough are labeled as **"not good enough"** and they cannot live in the Community.

Which is the best option that has a similar meaning to the word written in bold?

a) inadequate
b) assertive
c) devoted
d) considerate

Question 15

After being the "Receiver of Memory", Jonas is **allowed** to tell lies.

Which of the following is the antonym of the word written in bold?

a) encouraged
b) comforted
c) prohibited
d) complimented

Question 16

When all the members of Jonas's family agree to keep him, Gabriel's "not good enough" status is _____ until next year.

a) abolished
b) considered
c) postponed
d) maintained

Question 17

The Community's **approach** to discipline and education is quite different.

Which is the best option that has a similar meaning to the word written in bold?

a) method
b) recipe
c) raffle
d) assessment

Question 18

Every time a citizen of the Community uses the language in a wrong way, a public apology was r_____ to understand the mistake.

Please complete the statement with the appropriate vocabulary.

Question 19

The Giver's assignment involves **solitude** because there is no one to share the experience with

Which of the following is the definition of the word written in bold?

a) feeling concerned for other people
b) being an expert on something
c) the condition of being deep
d) being alone or separate from other people

Question 20

Through the memories from the Giver, Jonas e_____ great happiness he has never known before.

Please complete the statement with the appropriate vocabulary.

Question 21

Jonas transferring some of his happy memories to Gabriel is a **phenomenon** because it has never been done before.
Which of the following is the antonym of the word written in bold?

a) punishment
b) expertise
c) normality
d) passion

Question 22

Seeing Fiona's hair color is a **shocking event** to Jonas.
Which of the following is the antonym of the word written in bold?

a) expected activity
b) destination
c) frightening situation
d) conflicting situation

Question 23

Integrity is one of the most important characteristics of Jonas.
Which of the following is the antonym of the word written in bold?

a) principles
b) recklessness
c) dishonesty
d) manners

APPENDIX-E. VOCABULARY ACHIEVEMENT TEST – Post-test

Name / Surname:

Question 1

Jonas: There is a little shudder of nervousness when I think about what might happen in December.

According to this statement, which of the words below best describes how Jonas is feeling?

a) distraught
b) apprehensive
c) casual
d) delighted

Question 2

After learning the truth about the Community, Jonas decides to leave the Community because he does not want to bear this heavy _____ of memories.

a) hunch
b) expertise
c) glance
d) burden

Question 3

The House of the Old was **calm and peaceful** unlike the busy centers of the Community.
According to this statement, which is the best option that has a similar meaning to the words written in bold?

a) serene
b) squirm
c) depth
d) desperate

Question 4

After being the "Receiver of Memory," Jonas's friends **cannot decide** whether to talk to him or not.
Which is the **best** option that has a similar meaning to the words written in bold?

a) hesitate
b) require
c) prohibit
d) distract

Question 5

The elders **watch** Jonas carefully throughout his life.
Which is the **best** option that has a similar meaning to the word written in bold?

a) frighten
b) persuade
c) observe
d) disturb

Question 6

Jonas cannot think or focus on anything other than the color of the apple on the way back home.

According to this statement, which of the words below best describes how Jonas is feeling?

a) disgusted
b) distracted
c) ashamed
d) sophisticated

Question 7

The Giver and Jonas **need to work together as a team** to plan the escape from the Community.

According to this statement, what needs to be utilized by Jonas and the Giver?

a) competition
b) ambition
c) deception
d) collaboration

Question 8

After learning the truth about his father, Jonas can **never trust him again.**

According to this statement, which of the words below describes Jonas's father?

a) faithful
b) unreliable
c) affectionate
d) light-hearted

Question 9

While waiting on the stage all alone during the ceremony, Jonas feels _____ because he is not sure what is going to happen next.

a) annoyed
b) perceived
c) frightened
d) concentrated

Question 10

The community has strict **moral values,** and everybody sticks to them no matter the cost.

Which is the **best** option that has a similar meaning to the word written in bold?

a) principles
b) behavior
c) motivation
d) establishments

Question 11

One of the qualities of Jonas as the "Receiver of Memory" is co_____, meaning that he could face a great deal of danger.

Please complete the statement with the appropriate vocabulary.

Question 12

After escaping the Community, both Jonas and Gabriel are **outlaws running away from the authorities.**

What is one synonym that can replace the word written in bold?

fu_____

Question 13

The Chief Elder says that they cannot be **hasty** with their choice this time.
Which of the following is the definition of the word written in bold?

a) organized
b) quick, in a hurry
c) easy to understand
d) not good enough

Question 14

In a family unit, two sisters or two brothers were _____ to live in the same house as there was a rule against it.

a) encouraged
b) comforted
c) prohibited
d) complimented

Question 15

Jonas looked up and said, "How are we going to come up with a plan that can save everyone? I have no idea!"
According to this statement, which of the words below best describes how Jonas is feeling?

a) determined
b) honored
c) experienced
d) puzzled

Question 16

To _____ Gabriel's "not good enough" status, all the members of Jonas's family had to sign a pledge.

a) celebrate
b) consider
c) put off
d) maintain

Question 17

The Community's _____ for discipline and education is quite different.

a) assessment
b) method
c) raffle
d) criticism

Question 18

The first memory of Jonas sledding down the snowy hill was a new se_____ for him because he never experienced this feeling before.
Please complete the statement with the appropriate vocabulary.

Question 19

The Community is not a place that **acknowledges** the differences of the people.
Which of the following is the definition of the word written in bold?

a) accepting the truth or reality of something
b) watching something carefully
c) to stop before doing something because you are nervous
d) to make something longer

Question 20

After the great escape of Jonas and Gabriel, the idea of the Community **collapsed.**
Which of the following is the definition of the word written in bold?

a) a final place you are traveling
b) looking at something very quickly
c) making a lot of twisting movements
d) break apart and failed

Question 21

People in the Community never knew **anguish** because the Giver protected them from it.
Which of the following is the antonym of the word written in bold?

a) happiness
b) expertise
c) punishment
d) passion

Question 22

Jonas was very **enthusiastic** to spend time with his friends before his assignment.
Which of the following is the antonym of the word written in bold?

a) concerned
b) uninterested
c) prohibited
d) obsessed

Question 23

In the community, when an unwanted activity happened, public announcements were used to create **remorse** for people.
Which of the following is the antonym of the word written in bold?

a) regret
b) guilt
c) joy
d) repetition

CURRICULUM VITAE

PERSONAL INFORMATION

Surname, Name: Aykut, Bahadır

EDUCATIONAL BACKGROUND

Degree	Institution	Year of Graduation
MA	Istanbul Sabahattin Zaim University Institute of Social Sciences, English Language Teaching	2022
Pedagogical Formation	Istanbul University Faculty of Educational Science, English Language Teaching	2019
BA	Istanbul Kultur University Faculty of Science and Literature English Language and Literature	2015

FOREIGN LANGUAGES

Fluent in English (CEFR=C2)

Beginner level in German

WORK EXPERIENCE

2019-…. **:** Açı Schools (English Language Teacher)

2017-..... **:** British Side (Cambridge Speaking Examiner / Team Leader)