EXAMINING THE EFFECT OF A GAMIFIED ENVIRONMENT ON STUDENTS' ACADEMIC MOTIVATION AND SELF-EFFICACY FOR ENGLISH

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EXAMINING THE EFFECT OF A GAMIFIED ENVIRONMENT ON STUDENTS' ACADEMIC MOTIVATION AND SELF-EFFICACY FOR ENGLISH

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Approval of the Graduate School of Educational Sciences

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I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

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ABSTRACT

EXAMINING THE EFFECT OF A GAMIFIED ENVIRONMENT ON STUDENTS' ACADEMIC MOTIVATION AND SELF-EFFICACY FOR ENGLISH

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In this study, it was aimed to investigate the effects of gamification (ClassCraft) on academic motivation and English self-efficacy levels of fifth-grade students. The sample of the research consists of 14 students studying in a private elementary school in Istanbul. Of the participants eight were male and six were female. A mixed design was used in the current study. In the quantitative part of the study, one-group pretest-posttest design was used to measure the magnitude of the change resulting from the gamified environment. "Demographics Form", "The Academic Motivation Scale" and "The Self-Efficacy Scale for English" were used as data collection tools in the quantitative part of the study. In the qualitative part, a semi-structured interview form was used to collect the data. The Shapiro Wilk test was used to test whether the data were distributed normally in the study. Pearson moment correlation coefficients and the paired group t-test were used to analyze quantitative data of the study. Qualitative data were analyzed by content analysis. As a result of the quantitative analysis, gamification significantly increased students' academic motivation levels since there was a significant difference between pre-test (M= 77.4, SD=8.15) and post-test

(M=80.4, SD=5.57) results; ($t_{0.05:\ 13}$ = -2.660, p <.05). However, gamification did not significantly increase their English self-efficacy levels since there was not a significant difference between pre-test (M= 150.8, SD=4.57) and post-test (M=153.6, SD=3.68) results; ($t_{0.05:\ 13}$ = -2.133, p > .05). According to the qualitative results, it was found that students' motivation and knowledge of the lesson increased as a result of the application of the exercises, their skills such as sense of responsibility, cooperation and ability to act as a team also increased and they were pleased with the practice of gamification in English class.

KeyWords: Gamification, Academic Motivation, Self-Efficacy

ÖZ

OYUNLAŞTIRMA UYGULAMASININ ÖĞRENCİLERİN AKADEMİK MOTİVASYON VE İNGİLİZCE ÖZ-YETERLİK DÜZEYLERİNE ETKİSİNİN İNCELENMESİ

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Bu çalışmada oyunlaştırma uygulamasının öğrencilerin akademik motivasyon ve İngilizce öz-yeterlik düzeylerine etkisinin incelenmesi amaçlanmıştır. Araştırmanın örneklemini İstanbul'da özel bir ilköğretim okulunda öğrenim gören 14 öğrenci oluşturmaktadır. Öğrencilerin 8'i erkek, 6'sı kızdır. Çalışma karma desen olarak yapılandırılmıştır. Çalışmanın nicel kısmında tek gruplu ön-test son-test modeli kullanılmış ve katılımcılara oyunlaştırma uygulaması uygulanmıştır. Çalışmanın nitel kısmında veri toplama aracı olarak "Demografik Bilgi Formu", "Akademik Motivasyon Ölçeği", ve "İngilizce Öz-Yeterlik Ölçeği" kullanılmıştır. Nitel kısmında ise yarı yapılandırılmış görüşme formu kullanılmıştır. Çalışmada elde edilen verilerin normal dağılıma uygunluğunun analiz edilmesi için Shapiro Wilk testinden yararlanılmıştır. Çalışmanın nicel verilerinin analizinde Pearson Momentler Çarpım Korelasyon Katsayısı ve İlişkili grup t testi kullanılmıştır. Nitel veriler ise içerik analizi yapılarak analiz edilmiştir. Yapılan ön test (M= 77.4, SD=8.15) ve son testlerin (M=80.4, SD=5.57) sonucunda oyunlaştırma uygulamasının öğrencilerin akademik motivasyon düzeylerini anlamlı düzeyde arttırdığı ($t_{0.05:\,13}$ = -2.660, p <.05)

ancak İngilizce öz-yeterlik düzeylerini ön test analizi ile (M= 150.8, SD=4.57) son test analizi (M=153.6, SD=3.68) yapıldığında anlamlı düzeyde artırmadığı ($t_{0.05: 13}$ = -2.133, p > .05) saptanmıştır. Ayrıca öğrencilerin oyunlaştırma uygulaması sonucunda derse ilişkin motivasyonlarının ve ilgilerinin arttığını, sorumluluk duygusu, işbirliği ve takım olarak hareket edebilme gibi becerilerinin arttığını ve İngilizce dersinde oyunlaştırma uygulamasının yapılmasından memnuniyet duyduklarını belirlenmiştir.

Anahtar Kelimeler: Oyunlaştırma, Akademik Motivasyon, Öz-Yeterlik

To my beloved wife

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I would like to thank the following people for their support and encouragement. Ms Erin Ryan, for giving me her time and energy. You were my rock and helped me stay focused through rough times. Your critical eye and exceptional knowledge were of utmost value. To Assist. Prof. Yavuz Samur, without your mentorship and guidance I would have been lost. Your thoughtful feedback guided me through this process and your endless support will always be remembered. I am sure the knowledge you imparted will assist my future career greatly.

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Chapter 1

Introduction

In the introduction part, statement of the problem, purpose of the study, research questions, significance of the study and the definitions are explained.

1.1 Statement of the Problem

Games are the most important tools of the childhood period and the area where a child expresses himself/herself most effectively is through game. Game is the most crucial living space of children. Children start to play games before they speak. They are one of the contributors to children's personal development. In this context, game is generally defined as a natural learning process in which children are able to discover and enjoy, feel confident and explore. Game; is a universal process that enables children to acquire knowledge and use this knowledge in ways that are specific to his or her own world. Playing games has always been an important part of human activities. Humans have played different games throughtout history (Çetin, 2013; Prensky, 2003).

By playing games children may rearrange, express and transform knowledge and have a unique opportunity for learning new things. Games lead children to have a greater imagination, to be more creative, to better develop mentally, physically and psycho-socially. Games can be described as some kind of sport or entertainment where a child competes with either him or herself or other players to reach specific goals by obeying certain rules. Games may also be beneficial for children to learn a language and may be useful to create ideal conditions to acquire language (Tomlinson & Masuhara, 2009).

In recent years many children prefer to play computer games rather than going outside to play in a garden or open spaces or to play outdoor group games. Computer games have replaced traditional outdoor games and physical exercise and have become the most important free time activity in the last decades (Bedi & Hrustek, 2013). Not only children but also adolescents and adults play computer games

because they are easily available, cheap and entertaining. They provide people with adrenalin, excitement, ambition, motivation, ego satisfaction, competition, flow, challenge, help to develop creativity and have outputs and feedback which may help them to learn new things (Prensky, 2003).

Several theoretical and experimental studies demonstrated the importance of play for children's physical, cognitive, social, emotional and language development. Play is recognized as a crucial component of children's learning in early childhood and primary education. Reifel and Yeatman (1993) stated that "how we think about play reflects how we think about children" (p. 364). In the learning process, games make learning more fun, and having fun provides relaxation, making it easier for individuals to get information willingly (Prensky, 2002).

Games are also known as effective ways to increase motivation, to develop several skills such as problem solving, planning and critical thinking and to improve learning and academic achievement (Sanchez & Olivares, 2011). Due to the enormous popularity of computer games, researchers and educators have remarked that this popularity may be used for educational purposes. Thus, games are used commonly in the classroom and it may be fruitful to think of using game elements in classrooms to enhance learning effectiveness and support target behaviors of students (Sağlık, 2017).

The idea of using game elements in an educational context is relatively old and can be rooted in the 1960s where Piaget stated that games could not only facilitate children to master their environments but also help them to create worlds of their imagination. In the 1980s several researchers defined games as not pure entertainment but as a powerful instrument for knowledge acquisition. The idea of gamification as a commonly used construct was first introduced by Jesse Schell in 2010 (Marti-Parreno, Mendez-Ibanez, & Alonso-Arroyo, 2016). Gamification which is a natural result of the interaction of the popularity of computer games and the idea of using them for learning purposes can be defined as "the use of game design elements and game mechanics in non-game contexts in order to engage people and solve problems (Su & Cheng, p. 269)."

Gamification is a technique to impute learning and upkeep learners during the whole learning process by applying proven principals of gaming, techniques, tools and instruments. Gamificition not only involves playing games but also requires structured and goal-oriented effort (Kapp, 2012). Gamification in educational contexts is done with an intent to raise the motivation, learning and achievement of students. In this regard, the process of gamification in an educational context does not simply contain adding games in order to teach a lesson. In an educational context gamification means integrating characteristics of games that are engaging, and which have potential to facilitate student learning into an existing learning domain. Game elements are added to a learning environment in an effort to increase engagement motivation and self-efficacy (Birch, 2013).

New generation students are surrounded by computer related instruments and are growing up in an age of modern technology and computer games. Therefore, using game elements in the classroom and gamified learning activities may be motivating and relevant for them. Previous research demonstrated that games have a potential to enhance learning and using games in an educational context has a variety of benefits such as increasing learning and achievement, facilitating learning skill transfer and to develop students' self-efficacy in an academic context (Barab, Thomas, Dodge, & Carteaux, 2005; Birch, 2013; Glover, 2013).

Games allow students to play again when they make a mistake and give them an opportunity to recover their mistake. This opportunity encourages students to experiment without fear and increase their motivation to engage in lessons and self-efficacy. By using game elements teacher may create a narrative context around a task which may be useful to motivate students (Lee & Hammer, 2011). In addition, elements of gamification such as leaderboards and badges provide competition between students, motivate them to engage more, allow them to see their progress and help them to see themselves as capable and able to progress (Kapp, 2012). Gamification students may have better learning experiences by being more engaged and more motivated.

While gamification has been used extensively in different areas such as health, sport, finance and marketing recently, its use has diffused to educational settings. Gamification in educational settings aims to use game techniques, dynamics, mechanics and gamification components to encourage students to achieve desired behavior, to increase motivation of students, and to ensure their engagement. In other words, the main reasons behind effort to use games in educational settings is motivation and engagement (Kapp, 2012). Games have a motivational power and they utilize a number of mechanisms to encourage people to engage with them. In addition, rewards in games and possibility to win may enhance self-efficacy.

Motivation and engagement are usually considered prerequisites for completion of a task or encouragement of a specific behaviour. Therefore, gamification in educational settings usually aims to enhance student motivation, engagement and to support users to perform tasks promoted by teachers or other educational staff (Koivisto & Hamari, 2014). Supporting and motivating students to perform a specific task may also have a positive impact on their self-efficacy levels. Due to the fact that the main aims of gamification are motivating and supporting the students' engagement and encourage them to perform a task, this study focused on academic motivation and self-efficacy rather than other variables such as academic performance or academic achievement.

1.2 Purpose of the Study

Gamification which has a strong potential to influence student behavior, has generated increased attention recently. Games stimulate strong emotional responses, such as curiosity, excitement and joy and provoke individuals to be more engaged which are important to motivate individuals. It is also known that games make it easier to learn new things and through gamification students may develop better problem-solving skills. One of the main targets of an educator is to capture the attention and interest of their students, to engage them in the lesson and to increase their sense of self-efficacy. Elements of gamification can be used for different purposes such as motivating students and helping them to have positive attitudes

toward themselves. Gamification may be a significant tool to reach this goal for educators (Buckley & Doyle, 2016).

Gamification integrated into educational applications include several elements which propose the use of game-like rule systems to shape students' behavior and to motivate them using the power of games. Su (2016) stated that "bringing education and gaming elements together can motivate students to engage in learning activities, give teachers better tools to guide and reward students, and get students to bring their full selves in the pursuit of learning". (p. 10014). In addition, gamification may have an effect on students' cognitive, emotional and social development. It contains intrinsic and extrinsic motivation, and can be used for language acquisition (Sağlık, 2017). In this regard, the purpose of the current study is to investigate the effects of a gamified environment (ClassCraft) on middle school students' academic motivation and self-efficacy for English language learning.

1.3 Hypotheses/Research Questions

The following research questions were addressed in this study:

1. Is there a significant difference between students' pre-and-post self-efficacy for English scores when a gamified environment is used?
2. Is there a significant difference between students' pre-and-post academic motivation scores when a gamified environment is used?
3. What are the middle school students' perceptions about the gamified environment?

1.4 Significance of the Study

In this century it is well understood that new generation students learn differently than students of a generation ago. As the millennium generation gained power in the 21st century, applications for this generation began to diversify, and new learning environments have begun to design for this generation. These students are identified as "digital natives", "g-generation" and "netizens" because of growing up with digital games and access to several technologic devices such as computers,

smartphones and tablets. These students see technology as a usual part of daily life, interact with these devices from an earlier age, have a greater understanding of its concepts and internalize it. Thus, different approaches or methods such as inclusion of digital games in the classroom to educate these students and to motivate them are required (Bozkurt & Genç-Kumtepe, 2014; Prensky, 2001).

New generation students' puspose to learn are changing and also the ways that may be useful to teach them are also changing. One relatively new way that educators have begun to use to meet the needs of millennium students is using game elements and gamification in classrooms. Several studies indicated that gamification may enhance students' motivation and engagement in class. The entertaining characteristic of computer games supports high-level motivation. As an example, Hanus and Fox (2015) stated that "by applying gamification to the classroom, students could be motivated to learn in new ways or enjoy otherwise tedious tasks (p, 152)." Gamification is considered as a new phonemenon that can bridge the generation gap between teachers and students and may be a helpful tool to motivate students, improve their skills, or maximize learning which may also have an impact on self-efficacy (Faiella & Ricardi, 2015). In addition, gamification provides students with opportunities to take on tasks without the anxiety of failure which may also be important for motivation and self-efficacy.

Several studies proved the positive impact of gamification on motivation and language learning. As far as our knowledge, no study has focused on the impact of using Classcraft on middle school students' academic motivation and level of self-efficacy. Unlike other studies, the present study aims to investigate Classcraft as a gamified environment on students' academic motivation and self-efficacy for language learning. This study also aims to investigate the perceptions of middle school students about gamification, which brings a qualitative aspect to the study as well. It is thought that the results of the study will be helpful for teachers and educators. It is thought that this study will contribute to the literature on gamification.

1.5 Definitions

Gamification: According to Enders (2013) gamification is a process where elements and game mechanics is applied to non-game activities, thereby, making these activities more compelling.

Motivation: Motivation is a process that activates, orients, reinforces and maintains the behavior of individuals towards the achievement of intended objectives and leads him/her to move to do something. (Roussel, 2000, p.5).

Academic motivation: Academic motivation can be defined as students' energy and drive to learn, to work effectively, and to achieve to their potential at school and the behavior that follow from this energy and drive" (Martin, 2002, p. 35).

Self-efficacy: Self-efficacy can be defined as peoples' judgement of their capabilities to organize and execute courses of action required to attain designated types of performance (Bandura, 1986, p. 391).

Chapter 2

Literature Review

2.1 Game

Games which are older than culture are also part of human nature. They also continue to have an impact on our social and leisure time. Games have significant functions such as a discharge of superabundant vital energy, the satisfaction of some imitative instinct, an important source of relaxation, a training tool for young people for the serious work that life will demand later, an exercise in restraint needful to the individual, restorer of energy wasted by one-sided activity and a tool just for fun. Games are effective actions for the instinctive, ritual, or only vital practices to be carried out in the process of people becoming individuals in society. Although the game is a complex phenomenon with many features, in general the basic motivation to play a game is entertainment and experience. Although the game seems to be a human instinct and a component of human nature, the concept of game has been defined in different ways at different times (Huizinga, 1955; Sezgin, Bozkurt, Yılmaz & Linden, 2018).

Games which are important effective tools to transfer culture, knowledge and information to the next generations can be defined as a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome (Salen & Zimmerman, 2004). Games have been used to teach people's shared cultural history for thousands of years. Huizinga (1995) presented game as a competitive act and socialization promotional tool.

Huizinga presented a notion of "magic circle". Magic circle is a place where people collectively involve themselves in games. The Stadium, the shrine, the dome, the stage of a theater hall etc. are all different types and functions of magic circle. (Farber, 2015)

Game and play are two different things. Although the word play is commonly used for games and toys, it is necessary to make a distinction between these concepts. Caillois (2001) suggested two poles of play activities which are called as

“paidia” and “ludus”. The first concept paidia (playing) means free-form, expressive, improvisational behaviors and meanings. Padia is active, noisy, spontaneous and cheerful. The second one, ludus (gaming) describes playing with rules and determined goals. Ludus represents calculation, plan and subordination to rules (Groh, 2012). Caillois (2001) differentiated playing and gaming. According to him, playing is free from rules and express merely actions, while gaming follows strict rules, principles and leads towards goal orientation.

Depending on factors like competition, thrill and luck, Caillos (2001) has categorized games in four kinds. Agon, based on struggle and competition, Mimicry involves imitation, drama and melody. Ilinx is a game type influxed with adventure, thrill and excitement.

According to Koster (2013) games are systems in which players engage in an abstract challenge defined by rules, interactivity, and feedback, that results in a quantifiable outcome often eliciting an emotional reaction. Suits (1990) submitted that “to play a game is to engage in activity directed towards bringing about a specific state of affairs, using only means permitted by rules, where the rules prohibit more efficient in favour of less efficient means, and where such rules are accepted just because they make possible such activity” (p.34).

Definitions of game have several common elements, identified (Kapp, 2012, pp.7-8). These elements are;

System is a set of things that are organized and interrelated, when incorporated together perform as a unified whole.

Scores are activities and actions followed by plan and strategy.

Concept of unified-whole (System) is seen when different parts and elements of a specific game are combined together. Scores depends on actions and activities. Rules are set to limit the actions.

Participant/Player is a person that interacts with elements of games, tools, instruments and techniques.

The person playing a game is the player. Learning is acquired during the act of playing a game. Thus, players transform as learners later.

Abstract: Games typically involve an abstraction of reality and typically take place in a narrowly defined game space. This means that a game contains elements of a realistic situation or the essence of a situation but is not an exact replica.

Challenge: Games challenge players to achieve goals and outcomes that are not simple or straightforward. A game becomes boring when the challenge no longer exists.

Rules: Rules are do's and don'ts of the game. They decide win and lose. What actions are allowed and disallowed, what is rewarded and what should be fined.

Interaction: Players interrelate and coordinate with each other during the gaming session and with the whole game system. They interact with tools and instruments of the game as well as with the other participants and competitors.

Feedback: Instant, prompt and vivid feedback is the charm of a game. Players instantly receive negative or positive feedback about their performance, rectify the performance and can improve.

Measurable results: Well-designed games have a measurable outcome. Players have no ambiguity about their performance and can quantify the performance by clearly defined states of win or lose. On the other side, play has no well-defined rules and the outcome can't be measure or quantified.

Emotional reaction: Games typically involve emotion. From "thrill of victory" to "agony of defeat," a wide range of emotions enter into games. The feeling of completing a game in many cases is exhilarating as is the actual playing of the game.

Similarly, Seaborn and Fels (2015) presented an overview of the definitions of games from previous literature and noted that games have several characteristics such as "rules which determine boundaries and involve instructions, structure, voluntary participation, changeable outcomes that mean the probability of a win or loss against other players or game goals, conflict that involves both competition and cooperation between different parties, representation and resolution" (p.16). Games are specific forms of playing that often develop out of human beings' natural tendency to play. Games are a set of rigid structures that define a limited action space. Playing a game means willingly entering a rigid structure and animating it with free movement. Thus, voluntary participation is one of the key components of games. Nobody can force an individual to have fun in a game. A degree of freedom must exist to engage in a game (McGonigal, 2011).

In general games provide clear goals and rapid feedback to their players. Players often reach feedback quickly. Therefore, the players may evaluate their own progress through the game rapidly by the availability of responsive and immediate feedback. This feedback ensures players have valuable information to develop their skills (Facer, 2011). Providing feedback is important for players to improve their performance. Feedback is a fundamental element of useful games. Effective games provide feedback that is "(a) clear and unobtrusive, and (b) immediately responsive to the player's actions" (Rigby & Ryan, 2007, p. 8).

McGonigal (2011) has set four principles of a game that differentiate it when classifying it from the perspective of paidia and ludus. First, the un-ambiguous and evident goal setting that provide a reason for participating in the game; second is the stable feedback; third is the clearly defined rules, do's and don'ts of the game; and fourth is a participation based on free will of the player.

Games can also be adapted according to the needs of the students. When new concepts are presented as a logical learning progress games can be used to meet students' teaching and learning needs (Larsen-McClarty, Orr, Frey, Dolan, Vassileva & McVay, 2012). In addition, play may be accepted in a broader and more unconstrained category, it may contain game but different from it (Deterding et al.,

2011). They are filled with a motivational complexity that can be used to shed light on topics and increase content acquisition (Matera, 2015). Towering the accurate pillars are inevitable for a viable games design.

These are core actions in the game, and it is important to invest in making them appealing to players. To be interesting, actions must be convenient to ignite, and surely provide vivid feedback with clarity. Game structure, free movements in a game, its mechanics, functioning and procedures are unavoidable aspects of any successful game design (Hirumi, 2010).

2.2 Gamification

The idea of using game components to improve applications in a non-game context is not a new phenomenon. Play and games have been used to increase students' motivation to learn in an educational context. Especially in the 1980s, the rise of human computer interaction has come up with resulted in a delightful interaction through game-like systems and pleasurable interfaces (Deterding, Sicart, Nacke, O'Hara, & Dixon, 2011). In addition, in the last decades games and entertainment products became more available to people. Therefore, an increasing number of games and entertainment products and easy access to digital games, game consoles and other similar products caused the development of applications such as "gamification".

In recent years people have been good consumers of gamification and gameful design products with these products getting ever so more popular from day to day. Games are also important tools to satisfy several psychological needs such as having a connection with others, oneself, the environment and objects. According to Baudrillard (1998) playfulness has been ruling people's daily lives and habits regarding objects, the environment, relations … etc. (p.113). This situation may be another reason for the rapid rise of gamification (Alsamarai, 2016).

The widely accepted definition of gamification is "the use (rather than the extension) of game design (rather than game-based technology or other game related practices) elements (rather than full-fledged games) characteristic for games (rather

than play or playfulness) in non-game contexts (regardless of specific usage intentions, contexts, or media of implementation).” (Deterding et al., 2011, p.13). According to this definition it can be said that there are four components that characterize gamification: (a) Game: Game, but not the play, as distinguished by Caillois (2001), (b) Elements: Purpose of gamification is not to create a full game in a serious gaming context, but rather re-applying its elements. This raises a distinct boundary between elements of game and game itself. This also raises the question that what actually are the game elements and how to define them, (c) Game Design: According to Marache-Francisco & Brangier (2015), Game design, its mechanics, interface, design heuristics, conceptual model of game design units and designing methods and process are the five levels that gamification uses. Witt, Schienier and Robra-Bissantz (2011) suggested that level of amusement can be enhanced by applying proven rules of game like difficulty levels, leaderboards and scores in a serious setting or context.

One of the basic benefits of gamification is to increase engagement by providing its users with a feedback mechanism which traditionally can be found in games. The essential purpose behind designing and implementing gamification within different types of services or applications is to increase the customer’s engagement, enjoyment and loyalty.

Gamification can be described as the use of game mechanics and experience design to digitally engage and motivate people to achieve their goals. In this definition: 1. Game mechanics describes the key elements that are common to many games, such as points, badges and leaderboards, 2. Experience design describes the journey players take with elements such as game play, play space, and story line, 3. The gamification method is to digitally engage rather than personally engage, meaning that players interact with computers, smartphones, wearable monitors, or other digital devices, 4. The goal of gamification is to motivate people to change behavior or develop skills, or to drive innovation, 5. Gamification focuses on enabling players to achieve their goals and therefore the classes achieve its goals (Burke, 2016).

Gamification is not just about applying technology to old engagement models, like awarding ski pins. As Burke (2016) stated, "gamification has entirely new engagement models, targeting new communities of people and motivating them to achieve goals that they may not even know they have" (p. 14). Gamification has practical and wide applications in different areas such as sustainability, education, transportation, healthcare, companies and different organizations and government, among others. Over the last three decades with the growth and importance of the digital game industry, game designers and researchers have conducted studies to understand what makes a computer game successful and they try to understand how the gaming experience motivates people to play. Thus, gamification has become an important topic to produce desired behavior change in different contexts (Robson et al., 2015).

Gamification is evolving from entertainment industries to everyday life in new and incomparable ways. Historically, games were activities that were played at special events like at carnivals or circuses. In the last decades these entertainment tools are delivered straight to our homes through technological facilities and marketing schemes. Like other areas of everyday life, gamification elements are applied to learning environments. Farber (2014) considered it as a form of "chocolate-covered broccoli" (p.1) or an important thing hidden behind something alluring. Taking everyday tasks and providing various motivational techniques which address several personalities may be easier by using multiple game elements (Plumb, 2015). According to Houtari & Hamari (2012) gamification is a value creation process for the users that increase a service with affordability in respect to gaming experience. Instead of learning in a repetitive or a linear way, gaming simulations built around some narratives can enhance the user skills, learning curve and engagement.

Some productive examples of application of gaming principles in non-gaming contexts, can be seen in various business sectors, where airlines and restaurants set specific milestones in terms of spending or visits. On achievement of these points bonuses or reward points are offered to the customers for free travelling and dining. The same model is replicated in the banking sector, where customers earn bonuses

on the achievement of spending milestones. Health and fitness gyms also stimulate healthy competition among their members by offering certain discounts or free giveaway offers on attainment of decided fitness goals. HR departments of organizations apply gamification with a sole purpose of increasing productivity and fostering healthy competition with or without offering any intrinsic or extrinsic benefits to employees. (Dewey, 2013).

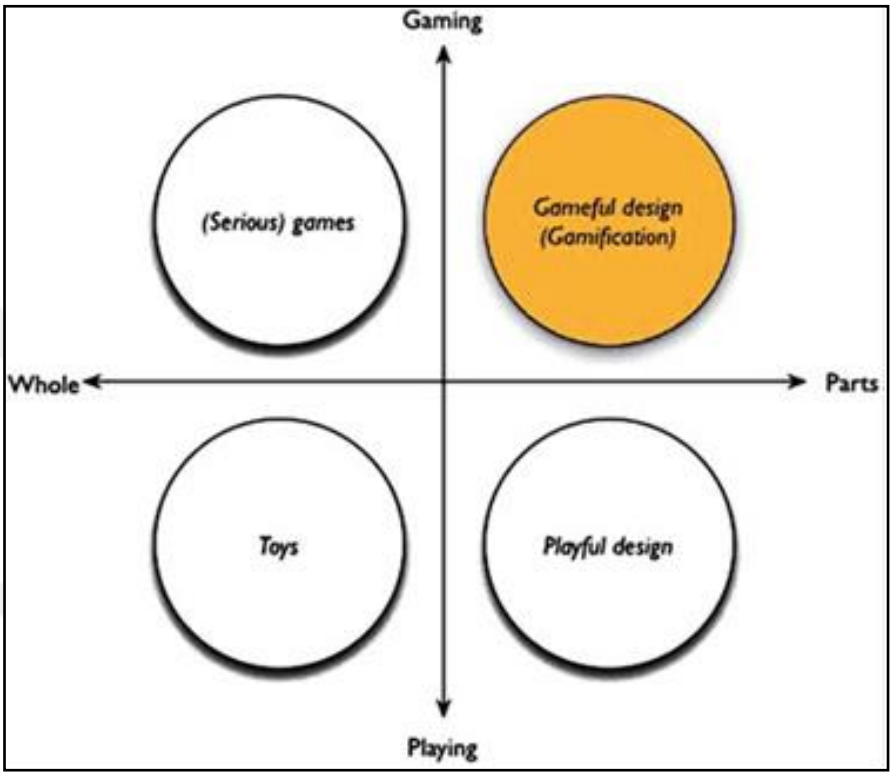

Figure 1. Gamification, serious games, toys and playful design (Deterding et al., 2011, p. 13).

Gamification differentiates from the other related concepts by two dimensions (Figure 1.). Whole versus parts refers to the extent a product or service is using gaming elements. Gamification differs as it only partly uses gaming elements. Other aspects of the product/service remain untouched (e.g., software can still be used to fulfil an operative task, but partly uses gaming elements to improve the enjoyment of using it) whereas serious games are complete games but may have an education or learning background (e.g., a game that teaches the problems of project management). Gaming versus playing indicates if the product/services are considering rule bound

and outcome related elements (gaming) or solely comprise a playing aspect. For example, it differentiates gamification from playful design, as gamification requires a rule-based design and a goal orientation (Barr 2007; Steiglitz et al., 2017).

Gamification is a perfect way to improve many pedagogical tools. Gamification allows teachers, students, and administrators to have an "educational mashup". Gamification and game-based learning have the power to amplify what happens in your class. Gamification has the power to transform the way we teach and the way we learn. It helps to maximize students' potential and their desire to engage in learning. Gamification also provides to its users the avenue to support the expertise that both teachers and students bring to the classroom. Gamification is a collaborative effort that invites opportunities to design and work with colleagues and educators around the globe because gamification has the power to transform the way we teach and the way we learn. Bringing the positive, result-producing aspects of games to the classroom is key to the intentional use of gamification (Matera, 2015).

Gamification sometimes can be confounded with several constructs such as serious games, game-based learning, games for learning, or just games. It is an important point to understand the differences in the educational context. According to the TeachThought website (2018), game based learning can be basically defined as learning with playing or by playing. Kim, Park and Baek (2009) identified the differences between gamification and game-based learning and they indicated that in game based learning, learners reach their educational goals by playing games. In this process, playing is primarily the most important role in the learning process. However, gamification is mostly about game context. The learning process cannot be replaced by games. Gamification makes learning a more participant activity and the goal is to overcome the difficulties in learning over time.

A serious game is an experience designed using game mechanics and game thinking to educate individuals in a specific content domain. On the other hand, gamification uses game elements to engage learners through a reward system, leveling up, point scoring and earning distinctive badges (Kapp, 2012). Becker (2018) outlined the main differences between these terms.

Table 1

Gamification vs Other Terms From "What's the Difference Between Serious Games, Educational Games, and Game-Based Learning?" (Becker, 2018)

Games vs Game-Based Learning (GBL) vs Gamification						
	Game	**Serious Game**	**Game for Learning (G4L)**	**Game-Based Learning (GBL)**	**Game-Based Pedagogy (GBP)**	**Gamification**
Basic Definition	This term includes all the other categories ***except*** gamification.	A game ***designed*** for purposes other than or in addition to pure entertainment.	A game ***designed*** specifically with some learning goals in mind.	The process and practice of ***learning*** using games. [From the ***learner's*** point of view]	The process and practice of ***teaching*** using games. [From the ***teacher's*** point of view]	The use of game elements in a non-game context.
Purpose	Can be for any purpose.	Change in behaviour, attitude, health, understanding, knowledge.	Normally connected with some educational goals.	**Not a game** - this is an approach to learning.	**Not a game** - this is an approach to teaching.	Often used to drive motivation, but can also be used to make something more playful and game like.
Primary Driver (why used)	Can be either play or rewards (or both).	To get the message of the game.	To learn something.	To improve learning. To increase learning effectiveness. **Note GBP & GPL are related, but not the same.*	To improve teaching practice & effectiveness. **Note GBP & GPL are related. They are like two sides of a single coin.*	Depending on how it's implemented, it can tap into extrinsic or intrinsic rewards (or both)
Key Question	Is it fun?	Is it engaging?	Is it effective?	Am I learning what I am supposed / need to be learning?	Is it effective?	Business: Does it improve profits? Education: Is it effective?
Focus	Player Experience *(how)*	Content / Message *(what)*	Content / Message *(what)*	Learning Objectives *(what & how)*	Learning Objectives *(what & how)*	User Experience *(how)*
Budgets	Next to nothing to 100's of millions.	Next to nothing to 100's of thousands.	Next to nothing to 100's of thousands.	Usually part of institutional budget. Largely irrelevant to the user.	Usually part of institutional budget. Largely irrelevant to the user.	Next to nothing to 10's of thousands..
Business Model	User Pays	Producer Pays	Varies	Institution Pays	Institution Pays	Producer Pays
Concept Catalyst	Core Amusement.	Message.	Performance or Knowledge Gap	Game is the lesson or is used as a part of the lesson.	Game is the lesson or is used as a part of the lesson.	In learning it usually impacts HOW things are taught and administered rather than WHAT is taught.
Fidelity	Self-consistent, otherwise irrelevant	Faithfulness to message essential	Faithfulness to message essential	Faithfulness to message essential	Faithfulness to message essential	Not Applicable. If a narrative exists, it need have nothing to do with what's being gamified.

2.2.1 History of gamification. Gamification, a term coined in the early 2000s, refers to the use of video-game logic and psychology in real-world environments, most prominently in marketing, education, and the corporate world. The theory of gamification holds that people—whether consumers, coworkers, or students—respond naturally and efficiently to competition, reward, and simulated risk of the type that have made video games such a cultural phenomenon since the 1980s. The concept applies especially to the generation of Americans born after 1975, many of whom were raised playing video games, who began assuming positions of prominence in businesses and organizations in the early twenty-first century. These video-game aficionados brought with them many of the assumptions

and strategies of gaming—incentivized decision making, rapid problem solving, the self-evident logic of specific tasks and short-term rewards, an adrenaline response to simulated risk, and the perception of achievement as a measure of self-expression—all guided by the assumption that operating in such a matrix is both fun and profitable (Dewey, 2013).

Gamification is not a recent phenomenon. Using game-like applications in different environments has been around longer than just this new millennium. In 1969, Clark Abt defined carrying out a game which is named as "Grand Strategy" into a junior high school curriculum. This game engaged students in the real life role-playing of battles from World War I. The activity began before lunch, and when lunchtime came, students rushed through their lunch to have more time in the library to prepare for the afternoon activities. Abt noticed a dramatic change in students and their newfound engagement in learning (Michael & Chen, 2006).

Although some researchers claim that the origin of the word gamification remains unclear, some others agree that the term "gamification" was originally created by Pelling in 2002, meaning "applying game-like accelerated user interface design to make electronic transactions both enjoyable and fast". In addition, the concept of gamification was also attributed to Schell (2008). On the other hand, the creator of the concept is not as important as the operation definition and usage of the term (McFarland, 2017).

After this point, the term "gamification" has received a wider meaning and started to become more popular. As a result of the specialized companies and industry players, it got a wider adoption. In the second half of 2010. These companies, such as BigDood and Bunchball have been focusing on using gamification for business purposes (Deterding et al., 2011, Prakash & Rao, 2015). Foursquare, which is the first popular mobile application helped gamification to become more common in 2009. It has lots of features such as a social networking layer, badges, points, self-tracking system and search features that we have in standard games (Fryers, 2017).

Gamification has seen a remarkable growth in several areas such as education, management, business and marketing in recent times. The popularity of gamification is changing rapidly. In 2010, very few articles were published about gamification. In recent years, much research paid special attention to gamification and more than 2000 articles were published by 2015. These results demonstrate the growing attention of using gamified elements in non-game settings (Hamari, Koivisto, & Sarsa, 2014).

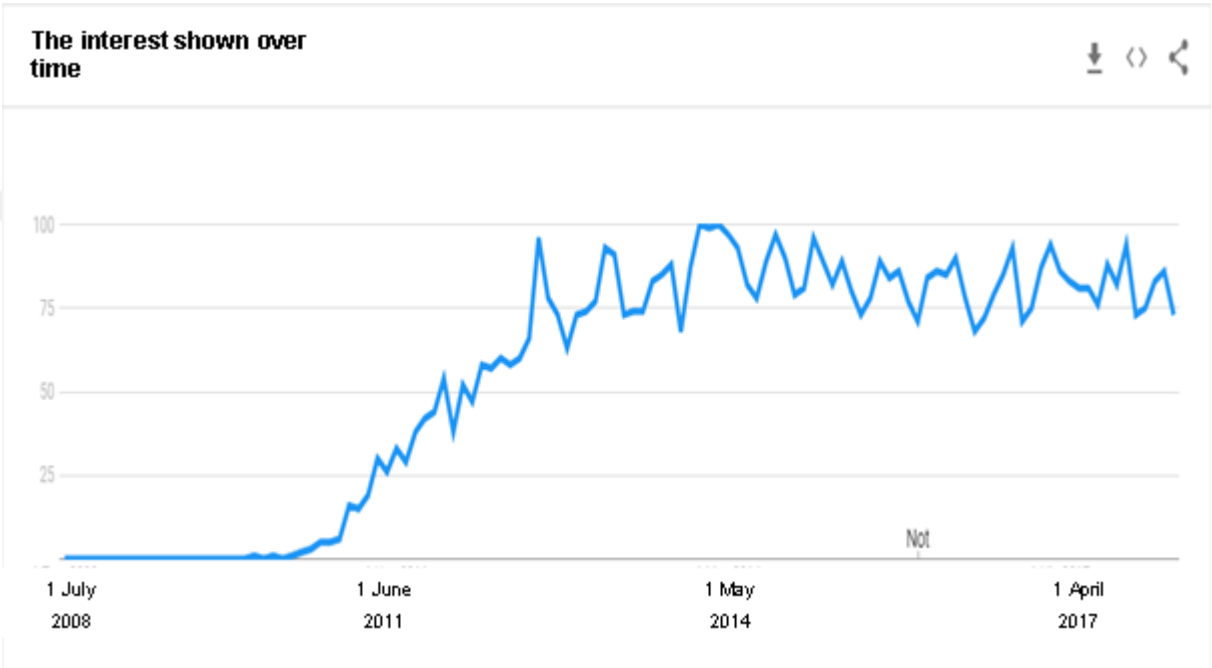

Figure 2. Google trends results for gamification. ("Google Trends," n.d.)

2.2.2 Principles of Gamification. Nah and colleagues (2013) reviewed the related literature and suggested that there are five basic principles of gamification. The first principle of gamification is being goal oriented. Layer by layer goal setting must be an imperative component of the design structure while designing educational games.

Layers of goals are important in educational games. An educational game should involve and present long-term goals, medium-term goals and short-term goals that a player should complete to pass a level and to complete a mission. Games also

can break down missions into numerous tasks. The challenge of an educational game rises as the student who is the player completes the missions and passes the levels.

Balancing the player's abilities and knowledge with the challenge that they have to struggle in the game allows players to maintain player engagement. Therefore, a goal-oriented game helps students to advance consistently from a beginner to a master as he/she shows mastery of the knowledge and abilities. Well-defined and understandable aims also help learners to focus and maintain attention, to develop motivation and engagement (Nah, Eschenbrenner, De Wester, & Park, 2010).

The second principle of gamification is achievement. Recognizing accomplishment is important to increase players' satisfaction and pleasure. Increased satisfaction also raises player engagement and motivation. In this regard, it is substantial to apply identification of accomplishment that supports players' engagement, in the context of educational games. High engagement will also result in high learning achievement. Several forms such as badges, stars, trophies and awards can be used to recognize accomplishment.

The third principle of gamification is reinforcement. According to the behavioral learning theory, reinforcement is one of the basic factors that help learning to take place. Several forms of reinforcement like verbal praise or compliments can be used for teaching (Skinner, 1954). Therefore, most educational games have a reward system which is based on player performance and present feedback to promote reinforcement. In an educational game, positive reinforcement like points suggests players' satisfaction and pleasure which can be applied to support learning from the game. On the other hand, negative reinforcement can submit players to improve knowledge or abilities to advance them and their objectives more easily.

The fourth principle of gamification is competition. Competition is a basic part of most of the games. Using competitive tools and several rewards, games motivate players and sustain their engagement (Liu & Santhanam, 2010). In an educational

game competition has a key role to increase students' motivation and focus on the task. An educational game should have well-defined rules to help students to discover learning. Generating rules within the game by the player is important to provide opportunities for learning.

The last principle of gamification is fun orientation. If a player experiences fun with a game he/she will be more engaged in the specified task. Fun is an important factor for engagement. Most of the computer games offer fun. Therefore, an educational game should also be fun to motivate and engage learners. An effective educational game should have a fun component (Agarwall & Karahanna, 2000).

2.2.3 Gamification Design. Although some people may think that designing and implementing gamification is not difficult, but gamification design is not simple. The implementation of game elements can be difficult for individuals who are not an expert. In addition, a significant amount of time and effort may be necessary to design and apply gamification. Unlike using ordinary teaching methods gamification may necessitate the usage of storyboards, prototypes, and flowcharts. In addition, it requires assessment, modification, and feedback (Brigham, 2015).

In order to support the business dynamics, a variety of mechanics and components are needed to be carefully designed. These dynamics need to be directly connected to the key business process and expected outcomes. Werbach and Hunter (2012) developed a three-categorized model of gamification to explain the gamification approach. The elements of gamification are labeled as dynamics, mechanics, and components.

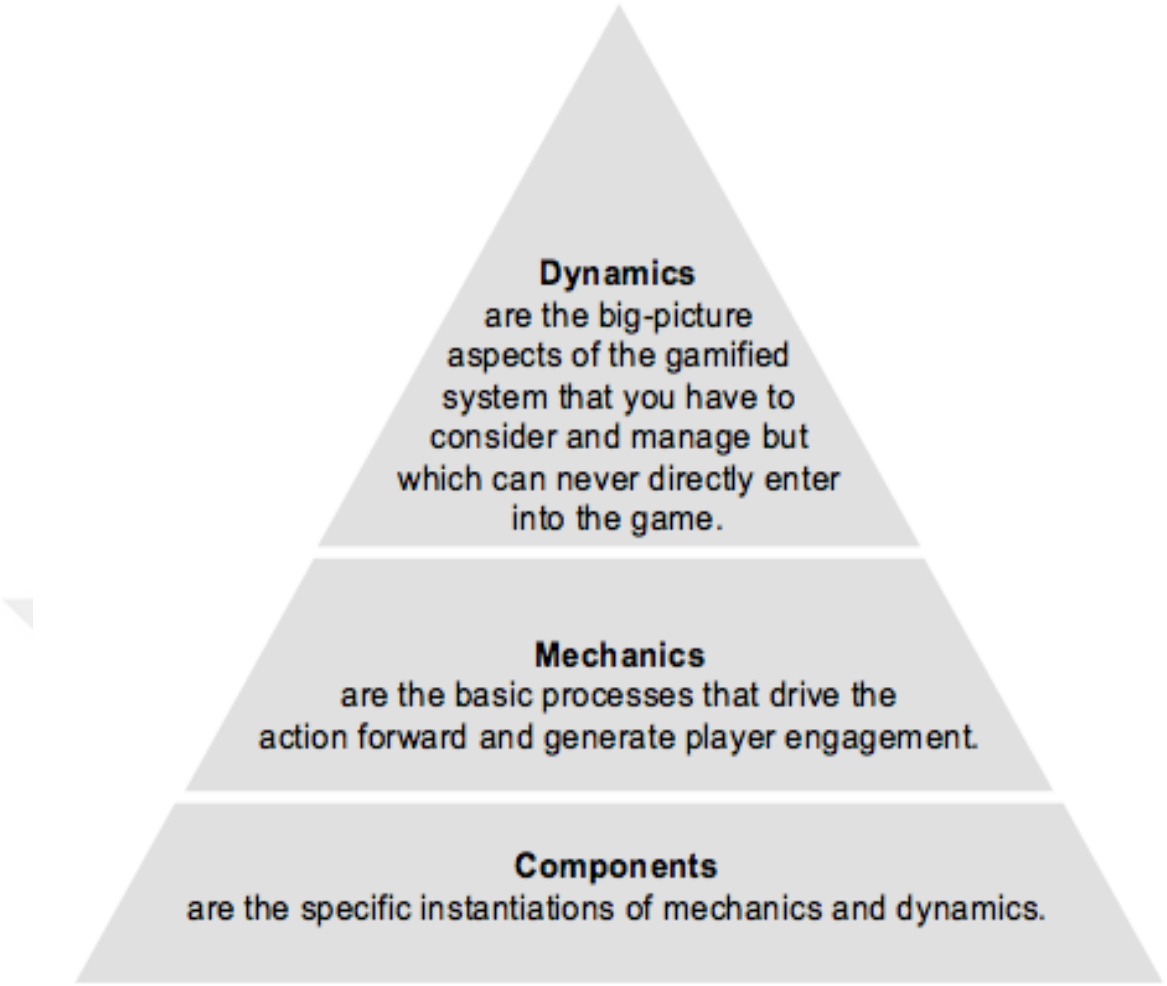

Figure 3. Gamification Model and Components (Coccoli, Iacono & Vercelli, 2015, p. 77).

2.2.3.1 Components . Components are the most obvious and first come to mind parts of the gamification process. Multiple components can only be used with a single gamification mechanism. Components should be selected according to the objective and purpose of the system, the characteristics of the target group, and software tools. Careful though is necessary to use these tools effectively.

Achievements: The player is awarded for performing a specific task.

Avatar: Avatar is a visual representation of the player's character.

Badges: These are visual items that usually represent the achievements in the game. Badges can be flexible and they can be used as a tool for measuring success. Badges also allow users' motivation to reach personal goals. Badges are great tools to strengthen social promotion of their services and products. Badges are also important to point out the completion of goals and the constant progress of play within the game system.

Boss fights: Boss fights are the challenges that must be overcome to get to the next level at the end of each level, and are more difficult than other challenges.

Collections: Collecting certain things like badges in the game.

Combat: Combat refers to the fighting within the game thus competing with the opponent. It is a challenge between two users. They try to achieve to outdo one another.

Content unlocking: Unlocking certain content in the game after fulfilling the pre-requisites or achieving a desired goal.

Gifting: Gifting allows sharing or giving something or objects to other players such as virtual money. Resources can be shared between users. It allows the user to enjoy the benefits of sharing altruism.

Leaderboards: The list that players are listed according to their scores. It also shows progression of users and allows us to compare the players relatively. Therefore, a leaderboard is used to make simple comparisons.

Levels: Levels indicate how good the player is in the game. Difficult levels provide users with new challenges. As a signal for players' levels provide information to know where a player stands in a game over time.

Points: Points are used to assess the record of players' success. Points are closely related with levels. Points can be specified as experience points, redeemable points, skill points, karma points, and reputation points

Quests: Quests are the places where players move through to be rewarded. Objectives define the quests such as milestones.

Social graph: Social graphs are the components that allow the user to see other players within a game. A social graph allows interaction with others. It is like an extension of the social networking experience in the game.

Teams: Collaborating with others to achieve a defined goal.

Virtual goods: They are the objects that the player can collect or use in the game. Although these objects are virtual, they are valuable for the player. They usually provide an advantage to a player (Bozkurt & Genç-Kumtepe, 2014; Wood & Reiners, 2015; Zucherman & Cunningham, 2001).

2.2.3.2 Mechanics . In comparison to components, the mechanics are a little more abstract. Mechanics are, generally, related to the continuing nature of how particular components change over time. They are also associated with the interaction of users within the framework. The mechanics are constructs which describe potential actions by the user. They explore the things that effect user behavior and the reactions on a happening event.

Achievements: Achievements are the targets for the players and represent milestones in the storyline. An achievement could be the accomplishment of an activity over a certain time. The badges can be used to award an achievement.

Challenges: Challenges are a set of goals that the player must complete to win the game or pass the level. They are described by a list of aims to be achieved and necessitate users' effort to achieve.

Cooperation: Cooperation concerns the sense of winning or losing. The players either cooperate with each other or fight to win. In general users cooperate to reach an objective that can't be accomplished alone.

Feedback: Feedback provides players' with knowledge about their states in the game reinforcing the feeling of progress and informing the players when it is time to

do the right thing to win the game. It is generally provided through leaderboards and messages.

Ownership: Ownership refers to resources that can be acquired, consumed, and traded.

Progression: It is a construct showing the player's development. It is more meaningful and important for players to show progress than to do the same things. In a game the user should see their progress in an activity.

Transactions: Transactions refer to receiving something from other players or selling them something in the game and trading.

Stochastic elements: These elements are related to randomness. In a game everything is not dependent on skills. Chance factors that provide a sense of uncertainty are also important.

Turns: Each player has a chance to play the game. This situation, which is more common in traditional games, is real time in digital games.

Resource acquisition: Players need to collect certain resources to reach their goals during the game or win the game.

Rewards: The rewards are the sign of the player's success. Rewards can be placed in four basic categories: status, access, power and good. The frequency of the awards is an important point to pay attention to. Rewards are related to the sustainability of the game (Bozkurt & Genç-Kumtepe, 2014; Wood & Reiners, 2015; Zucherman & Cunningham, 2001).

2.2.3.3 Dynamics . Almost every type of game has dynamics and dynamics are the basic principles of gamification design. Dynamics depend on the experience of the users. The design of game dynamics may combine the players' attributes, which should be updated during the whole of the growth within the gamified system.

Constraints: All the games have constraints. They define the limits of the player's freedom.

Emotions: There can be different emotions within a game, from sadness to happiness. The feeling of enjoyment in a game is important, and the gratification that occurs because of a victory is the effective reinforcement that allows the player to continue playing the game. Emotions are subjective experiences of players which includes a sense of competitiveness.

Narrations or Storylines: Narrations are the structures that makes the game a harmonious whole. Storytelling can be clear like a scenario or it can be latent. They are elements brought into directly from several successful video games.

Relationships: Relationships refers to the interaction of players with other players. This interaction can be between friends, teammates or competitors.

Win states: A win state expresses the winning status or rank in a game.

2.2.4. Underlying Theories of Gamification

Gamification can be considered as a learning approach with many different dimensions. There are various theoretical approaches at the core of the approach to gamification involving both internal and external items. The basics of gamification is the motivation and the desire of increasing students' motivation towards the lesson. Therefore, gamification is based on motivational approaches. However, gamification is also based on various approaches such as social learning approach, self-determination theory and flow theory with motivation.

***2.2.4.1 Motivation*.** Motivation is the key concept of game play. Motivation especially driven from within the learner or motivations from external factors are critical for the term of gamification. John Keller developed a four-factor model which is based on a combination of motivational constructs and characteristics into the four distinct categories of attention, relevance, confidence, and satisfaction. This model is well known in the field of instructional design and is used as a framework

in creating e-learning. Several elements of this model can be applied to different aspects of gamification (Kapp, 2012; Keller, 2000).

Gaining *attention* of learners' is the first element of the model. Teachers can use different ways such as using elements of surprise or conflict, presenting a question to stimulate curiosity and varying the delivery method regularly to sustain students' attention. The second element is building *relevance.* A learner can be motivated if the content has perceived value to the learner (Keller, 2000). According to Kapp (2012) explaining to the learner the importance of the goal, matching the motives of the instruction with the motives of the student, indicating the similarities between the new knowledge and existing knowledge and modeling the results of learning the new knowledge should be used to establish relevance.

The third element to build motivation is *confidence.* Confidence is related to allowing students to establish a positive anticipation of success. If a student believes that he can learn the material he can be more motivated to proceed. Defining learning expectations in the beginning clearly helps students to be more confident. In addition, building succes and providing feedback that allow students to control their success also helps to build confidence. *Satisfaction* that means positive thoughts and ideas about one's achievements and learning experiences is the last element to maintain motivation. Satisfaction is related to feeling that the learning is valuable and for the learner it is worth continuing and making an effort (Kapp, 2012; Keller, 2000).

Thomas Malone also investigated why games are motivational and suggested three important elements that make a game motivational. Challenge and creating a challenging environment which depends on having goal with uncertain results is the first element. Using fantasies which can make educational environments more interesting is the second element. Evoking curiosity which can be done through a novel and exciting environment is the third element (Kapp, 2012).

2.2.4.2 Self-determination theory. Self-Determination Theory (Ryan & Deci, 2000) is a well-known theory which offers a broad explanation of human motivation

to perform a task or activity. The theory has been used to describe motivation in a broad range of human activities such as sports, healthcare, education, work and religion. The theory explains both the factors that facilitate or undermine motivation. The theory states three inherited needs for intrinsic motivation: relatedness, competence and autonomy (Kapp, 2012).

Relatedness is related to the need of connecting with others. Relatedness can happen in an online multiplayer game or when two or more friends play a game. Thus, social relatedness may motivate individuals to play a game. *Competenc*e is related to the need of being effective and to solve a problem in a specific environment. If a player experiences the feeling of competence and mastery he/she will be motivated to play a game. Koster (2006) stated that "fun from games arises out of mastery. It arises out of comprehension. It is the act of solving puzzles that makes games fun." When the game controls are intuitive and already mastered, competence would be enhanced in a gaming context, and the task within the game will provide ongoing optimal challenges and opportunities for feedback. *Autonomy* is related to the need of controlling one's own life. Individuals want to believe that they can determine the outcome of their actions. Most games are voluntary activities and individuals may choose to play or not. Thus, their autonomy for play would be high. They are in control of their choices. Perceived autonomy is high if the activities are done for personal value or interest. Autonomy is enhanced more when there are more structured rewards aiming at giving feedback instead of controlling the player's behavior. (Groh, 2012; Kapp, 2012; Ryan, Rigby & Przybylski, 2006).

2.2.4.3 Flow. Flow is a state of heightened focus and the immersion one experiences while participating in activities such as art, play, and work. Csikszentmihalyi (2008) defined flow as the creative moment when a person is completely involved in an activity for their own sake. It is the ideal state between boredom and anxiety (Matera, 2015; Stieglitz et al., 2017).

Flow is elusive and can't always or easily be designed into a game. It is even harder to test for flow because it is hard for a designer of a game to get into a flow state with his/her own game. On the other hand, flow is something game designers

want their players to achieve. While game designers can't guarantee a flow, the state will occur for a player, the designer can create conditions under which flow state could occur. The ideal goal of game designers is to shape the instructional games they develop so it is possible for players to enter into a state of flow (Kapp, 2012).

There are eight components to make flow possible: achievable task, concentration, clear goals, feedback, effortless involvement, control over actions, concern for self disappears and there is a loss of the sense of time (Csikszentmihalyi, 2008). Flow theory suggests that experiences will be more positive when the environment contains challenges that are matched with the person's skills. If games are too challenging for a player's skill level, the player may become anxious or disheartened and give up. If the game is too easy for the player's skill level, the player is likely to become bored and quit. When the challenges are matched to the skill level, and the challenges become increasingly more difficult as the game progresses, then the stage has been set to achieve flow (Jacobs, 2016).

2.2.4.4 Social learning theory. Social learning theory is based on the premise that observation and imitation lead to learned behavior. Bandura (1971) suggested that learning is a cognitive process in a social environment. Observing or direct instructions are important factors that have an influence on learning. Social learning theory is also named as observational learning. Punishment and rewarding also provoke learning in a social environment. An individual pays attention to the other person's behavior and may imitate them. In other words, and individual as a social model can be effective on another person's behavior may change his/her behavior, attitudes and beliefs.

Previous studies indicated that humans can be socially influenced by avatars which can also be social models. The use of virtual models to demonstrate desired behaviors can be effective in transferring those behaviors to learners. The use of avatars for presenting the proper model of behavior does transfer learning. The game environment allows the creation of an unlimited number of contexts in which behavior can be modeled (Kapp, 2012).

2.2.5 Benefits of Gamification: Using gamification for learning has many benefits over traditional and boring methods. Learning through games has higher retention and recall. Learners enjoy while learning. Creativity in such an environment is stimulated. Furthermore, reward systems tend to increase the performance. Among other methods, gaming is the best method to encourage learning (Hirumi, 2010).

Dickey (2006) claims that gamified elements appeal to five different types of intrinsic motivation: choice (through customizable characters), control (through quest selection and completion order), collaboration (through chat and group quests), and challenge (through high-level content), and achievement (through levels, status, and skills). Using game elements may generate an equally stimulating environment for students that help them to be motivated and engaged learners.

Gamification is extremely useful in understanding of the complex systems and processes. Game itself is a system, where the user has to manipulate it with using different parts and components. A whole system can be imitated in a game. Flying simulation is a perfect example of this. A pilot flies and understands the different components of a plane's flying system in a gaming environment, before making an actual flight (Sales & Zimmerman, 2003).

Indeed, simulation games can be a useful tool to teach complex systems. Squire, Givanette, Davane and Durga (2005) demonstrated the impact of a game (Civilization) on student's learning of politics, civics and military strategies. Students learned impressively through this game how these components of a state work.

Gamification is a great way to augment reflective learning as it instantly presents the results of an action and decision. Enhanced control over a game is directly proportional to increased learning. Control over learning builds confidence and the learner becomes more aware of his skills and abilities as he moves up to higher levels. Furthermore, games provide an experimental arena where they can learn and test learned skills through trial and error without fear (Hirumi, 2010).

Feedback is the other advantage of using game elements in the classroom. While playing, where rules for actions set the do's and don'ts, they also provide on the spot feedback to the player. This enhance self-regulation. Players make faults and through instant feedback, he learns, experiments and rectifies faults, hence making the forthcoming actions better than the previous one. This learning feedback is continuous throughout the whole gaming session and results in with profound learning (Hirumi, 2010).

According to Kapp (2012) the rigid system that the usual classroom environment is based on doesn't encourage creativity and punishes students' mistakes. It is inevitable that students will make several mistakes. Therefore, using games or designing a gamified environment permits students to test themselves in a low-risk environment. Through gamification, students may explore alternative options easily.

Gamification is more about exploration of the course and content than it is about playing a game. It is a tool that a teacher can use to motivate, inspire and take students on an adventure within the course content. Combining the many elements of game mechanics helps create noteworthy experiences which push students well beyond the bounds of the traditional classroom. Through the game mechanics and game elements, a teacher may increase students'' motivation, passion and willingness to explore learning opportunities (Matera, 2015).

Using gamified elements allows increased motivation. Depending on the advantages and positive aspects of gamification, it is seen that students have a positive influence on their academic motivation, classroom orientation and participation. Gamification elements can be prepared and developed for different aspects and characteristics of students. Using these elements correctly is a factor that increases students' motivation.

2.3 Academic Motivation

One of the most important factors that influence academic achievement is motivation to learn. A student who is motivated to learn tends to regulate his/her

behavior in a way that helps him/her to learn. Motivated students tend to be more successful, spend more time at school, learn better and easier, and have better exam results (Sternberg & Williams, 2009). For this reason, it can be said that student should be motivated to learn in order to increase their academic achievement.

Motivation is an internal condition that elicits, directs, and sustains behavior. It can also be thought of as an internal energy or mental force that helps a person to achieve a goal. Motivation can be defined as the "activating orientation of current life pursuits toward a positively evaluated goal state" (Rheinberg, 2004, p. 17). Previous studies indicated that motivation has an impact on students' academic achievements and performances and attitudes towards lessons. In addition, students with higher motivation have a positive attitude towards school and have lower levels of anxiety (Yurt & Bozer, 2015).

Motivation is an important factor affecting student behavior and attitudes in all levels of education. Deci and Ryan (2000) stated that being motivated means getting into action to do something. For example, if a person does not feel that he/she has the power or inspiration to do a job or perform a task, he/she is not motivated. On the other hand, someone is motivated if he/she performs a task or does something that is full of energy. Individuals have different levels of motivation as well as different kinds of motivations. Motivational orientations determine the attitudes and objectives that lead to the importance of action. Motivation is a theoretical structure that attempts to explain the initiation, direction, frequency, and continuity of behavior. At the same time, motivation emerges as an applied structure that explains the reasons for what individuals do. Behavior with priority goals with special results and strategies to achieve these goals provide motivation. Motivation creates the starting point for learning a lesson, energizes student, and contributes to students' achievement during school years (Gömleksiz & Serhatlıoğlu, 2014).

Academic motivation can be defined as the production of the energy required for academic work, while the opinions on the source of this energy vary from theory to theory. Several conceptual perspectives are proposed to better understand academic motivation. One of the most well-known perspectives suggests that

behavior may be motivated either internally or externally (Deci and Ryan, 1985). This conceptual approach, which is named as the Self-Determination Theory (SDT), has generated a large amount of research (Karataş & Erden, 2012).

Ryan and Deci (2000, p.56) defined intrinsic motivation as "the doing of an activity for its inherent satisfaction rather than for some separable consequence."

Vellerand and his co-researchers (Vellerand et al. 1993) coined a concept of tripartite or three-way intrinsic motivation and categorized it in three categories. According to them: 1. Intrinsic motivation can be directed towards accomplishment or attainment of something, where individuals take great pleasure to create new things, 2. Intrinsic motivation to know occurs when people are highly engaged and feel elevated satisfaction when learning and searching for new things, 3. Intrinsic motivation to execute any action or activity happens when people experience enjoyable sensations

Intrinsic motivation has a positive impact on school performance. Students who are intrinsically motivated reported higher academic achievement, higher intellectual performance, higher self-esteem, better well-being, low anxiety and better cognitive flexibility (Areepattamannil, Freeman & Klinger, 2011).

In contrast to intrinsic motivation, extrinsic motivation is concerned with external factors. According to Ryan and Deci's (2000, p. 60) "extrinsic motivation is a construct that pertains whenever an activity is done in order to attain some separable outcome." Extrinsically motivated behavior is behavior undertaken in order to obtain some reward or avoid punishment. Extrinsic motivation is an also multidimensional concept, Deci and Ryan (1985) have proposed, varied types of extrinsic motivation in the category of external regulation, introjected regulation, identification and integrated regulation. On the continuum scale of self-determination, they are placed on the minimum to the maximum autonomous form of extrinsic motivation. Academic results are also impacted by extrinsic motivation. Students driven by extrinsic motivation reported lower academic achievement,

higher anxiety, less positive emotions in school and lower ability to cope with failures (Arrepattamannil et al,. 2011).

Amotivation which means lack of motivation is related to being not intrinsically or extrinsically motivated. Individuals are amotivated when they feel an inconsistency between the outcomes and their own acts. Amotivated individuals find an action invaluable and may feel a sense of uselessness in their behavior. They think that their acts are directed by forces out of their control. Amotivated individuals aren't willing to participate in academic activities (Vallerand et al. 1993).

2.3.1. Gamification and Academic Motivation: Especially after the 1990s commercial successes, computer games have begun to be seen as a tool that can be used effectively in education. It is also known that computer games, Internet, mobile phones and instant messaging have an important place in the lives of students born in the age of primary and secondary education and born after the year 2000. Students of the 21st century speak the digital language of computers, the Internet and video games as mother tongue. Called digital natives, these students are trained using digital media tools such as the Internet, computers and mobile phones. Technological tools are also at the center of these students' lives. On the other hand, the fact that these students have a different learning and information processing style and from their learning styles of their teachers who were raised in the mediums where the printed sources are used have brought about the more effective use of the games to increase motivation. (Prensky, 2001, 2005).

Nowadays, it is known that students prefer accessing information more quickly, are more willing and motivated to learn by exploring, and they prefer games rather than serious studies (Bilgiç, Duman & Seferoğlu, 2011). It can be observed from outside that students are excitedly involved in a game emotionally and motivationally while playing digital games. The main reason for using gamification and gamification in education is the power it has, being fun and intense use of digital games by motivating them. Therefore, gamification has been evaluated as a factor for increasing students' interest in the lessons. (Sailer, Hense, Mandl, & Klevers, 2013).

Motivation can be defined as the psychological process that enables an individual to initiate and pursue a goal-oriented behavior. Six different approaches to the contribution and influence of gamification components to the motivation of students can be mentioned. The first approach, the trait approach, states that individual characteristics, which are generally thought to be invariant, are effective in the individual's movement. According to this approach, the need for success, belonging or power are crucial motivators. Therefore, it is important to be able to use gamification to enable the individual to win, compete, have status and become a member of a group. (McCelland, 2009; Sailer et al., 2013).

The second approach is a behaviorist learning approach which advocates that learning happens as a conclusion of positive or negative reinforcement and these reinforcements increase the frequency of behavior. Gamification practices that provide instant positive or negative feedback and allow students to win a prize can be effective motivation sources. The third approach (cognitive approach) relates motivation to expectations, values, and goal-orientation. Gamification practices which provide clear goals and care about the actions of individuals in a situation increase students' motivation (Heckhausen, 1977).

The fourth approach, the self-determination approach, suggests that there is a satisfaction of three universal needs, those being called competence, autonomy and social commitment. This approach is particularly related to the development of internal motivation. Therefore, students who feel themselves as competent, autonomous and socially connected can become more motivated. The fifth approach, the interest approach, states that an interested person is motivated and takes action on the subject. In addition, the things that students do with pleasure and focus are much more effective in their motivation. This situation, called streaming, can be achieved by directing students in play, presenting the level of difficulty appropriate to his or her competencies and setting clear goals. The emotion approach, the last approach, draws attention to the importance of emotional processes in motivation. Gamification applications that reduce the negative emotions of students such as fear and anger but increase their positive feelings like sympathy and pleasure motivate students more (Deci & Ryan, 2000; Ryan & Deci, 2000; Sailer et al., 2013).

The incentive structure of components in gamification make them used more extensively to increase motivation in learning environments. Components such as rewards and competition that are inherent in gamification can act as an important source of external motivation. Therefore, gamification is an important alternative especially in the case of students with low internal motivation. It is also an important motivational tool to increase user participation, which is one of the most basic purposes of gamification.

2.3.2. Gamification, Academic Motivation and Teaching English. One of the most important competencies expected from students today is to be able to learn a foreign language and to use it effectively. . Depending on this situation, the methods used to teach a second language may differ depending on the characteristics of students and their age. New approaches that increase motivation and achievements of students are included in language teaching curriculums. Over the years, different motivational methods have been used in language teaching. As it is widely used in all other areas of education, gamification is also used as an effective motivation source in language teaching (Flores, 2015).

Gamification increases the interest and motivation of students towards lesson. Motivation is one of the main factors that facilitate language learning. Gardner (1985) states that there are many advantages of knowing a language but no language is absolutely necessary, therefore, motivation has an important role in learning a second language. Gamification elements are closely related to internal and external motivational factors necessary for language learning. The studies show that although the use of gamification is new in the field of language teaching, it can be used successfully in language learning (Flores, 2015).

Use of gamification and similar technologies in language teaching help language learners to have very valuable learning experiences and to have a positive effect on various aspects such as self-esteem, risk taking and motivation level. It is also known that using current technologies and digital games (a) enhances teacher effectiveness, (b) provides students with access to richer learning tools, (c) creates a competitive environment among students, and (d) affects school quality positively

(Dogoriti, Pange & Anderson, 2014). On the other hand, it is not possible to avoid using digital games as learning and teaching tools in the new millennium. Therefore, it is possible to use gamification effectively in courses where students are having difficulty in learning a foreign language.

2.4 Self-Efficacy for English

Bandura (1997) explains the concept of self-efficacy is a belief that people can organize their talents and that they can develop competence in relation to a new situation they are facing and defined self-efficacy as referring to self-perceptions or beliefs of capability to learn or perform tasks at designated levels. Self-efficacy beliefs provide a basis for people's motivations, and personal accomplishments. Self-efficacy beliefs of personal competence may influence an individual's behavior in different ways. According to Bandura (1977) self-efficacy beliefs may have an impact on an individual's choices, the effort he/she spends, the way he/she acts, and the level of his/her perseverance. Individuals tend to choose activities that they believe that they can do and feel themselves component. They avoid performing tasks that they feel they are not capable of.

Self-efficacy beliefs allow an individual to make a plan about the effort that he/she will spend to perform a task. It is also related to persistence when a person encounters difficulties and the level of resilience in difficult situations. Highly self-efficious individuals tend to show greater effort, elasticity and perseverance. In addition, self-efficacy beliefs have an impact on individuals' feelings and thoughts. Highly self-efficious individuals think that tasks are easier than they are. These thoughts help them to experience feelings of calmness and challenge in the face of difficult tasks (van Dinther, Dochy & Segers, 2011).

Social cognitive theory postulates that there are four essential sources of self-efficacy: (1) mastery experiences, (2) vicarious experiences, (3) social persuasions and (4) physiological and psychological states. Mastery experiences which are the most effective source of creating a powerful belief of efficacy are related to interpretation of the results of a person's previous achievements. Mastery

experiences provide authentic evidence to a student that he/she is capable of performing a task. After completing an academic task, a student may evaluate the results and has an idea about his/her competence according to interpretation. Vicarious experiences are the second source of self-efficacy beliefs. They create self-efficacy beliefs through observing social models. Thus, social models have an important role on self-efficacy development. By observational experiences students have information about their own capacities. They especially observe their peers and make a comparison about their capabilities that increase or decrease their self-efficacy (Usher & Pajares, 2007; van Dinther et al., 2011).

Verbal and social persuasions are the third source of self-efficacy beliefs. When they perform a task, students usually receive information which confirms and persuades them. Encouragement from adults such as teachers and parents or peers whom students rely on may enhance students' confidence in their academic skills. In other words, supportive information may serve as a factor that improves students' self-confidence and effort. Realistic and reliable information feedback is an effective way to create a sense of self-efficacy. The fourth source of self-efficacy is physiological and psychological states. The emotional state or mood of a person may affect self-efficacy. While a positive mood strengthens self-efficacy belief, a negative mood may weaken it. Physiological states like stress, anxiety, and fatigue can be seen as signals of failure or as an indicator of personal competence (Schunk, 1991; Usher & Pajares, 2007; van Dinther et al., 2011)

Previous studies indicated that self-efficacy beliefs of students have a powerful impact on academic variables, learning and motivation. Self-efficacy influences the goals they set, their task interest and task persistence. Self-efficacy is also positively related with academic achievement (van Dinther et al., 2011). In addition, self-efficacy beliefs are closely related with language learning. A strong relationship was found between students' listening skills, language learning strategies and self-efficacy beliefs (Ocak & Olur, 2008; Rahimi & Abedini, 2009).

2.4.1. Gamification and English Self-Efficacy. Self-efficacy can be defined as considering an individual's own judgement of himself or herself, successfully

taking necessary steps to achieve a certain action (Lee, 2005). So self-efficacy is the belief that one has the skills necessary to perform a certain action. According to Bandura (1994), strong self-efficacy helps individuals succeed and affects their happiness positively. Individuals with weak self-efficacy struggle to overcome with situations when they face a difficult task. Self-efficacy that acts as a key influences activity selection and motivation, contributing to the information acquisition phase. It influences efficient thinking and efforts of individuals (Bandura, 1997). It can be said that self-efficacy beliefs are a hypothesis that influences individuals' choice of tasks, their efforts, their insistence and their success (Bandura, 1997; Schunk, 1995).

The use of gamification components in education increases the motivation of students as well as their self-efficacy levels. Students compete with both themselves and their friends in the practice of gamification, and the desire to be successful lead students to be more competent and to learn better. It is quite natural that students want to see their names in the top row of the game that they play. Bandura (1997) shows that the most important source of self-efficiency is success in performance. The success of an individual's engagement is an indication that he or she may be successful in similar tasks. Gamification practices and components such as achieving certain levels increases student self-efficacy by providing performance indicators.

Indirect experiences are one of the basic sources that influence the self-efficacy level of individuals. Students who observe their peers can develop a belief that they can learn that task (Bandura, 1997). Effective use of gamification in class can affect the self-efficacy levels of students who see their friends levelling up, learning new things, receiving positive feedback, or earning awards. On the other hand, computer games are generally thought to provide fun environments for students. Students want to use their games in their lessons and try to solve problems while playing games. It is also a common finding that there are environments that support the co-operation of games. While the games increase the level of motivation of learners, they allow students to have interest in content, to maintain confidence and activity about learning, and to create relaxation and motivation in students. Thus, student's perception of success and self-efficacy increase (Bayırtepe & Tüzün, 2007).

Chapter 3

Methodology

In this section, the method used in the research is discussed. In this context, the content of this section consists of information on the research model, participants, the procedure, data collection tools, collection of data and analysis of data.

3.1 Research Design

This research is aimed at examining the effects of a gamified environment (ClassCraft) on students' academic motivation and self-efficacy for the language learning of middle school students. A pre-experimental study which is a subcategory of experimental studies was used for this research. According to Creswell (2009), in a pre-experimental design, the researcher has one group and uses an intervention in the experiment. Both quantitative data and qualitative data were collected in this study.

Mixed research method, applying qualitative and quantitative research methods was used to carry out the study. According to Balcı (2010) mixed research is a qualitative and quantitative method or a paradigm shift approach. Quantitative methods are incorporated to observe the effect of the exercises new language learning, academic motivation and levels of self-efficacy of students.

On the qualitative side of the research, face to face interviews were conducted to collect student views on the application of the gamification and its results. The interviewing method is useful in qualitative research and in obtaining accurate and correct data about the research topic (Judd, Smith & Kidder, 1991). For this reason, the interview method is one of the most common data collection methods used in qualitative research. Based on these reasons, using a semi-structured interview method has been adopted in this research.

Pre-experimental studies lack control groups and cannot compare two groups. In the present study one-group for pretest-posttest design was used to measure the magnitude of the change resulting from the intervention which in the current study

was the gamified environment (ClassCraft), by comparing the pre-intervention data to post-test intervention data. In this design, the effect of the independent variable is tested on the selected sample (Karasar, 2005).

In this model, measurements are applied both before and after the experiment. The effect of the independent variable on the mean pretest and posttest scores of the experimental group is essential in this model. The measurements were taken by the participants: pretest, and posttest, the same questionnaires were applied as the testing tool for both tests (Kıncal, 2013). The independent variable of the study is "gamified environment (ClassCraft)" and the dependent variables are "academic motivation and self-efficacy for English learning" levels of students.

The pretest was conducted a week before the introduction of the gamified environment (ClassCraft), and then the researcher designed a gamified environment. After the students participated in the gamified environment, the posttest was administrated to the experiment group. In addition, the researcher used a questionnaire which was composed of several open-ended questions to determine the effectiveness of the elements of gamification during the implementation. In total, gamification was applied for sixteen weeks.

3.2 Target Population and Participants

3.2.1 Quantitative Study. This research has been conducted on middle school students who are studying at a private school in Istanbul. The students have been studying English for a minimum of 5 years, 10 hours a week on average. During the course of the study, the students have 16 hours of English per week. There are 14 students in the class. This year, the grades of the students do not have any effect on their GPA. Of the participants, 8 (54 %) were male and, 6 (46 %) were female. Participant's ages are ranged 9 to 10. Their first language is Turkish. They have course textbooks and workbooks called Impact 3. The school is a private school and the students have their classes in their own classrooms. The classroom in which gamification was implemented was not specifically designed as a foreign language classroom. However, as a result of the number of the total English hours, the

classroom looks like a language classroom. Detailed information about participants' is presented in Table 2.

Table 2

Participants' descriptive statistics

Female		Male		Total	
n	*%*	*N*	*%*	*N*	*%*
6	42.8	8	57.3	14	100

3.2.2 Qualitative Study. In the current study, 6 students were interviewed. These six students were selected conveniently from those who have participated in gamification implementation. Of the six interviewees, three were male and three were female. During the data analysis process, instead of using the names of students' the researcher named them as "S1, S2, S3… etc." of their names to ensure the confidentiality of the research data.

All of the participants reported that they usually play games. The high proportion of the participants (67%) reported that they play digital games such as Subway Surf and Clash Royale. The other participants (33%) reported that they play box games like Monopoly. One of them noted that he also play traditional games such as Blind Man's Buff and Hide and Seek. In addition, five of the participants don't think that ClassCraft is similar to the games they play. Two of the participants think that ClassCraft is similar to the games they play.

3.3 Procedures

Before the gamification process, students were given the Academic Motivation Scale and Self-Efficacy for English Scale. Students were given 40 minutes to fill in the forms. They were asked not to talk to each other while filling in the forms. It was explained that these forms would not have an effect on their report cards or any grades. They were told that if there were any questions that they did not understand,

they could ask the teacher in person. None of the students asked any questions. Some students were given 5-minutes extra time to finish.

Classcraft was kept open in the background on the computer. A specific topic was not chosen to use Classcraft. The teacher kept using Classcraft together with the coursebook, which aims at developing all four skills in English. Students had topics such as *Amazing Jobs, Secrets of the Dark, What we Wear, Living Together, Mix and Mash, Cool Apps and Gadgets* and *Into the Past*. They also learned about present simple tense, the past simple tense, modals, adjectives, superlatives and present perfect tense. The teacher who is applying Classcraft is referred as 'Gamemaster' in the system. Students were put in 3 teams by the Gamemaster. These teams were created according to the academic and social skills of the students. Teams were decided together with a co-teacher, who is teaching English to the same class for 9 hours a week, and knows the students from the previous year. In each team there is a balance of academic and social ability students.

To introduce ClassCraft to students, the Gamemaster has shown the introduction video on its website. There are three main characters as 'Mage, Warrior, and Healer'. The powers of these characters were explained to the students and the students were asked to decide on their roles (characters) in their groups. In each group, there needs to be a mage, a warrior and a healer. After the students came to an agreement, they were given their codes to create their accounts at home. Students used their email addresses provided by the school to create their account.

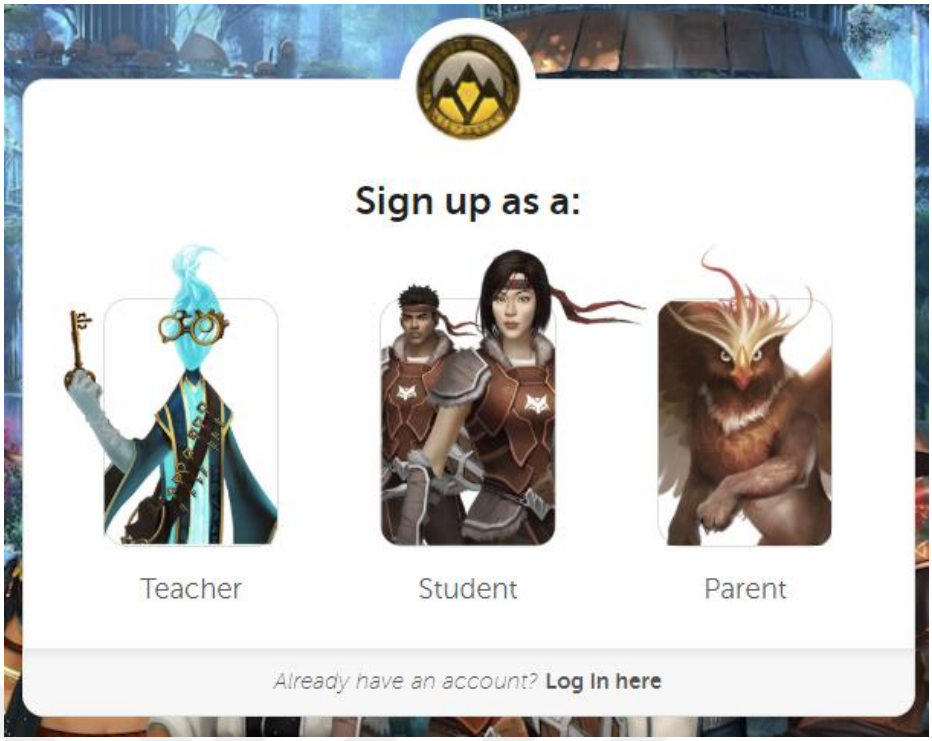

Figure 4. Login screen

Students selected “Student” on their devices and created their free accounts. Students who had difficulty in the process created their accounts together with the teacher.

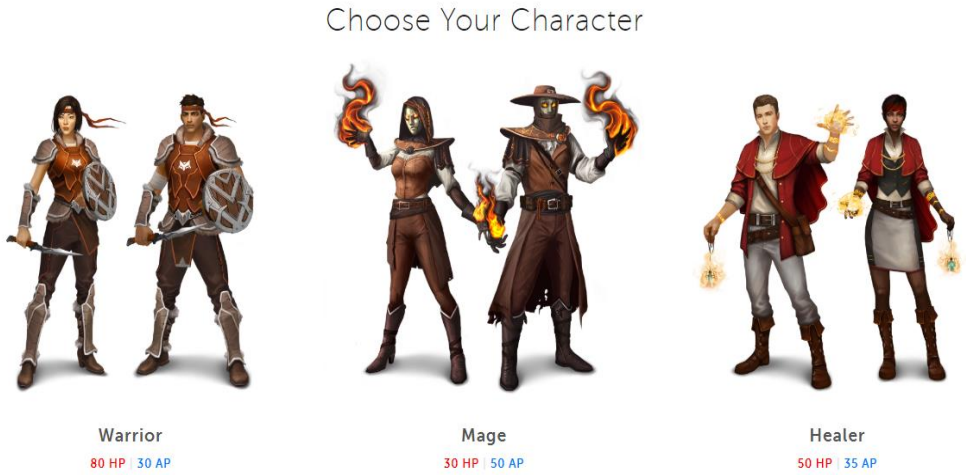

Figure 5. Roles

Students came together to decide on their characters. Each team needs to have one of the characters to be able to survive in the game. They decide on each person's role together as a team depending on the role they need. In the next step, they seleced their appearance and their gender. None of the students had a disagreement on their roles. If a student selects the warrior as his or her character, that student will be able to decrease the damage that the team members receive. A warrior helps the team by decreasing the total amount of damage a member or the whole team gets. While doing this, the warrior gets some of the damage. The next character is a healer. Healers help the teammates with their Health Points (HP). When a team member loses HP, the healers help them gain their lost HP. The last character is the mage. Students need Action Points (AP) to be able to use their powers in the game. A mage replenishes the AP that team members need to use their powers.

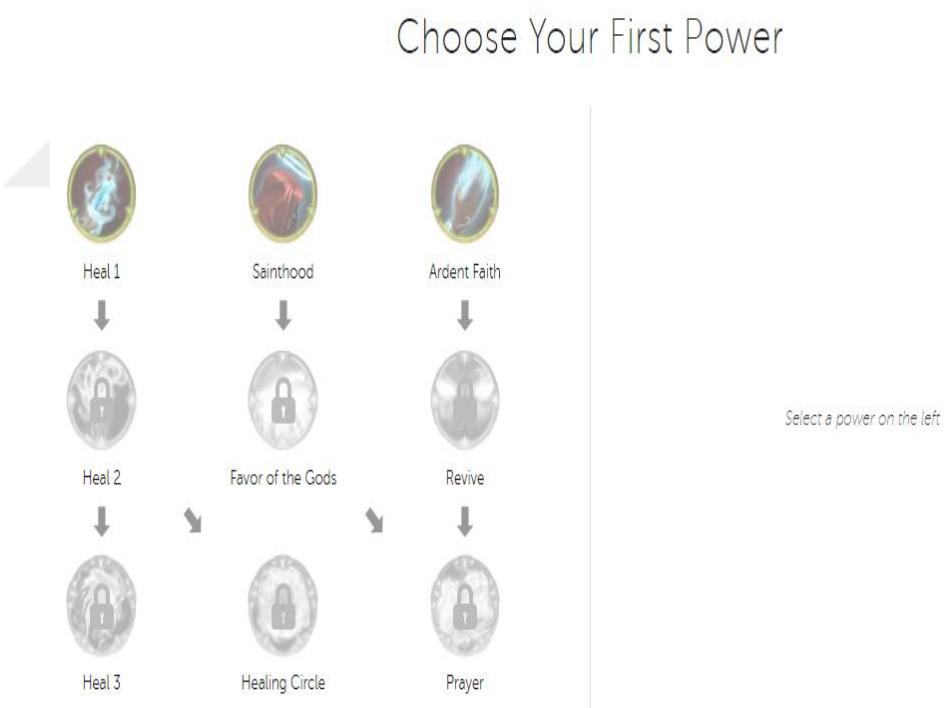

Figure 6. Selecting the first power

Students select their first power and decide on their path in the game. In the future, they are able to change their power. For instance, if a student starts with ‘Heal 1’, they are able to ‘unlearn’ the power and select another power to continue.

After they created their accounts, they were able to follow the system on their devices. They were able to help each other. During the lessons, the Gamemaster logged in the Classcraft website. The website was kept open in the background and used when necessary. Students see the avatars they have selected on the home screen when Gamemaster launches the page.

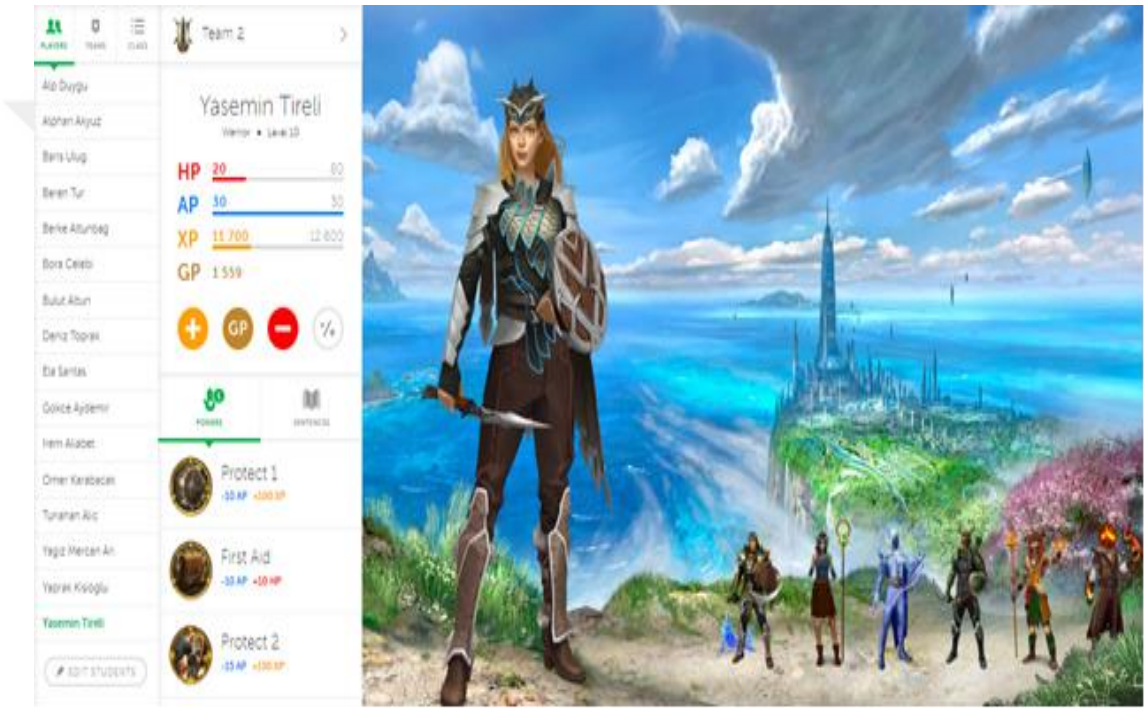

Figure 7: Home screen and avatars

Teams were able to see who needs HP, who has enough AP to use powers, and their XPs in team view section. This screen is shown at the beginning of the lesson. Team members develop a brief strategy and try to help each other in order to be a stronger team. Gamemaster also marks the absent students as absent and those students are not picked by the system on that day. They are not affected by any events.

Figure 8: Team view

3.3.1 Homework Check. While checking homework, the "Random Student Picker" tool was used. Students were given HP (Health Point) when they answered the questions correctly. They didn't lose any HP when they gave a wrong answer in order not to demotivate or discourage students. When a student is picked by the tool, the same name does not come up until everybody is selected. However, if a student hasn't done homework, he loses -7HP. To make it more challenging, students suggested that -7 HP will be taken down each time that student is selected by the system. After this suggestion, each time a student was selected during homework check, that student lost -7HP. Homework was given every day and usually checked the next day or the other day depending on its length.

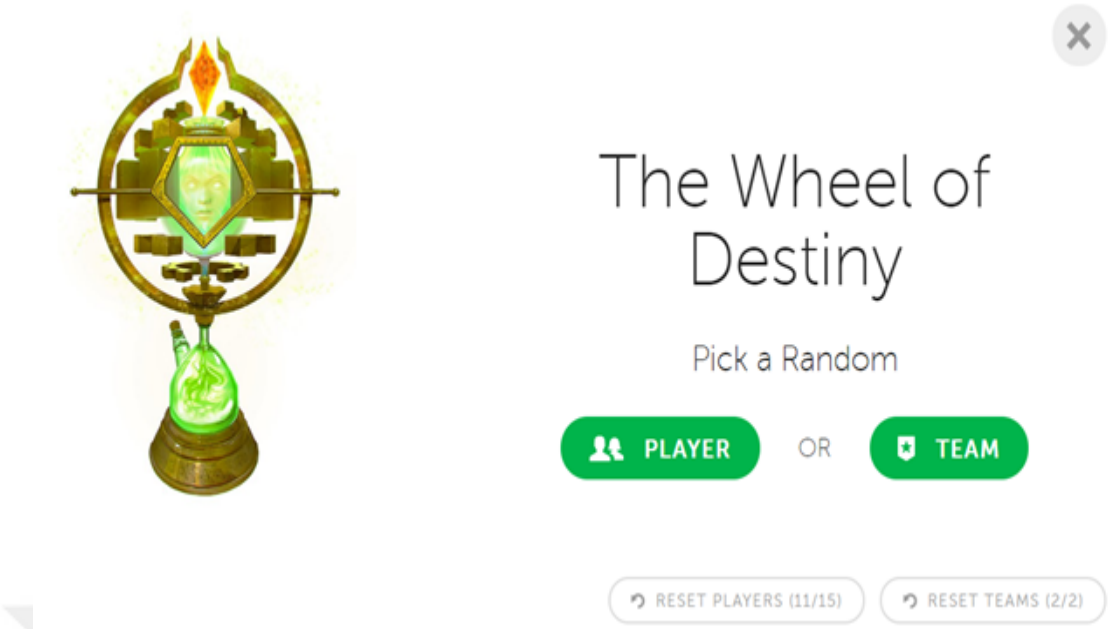

Figure 9. Random student picker

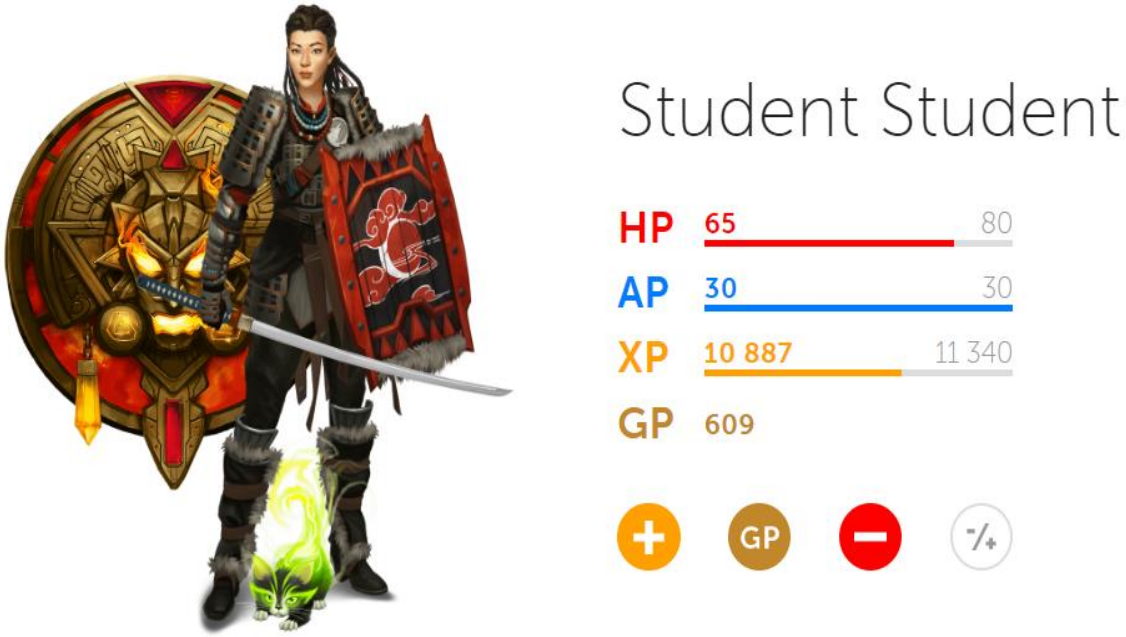

Figure 10: A selected student by "Random Student / Team Picker"

Students who passed the IDP programme (a digital citizenship programme at school) were allowed to use their mobile devices during the lessons. As these

students were able to login to the system and support their team throughout the course at school, students who could not pass the exams of this programme were also allowed to use the PC in the classroom during recess.

3.3.2 Quests. Students were asked to introduce themselves and write about their favourite ice-cream flavour under the thread created by Gamemaster in "Quests" section. The aim was to make students more familiar with each other and the system.

Figure 11: Quests screen

3.3.3 Random Events. Random events are the events that students do not know if there will be a positive, negative or a neutral consequence. Classcraft already offers a number of pre-set random events. At the beginning of the process, after 2 random events have been done, students were asked about their suggestions. They were also added to the system. Random events were done 3 times a week, one on Monday, one on Wednesday and one on Friday. Gold Pieces (GP) were also given to students as results of some random events. Students use GP to change clothes in the game.

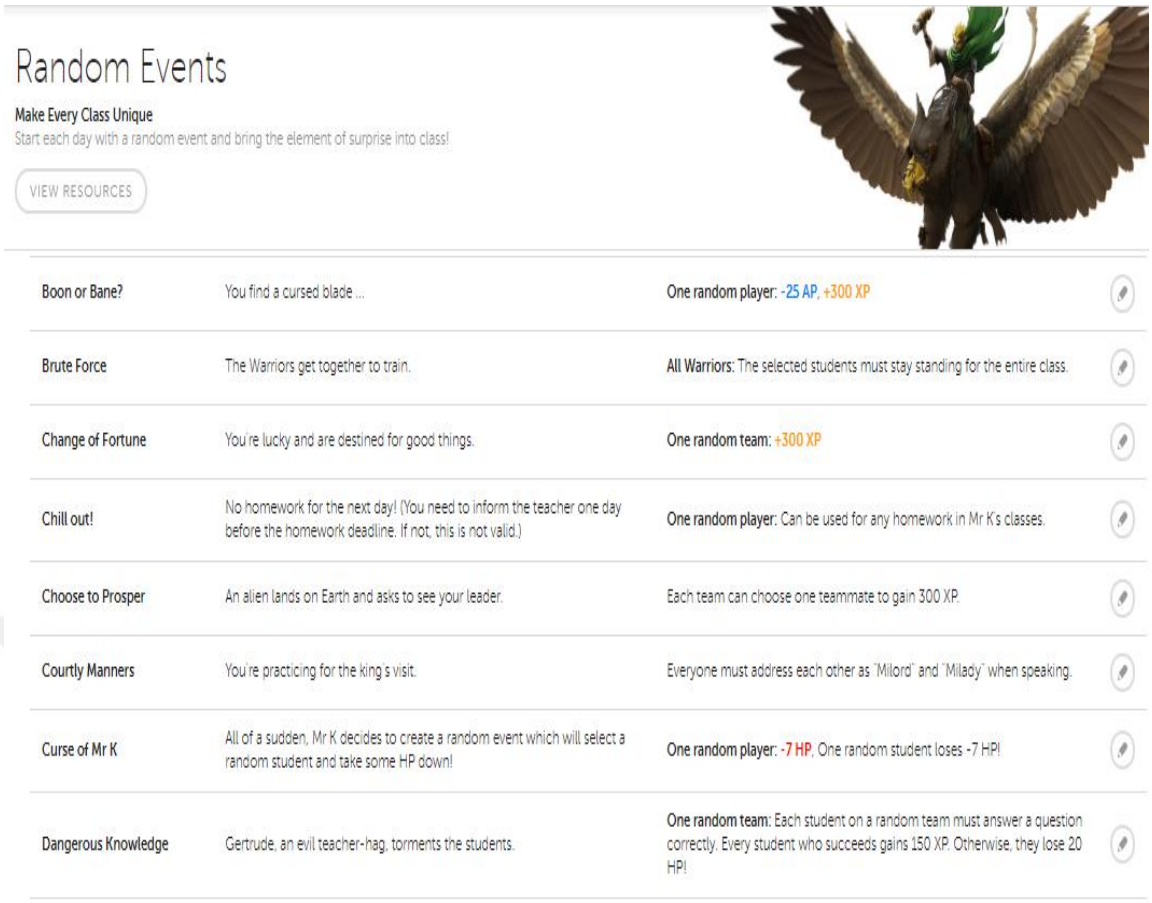

Figure 12. Sample random events

In a thread under Quests section, students were asked to give some ideas about the "Random Events". They were asked to share their ideas with #coolrandomevent hashtag. The aim of asking students for their random event idea was to include them into the process and to make them feel like a part of the system.

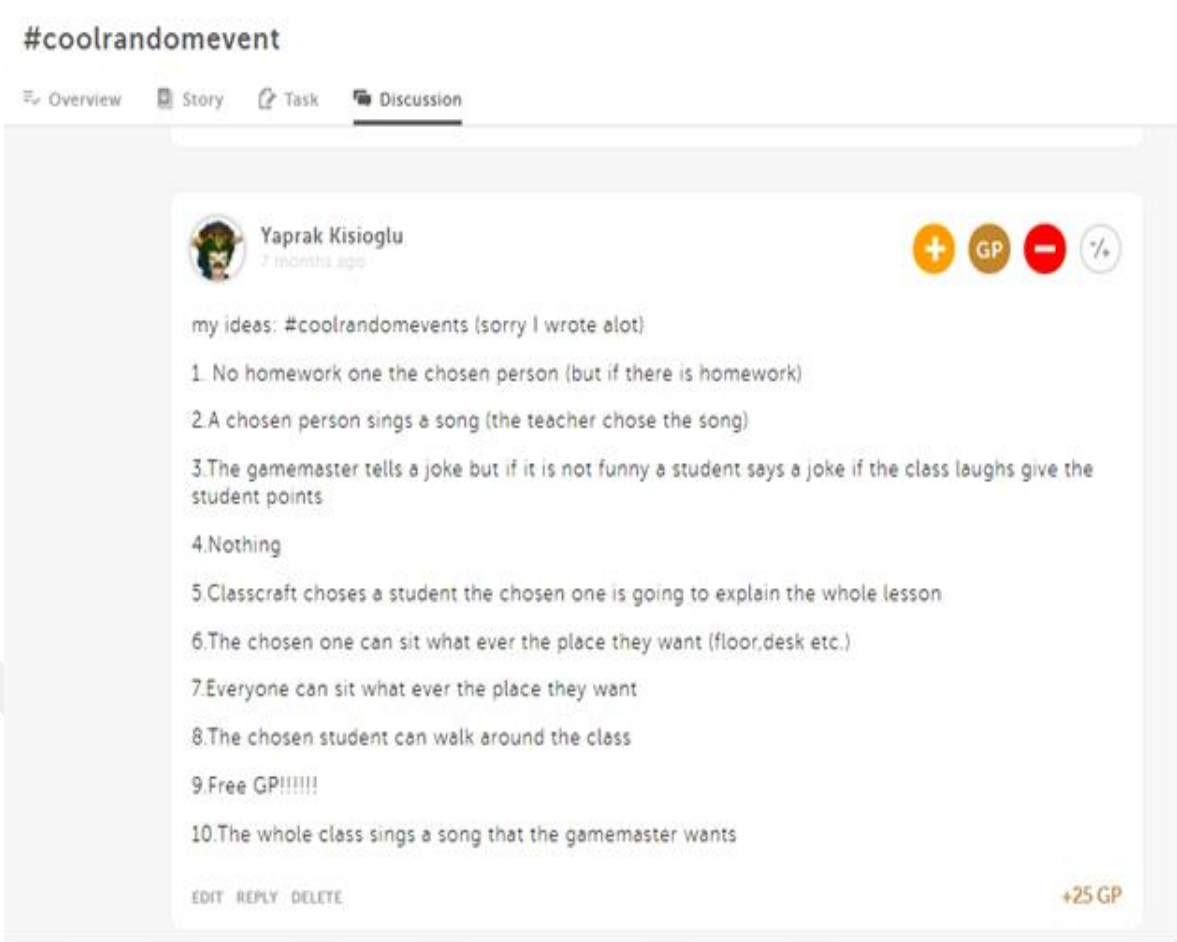

Figure 13: Random event suggestions from students

3.3.4 Using Powers. Students use their powers either for some privileges in class or to help a friend in their team. They need to have Action Points (AP) to use their powers. Each power may require a different AP. Students who are allowed to use mobile devices in class can do it using their mobile devices. Gamemaster also allows students to use the classroom PC during recess. Students can see powers they can use and team members who are in need of help.

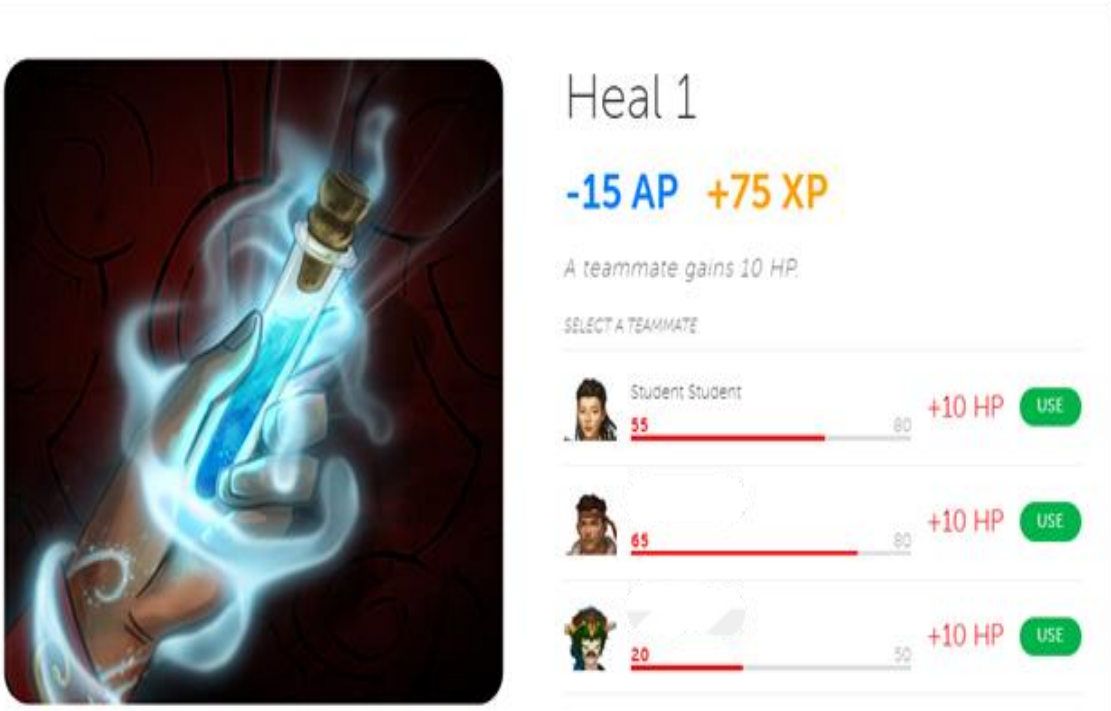

Figure 14: Using power for teammates who need help

This study focuses on three of the basic elements of gamification based on the capabilities of the ClassCraft tool. These are avatar, team work, unexpected/random events. They are introduced on how it is used in the current study.

The first one is the avatar element. As explained above, there are three main characters with different powers in the game. Each character has its own advantages and disadvantages. Students select their avatar, which is also their role during the game. All three characters have different powers in the game.

In addition to their powers, all of the characters are able to customize their appearance. They go to the market and select the outfit they want to wear. However, they need Gold Pieces (GP) to be able to buy the outfit. They get GP from the pets they have, and from some events.

Team work is the second element of gamification. Students need to help each other to be able to survive in the game as a team. If one person “falls in the battle”, which means dying in the game, the other team members are also affected by this

fall. The other members also lose some HP, because one person got damage and fell in the battle, and the team could not save the member.

Unexpectedness is the last gamification element that is being focused in this study. Despite knowing when to get or lose points in the game, the random events are completely random. A random event is an event that the system shows a premade event. This event might be losing or gaining some XP, AP, HP, GP, or even something that is not related to the points in the game. Students sometimes lose some HP, sometimes gain some XP, and sometimes they need to talk like a pirate for the rest of the lesson. There are 20 custom random events which are editable by Gamemaster. In this study, the students also participated in creating the random events.

Detailed information on the gamification process was given below.

Game Rules

880 The amount of XP that students need to level up.

0 – The amount of HP that students regain every day. This number can be changed to make it easier for students.

+4 The amount of AP that students regain every day. They regain this AP so that they do not get stuck in the game. They keep using their powers.

+1 The amount of HP a player has after falling in battle.

+10 The amount of HP a player's teammates lose when he falls in battle. Increasing this amount makes it difficult for the other team members to stay alive if one member falls in the battle.

+5 The amount of XP gained per AP spent using a collaborative power. Gaining XP makes it more charming to use powers.

70 – The percentage grade over which students gain XP. This feature is not used in our application. Students' work was not graded on Classcraft.

5 – The amount of XP gained for each percentage point over the passing grade. This feature is not used in our application. Students' work was not graded on Classcraft.

There is a Random Event each Monday, Wednesday and Friday.

Behaviors

XP (Experience Points)

+60 – Correct answer for a question.

+75 – Helping another student with their work

+100 – Being positive and hard-working in class

+20 – On time and ready for class

+30 – Taking on extra tasks after completing work

HP (Health Points)

-10 – Being rude to anybody

-15 – Speaking Turkish

-10 – Off Task

-5 – Disorganization

-7 – No Homework

-7 – Bathroom

-5 – What's the page? / I finished!

GP (Gold Points)

+10 – Handing in an assignment a day early

+50 – Helping another student catch up from being absent

+50 For the birthday student and +25 for the teammates.

Sentences (If they fall)

-Recite the alphabet backwards

-Sing a song chosen by a random student in front of your class

-Bring a treat for everyone in class

-Extra homework assignment!

-Copy out a text

-Be on duty for your Gamemaster for 2 days

-Hand in your next assignment a day early

Characters

Mage (restores lost HP)

Max HP=30

Max AP=50

Mana Transfer: All team members, except mages, gain 7 AP *(35 AP)*

Teleport: The mage can trade places with any other classmate *(5 AP)*

Invisibility: The mage can go to the bathroom during the lesson *(10 AP)*

Mana Shield: The mage prevents the loss of HP to themselves *(3 AP per 1 HP)*

Cheat Death: A fallen teammate (other than the mage) can reroll the cursed die but must accept the new outcome *(15 AP)*

Time Wrap: The mage gains an extra day to submit an assignment *(20 AP)*

Fountain of AP: A teammate, who isn't a mage, replenishes all of their AP *(40 AP)*

Warrior (prevents HP loss)

Max HP=80

Max AP=30

Protect 1: The warrior can take up to 10 damages instead of their teammate, receiving only 80% of the initial damage *(10 AP)*

First Aid: The warrior gains 1 HP for each level they have, but always gains at least 5 HP *(10 AP)*

Hunting: The warrior can eat in class *(7 AP)*

Protect 2: The warrior can take up to 20 damages instead of their teammate receiving only 65% of the initial damage *(15 AP)*

Ambush: The warrior can hand in an assignment one day later *(20 AP)*

Counter Attack: The warrior gets a hint on an exam question *(20 AP)*

Protect 3: The warrior can take up to 30 damages instead of their teammate, receiving only 50% of the initial damage *(20 AP)*

Front Assault: All team members can hand in an assignment one day later *(30 AP)*

Secret Weapon: During a quiz, the warrior can use a cheat sheet provided by the Gamemaster *(25 AP)*

Healer (restores lost HP)

Max HP=50

Max AP=35

Heal 1: A teammate gains 10 HP *(15 AP)*

Sainthood: The healer can eat in class *(7 AP)*

Ardent Faith: During a quiz, the healer can ask the Gamemaster if their answer is correct or incorrect *(10 AP)*

Heal 2: A teammate gains 20 HP *(20 AP)*

Favor of the Gods: The healer can skip a page of the homework *(20 AP)*

Revive: When a teammate (not including the healer) falls to 0 HP, they avoid all penalties and come back to life with 1 HP *(25 AP)*

Heal 3: A teammate gains 30 HP *(20 AP)*

Healing Circle: All team members, other than the healers, gain 15 HP *(30 AP)*

3.3.1 Data Collection Instruments. In the current study, "The Self-Efficacy Scale for English" was used to determine the English self-efficacy levels of participants and "The Academic Motivation Scale" was used to determine level of academic motivation participating in the gamified environment (ClassCraft). A "Demographic Information Form" was used to obtain information about the personal characteristics of the participants. In addition, an open-ended questionnaire was applied to collect qualitative data.

3.3.1.1 The Self-Efficacy Scale for English. English self-efficacy levels of participants were measured with the Self-Efficacy Scale for English (SESFE; Yanar & Bümen, 2012). The scale was developed to measure students' beliefs of self-efficacy in English. Although the scale was developed for and validated on high school students, it has been used for different sample groups such as middle school students (eg. Uslu, 2016), university students (eg. Mede& Karaırmak, 2017) and prospective teachers (eg. Memduhoğlu, 2015 & Çelik, 2015) in different studies. The 34-item scale consists of four subscales which are labeled as reading (eg. I can find the theme or the main idea of the English text I read.), writing (eg. When writing an English text, I can express my thoughts completely and clearly.) listening (eg. When I listen to an English conversation, I can guess the meaning of the words that I do not know.), and speaking (I can respond to questions asked in English.). The SESFE is a 5-point Likert-type scale (1 = Strongly disagree, 5 = Strongly agree). No items are reverse coded Scores range from 34 to 170 with higher scores pointing to higher levels of self-efficacy beliefs in English. The Cronbach alpha internal consistency of the SESFE was found for reading as .92, for writing .88, for listening .93, for speaking .92 and for SESFE overall .97. The results of confirmatory factor analysis which was conducted with 296 students supported the model fit of a four factor with the values of RMSEA=0.044, SRMR=0.046, NFI=0.98, NNFI =0.99, PNFI=0.89,CFI= 0.99, IFI=0.99 and RFI = 0.98. Additionally, the 34 items in SESFE loaded between 0.42 and 0.69.

3.3.1.2 The Academic Motivation Scale. Academic levels of participants were measured with the Academic Motivation Scale (AMS; Bozanoğlu, 2004). Although the scale was developed for and validated on high school students, it has been used for different sample groups such as elementary school students (eg. Kaleli, 2016), middle school students (eg. Öztürk&Kırbaç, 2016) graduate students (eg. Saracaloğlu, 2009) and prospective teachers (eg. Terzi, Ünal & Gürbüz, 2012) in different studies. The AMS which consists of 20 items was developed in order to assess the individual differences in academic motivation levels among students. Results of exploratory and confirmatory factor analyses indicated that the AMS consists of 3 subscales and these three subscales explains 42,20% of total variance.

The first subscale which is named as "Self-exceeding" contains 7 items (eg. Everything I have learnt arouses curiosity about learning more), the second subscale which is named as "Using knowledge" contains 6 items (eg. I like to help others with my learning.), and the third subscale which is named as "Exploration" contains 7 items (eg. I study a lot to learn something although it will not be graded.). The AMS contains five items in a Likert type response format (1 = Not suitable at all, 5 = Perfectly suitable) and one item (item 4) is reverse coded. The scores can be obtained from the scale ranges between 20 and 100, with higher scores being indicative of higher academic motivation. The Cronbach alpha internal consistency of the AMS was found between .77 and .85. In addition, test-re-test correlation was found .85.

3.3.1.3 Demographic Information Form. A demographic information form was used to collect data on demographic variables including age, gender and age.

3.3.1.4 Open-Ended Questionnaire. In the current study a semi-structured interview questionnaire was applied to collect qualitative data. The semi-structured questionnaire was prepared by the researcher considering expert opinions and the views of the advisor (eg. Do you play games?, What kind of games do you play?, Do you think that using ClassCraft in the class is fun?; Which characteristics of your Avatar did you like most?). The semi-structured interview questionnaire was adopted to support the data collected through the questionnaire in order to explore the participants' perspectives on the gamified environment. As expressed by McDonough and McDonough (2006), semi-structured interviews accommodate a greater flexibility in relation to the organization of questions and allow for substantial follow-up responses, despite having a structured framework. Accordingly, different sets of questions were asked to students throughout the interviews. In order to make a comparison with the data collected by the students from the quantitative method and to provide the opportunity to evaluate together, the questions in the interview form were prepared in parallel with the content of the gamification application.

3.3.1.5 Preliminary Analysis. As a primary analysis of the data obtained pre-test and post-test measures, the analysis was applied to examine whether the data had

a parametric value or not. In order to use parametric tests, the variances must be homogeneous and the data must exhibit a normal distribution (Büyüköztürk, 2012). Therefore, data was tested for normality and homogeneity of variance. The results of the Shapiro-Wilk test which as applied to examine whether the data distributed normally or not, indicated that the data were normal (*p= .083 and .129 respectively*). Therefore, parametric methods have been used in the analysis of data. The findings are shown in Table 3 and 4.

Table 3

The results of Shapiro-Wilk test for measures of SESFE

Measurement	Group	Shapiro-Wilk Statistic	df	*p*
Pretest SESFE	Experimental	.891	14	.083
Posttest SESFE	Experimental	.904	14	.129

p>.05

Table 4

The results of Shapiro-Wilk test for measures of AMS

Measurement	Group	Shapiro-Wilk Statistic	df	*p*
Pretest AMS	Experimental	.930	14	.300
Posttest AMS	Experimental	.951	14	.584

p>.05

As can be seen in Table 3 and 4, the result of the Shapiro-Wilk test to investigate whether the measurement results related to the dependent variables exhibited normal distribution was found to be consistent with the normal distribution curve (*p*> .05). Therefore, parametric methods (Paired sample t-test) have been used rather than nonparametric methods (Mann Whitney U test) in the analysis of data.

3.3.3 Data Collection Procedures. The questionnaire packet including the Self-Efficacy Scale for English, the Academic Motivation Scale and the Demographic Information Form was administered to participants in experiment groups in one session two weeks before the introduction of the gamified environment (ClassCraft). All participants were informed about the objectives of the study by the researcher and they completed the questionnaire packet in their regular class hours. The instruction about how to respond to the measurements was given above the scale. It took 40 minutes to complete the scale. The AMS, SESFE and demographic information form was given in Turkish.

Students participated in the gamified environment. Two weeks after gamification implementation was finished, the same measurements were administered as a posttest. All the necessary permits have been obtained via e-mail from researchers who developed the measurement tools. All the measurements were administered by the researcher. Participants filled out the data set voluntarily.

Additionally, the semi-structured interview questionnaire to determine effectiveness of the elements of gamification was applied by the researcher during the implementation. The questions and topics of the semi-structured interview are prepared in advance with the main lines, but the researcher is able to direct the interview and ask new questions according to the answers they received during the interview (Berg, 1998). Interviews were conducted with 6 students who students of the school where the study was conducted and who participated in the practice of gamification. During the interviews, audio was recorded with permission from the participants.

Each of the six participants were interviewed in the English laboratory of the school. There was nobody in the laboratory during the interviews. The length of interviews ranged from thirty-five minutes to fifty-five minutes. The interviews were semi-structured and a general guideline was followed. The same questions were asked to each interviewee in order to provide parallelism across interviews. Although there was an ordered list of questions, some probing questions were added according to the flow of interviews. These extra questions caused interviewees to think on their

answers more and extended their answers. Each interview began with general questions like the games that the participants are playing in their daily lives. Then, as the dialogue continued between the researcher and the interviewees, main questions were asked. All interviews were transcribed and codes and themes were created after content analysis.

3.3.4 Data Analysis Procedures. In qualitative data analysis descriptive statistics and content analysis were performed. The researcher analyzed six written interview transcripts. First, the open coding process was performed and then core themes were determined. The researcher analyzed transcribed texts line by line, and coded prominent concepts and themes by underlining the text and taking notes.

The information obtained in the descriptive analysis technique and content analysis is summarized and interpreted according to the themes. There is often a direct citation in order to reflect the views obtained in a striking way. In this analysis, it is aimed to present the findings to the reader in a regulated and interpreted way (Yıldırım & Şimşek, 2005). In this respect, the data obtained from the interviews are classified according to the subjects. By giving place to the different and striking ideas of the participants, the views about the topic were tried to put forward.

In the quantitative data analysis obtained from the participants were carried out via IBM SPSS Statistics 21. In order to explore the general characteristics of the sample descriptive statistics were applied. Then the Shapiro-Wilk test was used to assess the normal distribution of the data. The Shapiro-Wilk test can be used if the sample size is smaller than 35 (Razali & Wah, 2011). According to the results of the Shapiro-Wilk test a paired samples t-test was used which was aimed to evaluate the mean difference between the pretest and posttest scores, displaying normal distribution. In this study a T-test was used to compare differences between two independent groups rather than the Mann Whitney U test because the data distributed normally.

3.3.5 Reliability and Validity

3.3.5.1. Qualitative Data. Due to the fact that the qualitative research is inherently subjective and includes interpretation it is difficult to mention traditional concepts of validity and reliability in qualitative studies (Armstrong, Gosling, Weinman, & Martaeu, 1997). However the present study has performed some strategies to ensure trustworthiness. In this study, the results of the research were reported impartially and the internal validity (credibility) of the research was tried to be increased by taking participants' confirmation of the results obtained. In addition, the results of the research have been expressed and categorized clearly and it was aimed that readers would understand the research results in the easiest and most accurate way.

Moreover, to augment reliability and validity in the research process, interpretations and findings, verification strategies as recommended by Morse, Barrett, Mayan, Olsom and Spiers (2002) are incorporated in this study. Thinking theoretically throughout the whole research process, making sure that research methodoliges are consistent and logical, ensuring sampling is sufficient enough to represent the whole population (sampling sufficiency). Congruence between the research questions and the methods used provided the study with methodological coherence. A logical relationship between sampling, data collection and analysis is ensured as well. Enough participants were available and were motivated to paritcipate in the research process.

It can increase the credibility of the research to investigate both the resarch process, findings and conclusions of the study by the experts who are knowledgeable about the research topic and qualitative research methods (Yıldırım & Şimşek, 2006). The researcher has been in contact with the thesis supervisor, experienced teachers in the English language field and relevant specialist academicians throughout the process and has taken their opinions and recommendations into consideration to carry out the research process.

In addition, to ensure reliability in qualitative research consistency between independent observers and internal consistency are required. In the current study, two independent researchers analyzed the data and interrelated reliability was conducted by reading and re-reading the data by different observers who were experienced English teachers and certificated gamification experts.

3.3.5.2 Quantitative Data. The Cronbach's alfa coefficients of the scales were presented in data collection tools section. In the current study, the Cronbach alpha internal consistency of the SESFE was found for reading .91, for writing .84, for listening .89, for speaking .89 and for SESFE overall .96. In addition, in the current study, Cronbach's alpha estimates for the subscales of AMS ranged from .76 (using knowledge subscale) to .86 (exploration subscale), with total estimates at .77.

3.3.5 Limitations. The current study has several limitations that has to be taken into consideration. Firstly, the number of the participants was small as all participants are enrolled in a well-known private primary school in Istanbul limits the generalizability of the findings. Conducting the study with different populations may be useful to provide more reliable results. Second, the data addressed in the current study are limited to self-reported data. Third, the current study took a term in total. Extending the gamification implementation over a longer period of time may provide to more in-depth findings. Lastly, Classcraft was used as a gamification tool in this study. Other sites or applicants may be used in further studies.

Chapter IV

Findings

This section deals with the findings of the statistical analysis of the data obtained from the study. The results and findings of the analyses are presented in the light of the research questions and objectives.

4.1 Quantitative Study

4.1.1 Descriptive Statistics. General characteristics of the sample with respect to variables of the study are explored by means of descriptive statistics. The mean self-efficacy for English pretest score of participants was 150.8 (*SD*=4.57) and posttest score was 153.6 (*SD*=3.68). The mean academic motivation pretest scores of participants was 77.4 (*SD*=8.15) and posttest score was 80.4 (*SD*=5.57). The middle range can be calculated by subtracting a standard deviation value from the midpoint of the score that can be taken from the scale and adding a standard deviation value to the midpoint. While self-efficacy and academic motivation levels of English were calculated, students' scores were determined as low, medium and high considering the mean and standard deviation of the scores they received for 'Self Efficacy Scale for English' and 'Academic Motivation Scale'. Students 'Self Efficacy Scale for English' pre-test averages 150.8, standard deviation 17.12; the post-test score average is 153.6, and the standard deviation is 13.78. Accordingly, for the pre-test, scores below 134 are low, scores between 134 and 168 are medium, and scores above 168 are considered as high; for the post-test, scores below 140 are low, scores between 140 and 167 are medium, and scores above 167 are considered as high. Students 'Academic Motivation Scale' pre-test averages 77.4, standard deviation 8.15; the post-test score averages 80.4 and the standard deviation 5.57. Accordingly, for the pre-test, scores below 69 are low, scores between 69 and 86 are medium, and scores above 86 are considered as high; for the post-test, scores below 75 are low, scores between 75 and 86 are medium, and scores above 86 are considered as high.

The prestest and posttest self efficacy for English scores of participants and differences between two measures are presented in Table 5.

Table 5

The prestest and posttest self efficacy for English scores

Number of Student	Test Scores		Levels		Difference
	Pre-Test	Post-Test	Pre-Test	Post-Test	
1	147	153	Medium	Medium	6
2	151	156	Medium	Medium	5
3	139	146	Medium	Medium	7
4	132	141	Low	Medium	9
5	141	141	Medium	Medium	0
6	166	168	Medium	High	2
7	166	167	Medium	Medium	1
8	164	165	Medium	Medium	1
9	169	169	High	High	0
10	112	122	Low	Low	10
11	158	151	Medium	Medium	-7
12	164	164	Medium	Medium	0
13	167	164	Medium	Medium	-3
14	135	143	Medium	Medium	8

As it can bee seen in Table 5, self efficacy for English scores of nine participants have raised after gamification implementation. Scores of three participants did not change and scores of two participants have decreased. In addition, after the gamification implementation, a student's self efficacy for English level has changed from low to medium, another student's score has changed from medium to high. Self-Efficacy for English level of 12 students did not change.

The prestest and posttest academic motivation scores of participants and differences between two measures are presented in Table 6.

Table 6

The prestest and posttest scores of academic motivation

Number of Student	Test Scores		Levels		Difference
	Pre-Test	Post-Test	Pre-Test	Post-Test	
1	75	80	Medium	Medium	5
2	77	84	Medium	Medium	7
3	67	74	Low	Low	7
4	66	72	Low	Low	6
5	76	79	Medium	Medium	3
6	73	77	Medium	Medium	4
7	82	87	Medium	High	5
8	88	92	High	High	4
9	84	87	Medium	High	3
10	74	79	Medium	Medium	5
11	86	81	Medium	Medium	-5
12	84	80	Medium	Medium	-4
13	88	80	High	Medium	-8
14	64	74	Low	Low	10

As it can be seen in Table 6, academic motivation scores of eleven participants have risen after gamification implementation. Scores of three participants' have decreased. In addition, the academic motivation level of the two students after the gamification implementation changed from medium to high. A student's level has fallen from high to medium. The academic motivation levels of 11 students did not change.

The frequencies and distributions of answers given by the participants to the pre and post tests of SESFE and AMS were analyzed. In the self-efficacy for English Scale it was seen that students have mostly responded to the items as "strongly agree" and "agree" and in Academic Motivation Scale students have mostly responded to items as "neither disagree or agree", "agree" and "strongly agree". As a result of the analysis made, it has been seen that there are significant changes between students' responses to the pre-test and the post-test in some questions in both SESFE and AMS. The frequencies of pretest and posttest SESFE and AMS responses were presented in the Appendice E and F parts.

4.1.2 Findings for Research Question 1. In pursuance of finding out whether any significant differences exist between the self-efficacy for English levels of the participants before and after the gamification implementation, the results obtained from the SESFE were examined. The pre- and post-test self-efficacy for English test results of the participants were compared by using paired sample t-test analysis.

The pre- and post test self-efficacy for English results of the participants are given in Table 7.

Table 7

Paired sample t-test analysis for self-efficacy for English pre-test and post-test scores within experimental group

Variable	Measurement	N	Mean	SD	df	T	p
Self-Efficacy for English	Pretest	14	150.79	4.57	13	-2.133	.053
	Posttest	14	153.77	3.68			

The mean self-efficacy for English pretest score of participants was lower than (*M*= 150.79) the mean posttest self-efficacy for English score (*M*=153.77). Results of paired sample t-test analysis indicated that the difference is not statistically significant; t(13)=-2.133, p=0.53. In other words, the self-efficacy for English level of the participants didn't increase after the gamification implementation.

4.1.2.1 Post-Hoc Analysis for Research Question 1 In pursuance of finding out whether any significant differences exist between the reading, writing, speaking and listening which are the subscales of self-efficacy for English levels of participants before and after the gamification implementation, the results obtained from the subscales of SESFE were examined. The pre- and post-test reading, writing, speaking and listening test results of the participants were compared by using paired sample t-test analysis.

The pre- and post test reading, writing, speaking and listening test of the participants are given in Table 8.

Table 8

Paired sample t-test analysis for subscales of self-efficacy for English pre-test and post-test scores within experimental group

Variable	Measurement	N	Mean	SD	df	T	p
Reading	Pretest	14	34.79	5.07	13	-1.587	.136
	Posttest	14	35.50	4.05			
Writing	Pretest	14	43.50	5.03	13	-1.632	.127
	Posttest	14	44.21	4.15			
Listening	Pretest	14	45.14	5.05	13	-1.863	.085
	Posttest	14	45.93	4.06			
Speaking	Pretest	14	27.36	3.27	13	-1.847	.088
	Posttest	14	27.93	2.75			

The mean reading pretest score of the participants was lower than (*M*=34.79) the mean posttest reading score (*M*=35.50). Results of paired sample t-test analysis indicated that the difference is not statistically significant; t(13)= -1.587, *p* =.135. The mean writing pretest score of participants was lower than (*M*=43.50) the mean posttest writing score (*M*=44.21). Results of paired sample t-test analysis indicated that the difference is not statistically significant; t(13) = -1.632, *p* = .127. The mean listening pretest score of participants was lower than (T=45.14) the mean posttest listening score (*M*=45.93). Results of paired sample t-test analysis indicated that the difference is not statistically significant; t(13)= -1.863, *p* = .85. The mean speaking pretest score of participants was lower than (*M*=27.36) the mean posttest speaking score (*M*=27.93). Results of paired sample t-test analysis indicated that the difference is not statistically significant; t(13)= -1.847, *p* = .88. In other words reading, writing listening, and speaking levels of the participants didn't increase after the gamification implementation.

4.1.3 Findings for Research Question 2. The results obtained from the Academic Motivation Scale were used to find out whether any significant differences existed between the academic motivation levels of the participants before and after the gamification implementation. The pre- and post Academic Motivation Scale test results of the participants were compared by using a paired sample t-test method.

The pre- and post academic motivation test results of the participants are illustrated in Table 9.

Table 9

Paired sample t-test analysis for academic motivation pre-test and post-test scores within an experimental group

Variable	Measurement	N	Mean	SD	df	t	p
Academic Motivation	Pretest	14	77.43	8.15	13	-2.201	.046
	Posttest	14	80.43	5.57			

Table 9 indicates the t-test results based on the differences between the mean pretest and post test academic motivation scores. The mean total academic motivation pretest score of participants was lower than (M=24.29) the mean posttest academic motivation score (M=25.79). Results showed that there is a significant difference between the mean values of the pre-test and the post-test; t(13) = -2.660, p =.046). Thus, it can be said that, gamification implementation applied to the participants was effective in raising academic motivation levels.

4.1.3.1 Post-Hoc Analysis for Research Question 2 In pursuance of finding out whether any significant differences exist between the explore, using knowledge and self-exceeding subscales of academic motivation of participants before and after gamification implementation, the results obtained from the subscales of AMS were examined. The pre- and post-test explore, using knowledge and self-exceeding test results of the participants were compared by using paired sample t-test analysis.

The pre- and post test results of the explore, using knowledge and self-exceeding test of the participants are given in Table 10.

Table 10

Paired sample t-test analysis for subscales of academic motivation pre-test and post-test scores within experimental group

Variable	Measurement	N	Mean	SD	df	t	p
Using Knowledge	Pretest	14	24.29	3.60	13	-2.660	.019
	Posttest	14	25.79	2.69			
Self-Exceeding	Pretest	14	28.00	4.35	13	-1.333	.205
	Posttest	14	28.58	3.79			
Explore	Pretest	14	25.14	2.50	13	-1.410	.182
	Posttest	14	26.07	1.97			

Table 10 indicates the t-test results based on the differences between the mean pretest and post test academic motivation scores. The mean explore which is the first subscale of the academic motivation pretest score of participants was lower than (*M*=25.14) the mean posttest explore score (*M*=26.07). Results showed that there isn't a significant difference between the mean values of the pre-test and the post-test; t(13)= -1.140, *p*=.182). The mean using knowledge which is the second subscale of academic motivation pretest score of participants was lower than (*M*=24.29) the mean posttest using knowledge score (*M*=25.79). Results showed that there is a significant difference between the mean values of the pre-test and the post-test; t(13)= -2.660, *p* =.019). The mean self-exceeding which is the third subscale of the academic motivation pretest score of participants was lower than (*M*=28.00) the mean posttest self-exceeding score (*M*=28.57). Results showed that there isn't a significant difference between the mean values of the pre-test and the post-test; t(13)= -1.333, *p* =205).

4.2 Qualitative Study

4.2.1 Findings for Reserach Question 3. The data obtained as a result of the semi-structured interviews of the students were evaluated by analyzing the content. During the content analysis process, the researcher analyzed transcribed texts line by line, and coded prominent concepts and themes using the techniques of underlining and taking notes mentioned by Cranton and Carusetta (2004). Afterwards, similarities and differences among all codes were examined to categorize them.

The data obtained as a result of the semi-structured interviews aimed at gaining students' views on gamification practice were presented directly by quoting the oral views of some of the students in the study group. The research cites are coded according to the first letters of the participants' names. In the research, 5 categories were defined as "interest and motivation, responsibility, cooperation, self-efficacy and satisfaction". In this section, the categories emerging from the research and the student views of these categories are presented.

4.2.1.1 Interest and Motivation. The students who participated in gamification application indicate that the application has a positive effect on interest and academic motivation towards the English course. Students express the influence of the practice on the subjects and motivation towards the lesson as follows**;**

> Classcraft provided more love for the lesson. I want to come to classes more because they are more fun. (S1)

Another student says that interest in and motivation regarding the course is increasing due to the fun and competitive nature of the practice;

> I am more eagerly waiting for the lesson because I am happy to get more points. I get more eager as I get more points. The lessons are more fun now and it's fun to team up with my friends. (S2).

Some students emphasize that they were already interested and motivated and that their interests and motivation have increased due to the gamification application.

Students emphasize that the practice increases motivation by making the lesson more enjoyable;

> I will love lessons even if we don't use Classcraft. Classcraft does not make me any more impatient in the class. But because of Classcraft, I want to participate more in class. And it is fun to use it in class (S3).

Students also indicate that the components of the application help students become more successful and enthusiastic, especially when they are challenged by tasks such as homework. This shows that the application of ClassCraft affects academic motivation positively, similar to the data obtained from the qualitative findings of the research.

> I'm doing more homework compared to the past. I earn XP by doing homework and answering questions (S1).

The application has a positive effect on interest and motivation of students.

4.2.1.2 Responsibility. Students who participate in the gamification practice indicate that the practice contributes to more effort and responsibility. The students express their views on this subject as follows;

> Yes, I tried a lot. I tried to get more points by following the lesson better and answering the questions. I completed my homework more carefully. I tried not to make mistakes (S3).

Students indicate that they are willing to take responsibility and to show the necessary effort to be successful in the gamification practice.

> I am trying to earn more GP to change my appearance. (S4)

The students who participated in the application gave positive feedback about taking responsibility and making effort through the structure of the implementation and the competitive environment that it provides.

4.2.1.3 Collaboration. The students who participated in the gamification application found that it had a positive effect on their cooperation and cooperative behaviors due to their playing as a team. One of the most important components of

the social constructivist learning environment is the cooperation of learners. The influence on cooperation and co-operation skills of the practice are recognised as follows;

> We supported each other and saved each other. It wasn't stressful, it was the opposite; it was fun and exciting… We always supported each other. I think everyone did their best. For example, we healed our friends immediately (S3).

Students appear to behave in a positive way and behave in a better way. A student says:

> I was better on the team. I think we are a good team. Because we help each other. We heal each other which means we protect each other. (S4)

The teaming element of gamification application helps students to support each other and improve their performance.

> I felt more secure. From time to time I took responsibility for my friends (S5).

4.2.1.4 Self-Efficacy. The students who participated in the gamification practice say that the characters they have are positively influencing their English learning and their self-efficacy. Self-efficacy is defined as the belief that an individual organizes the necessary activity to demonstrate a certain performance and has the capacity to successfully perform it. Individuals with high self-efficacy tend to try to cope with the situation rather than seeing it as a threat to themselves (Bandura, 1994). Students express the influence of XP earning, an important component of the practice, has a positive effect on their level of self-efficacy and English learning as follows;

> I am good at Classcraft... Hmm.. I find myself good at helping … Also I feel more successful when I earn XP. Because I spare more time for my homework at home. I become more successful in English lessons with the XPs I earn. Because I achieve something when I earn XP. Earning XP requires success. To be successful, you need to study… (S5)

One of the most important sources of self-efficacy is the positive or negative experiences had by the individual. Classcraft application affects students' self-

efficacy level by contributing to their positive experiences with its content. Examples of students' expressions are;

> Earning XPs made me feel successful. Also it increased my motivation. This way I thought I could be more successful. It is a sign of success. I was successful when I followed the lesson properly and I earned lots of XPs… Yes, I tried to earn more XPs to level up. I tried to acquire new powers by levelling up (S2).

Students indicate that they tried to answer more questions in order to earn XP and tried harder to answer questions. A student says this about this subject;

> Because while earning XPs, I answer questions.
>
> I tried harder. Because when a human being experiences something good, he or she wants to do it again (S3).

4.2.1.5 Multi-Functional Usage. Students attending the gamification application express that they are happy with this experience, it is useful and more effective for them, and indicate that the application can be applied in the other courses as well. Some student opinions are given below;

> I would like to use Classcraft in all subjects except music. For example, in Science, we have lots of project work. We help each other and we get lots of homework. (S3)

Gamification practice is different than traditional lecture methods. It affects the interest and participation of students who are growing up in the digital era and with technology in a positive way. A student says;

> The lessons are more fun. I get more excited. The other subjects are a bit boring for me. We could use it in Maths. I want Maths to be more fun because I get bored. (S5)

Similarly, another student refers to the positive effect of gamification on their attitudes towards the class;

> Because everybody wants to earn XP. So, people want to do better. I would like to have it in Science because we do lots of homework there. I want to earn XP, but we don't have Classcraft in Science. (S1)

Students say that they want to use Classcraft in the forthcoming years.

I want to use it next year. I don’t want to change anything (S6).

Gamification application attracts attention as an application that students want to implement.

Chapter V

Discussion and Conclusions

This chapter indicates discussions regarding the results derived from the statistical analysis applied to the data. The results were discussed in related previous literature about the study variables. The first section is devoted to discussions on the effects of a gamified environment on academic motivation and English self-efficacy levels of fifth-grade middle school students. The second section provides the implications drawn from the results of the study and the recommendations for future research and practice.

5.1 Discussion

In recent years game elements are commonly used in several areas or non-game contexts such as business, human resources, marketing, health and education for different goals such as to motivate users, to improve user engagement and to create a pleasurable environment (Burke, 2014). The millennial generation who have grown up with the Internet are also named digital natives and net citizens who interprets and internalize technology as an ordinary part of everyday life. They know a world with computers and digital games and they frequently use more than one social networking site. They are constantly online and easily adopt new technological devices. Therefore, traditional schooling and using traditional methods in teaching can be perceived as boring by the millennial generation. They have significantly different learning styles and needs (Prensky, 2001, 2005). In this regard, gamification is becoming a more popular concept to enhance student motivation and engagement. Although a number of studies have recently been conducted to examine the efficacy of gamification in the educational context, as far as our knowledge, there are no studies that investigated the effects of a gamified environment on academic motivation and English self-efficacy levels of fifth-grade middle school students.

The main objective of the present study was to examine the effects of a gamified environment (Classcraft) on the academic motivation and English self-efficacy levels of fifth-grade middle school students. The Self-Efficacy Scale for

English and The Academic Motivation Scale were administered to participants as pre-test and post-test. In addition, a demographic information form was used to obtain information about the personal characteristics of the participants and the semi-structured interview questionnaire to determine effectiveness of the elements of gamification was applied during the implementation. Then, the data obtained from the measurements was analyzed.

When the responses of the participants were examined, it was observed that in Self-efficacy for English Scale, students have mostly responded to the items as "strongly agree" and "agree". There are some numbers that came forward more compared to the others. As an example, in question 5, which says "I can answer questions about a text in English" four students answered as "agree" in the pre-test, while 7 students gave this answer in the post-test. The number of students who responded as "strongly agree" did not change. There is an increase in the number of students who understood texts more. This might be because of the reading tasks that students needed to focus on during the year to earn points. Students read different kinds of texts more carefully in order to answer questions to earn points. Also, in the interviews conducted with a group of students in class, students spoke about trying harder to get more points, completing homework more carefully and trying not to make mistakes. Flores (2015) stated that elemens of gamification are effective tools to teach English. In addition, studies have shown that student factor and used materials are effective in language learning. The high motivation of students and the increased use of materials such as computers and games, which can draw the attention of students to lessons, affects language learning and course success positively. (Suryasa, Prayoga & Werdistra, 2017). On the other hand, it can be said that a parallelism can be seen in literature considering gamification elements effect students' motivation and participation positively. (Sailer et al., 2013).

In the same test, under the heading of writing, the sentence "Instead of giving up when I cannot write something, I try harder to solve the problem" sentence was given. In the pre-test, five of the students responded "agree" and eight of students responded as "strongly agree". However, in the post-test, three of the students answered as "agree", two students shifted their answers from this option to "strongly

agree". In total, ten students responded as "strongly agree" for this question. The reason for this increase might be considered as the desire to earn more points. Students may have tried harder to succeed in the task and earning points instead of giving up. During gamification practice, some students were given extra time, such as 15 minutes, to review and complete their writing tasks as they said they wanted to finish the task and get points. Use of gamification in education and various game elements affects the attention, determination, discipline and desires of students positively. (Ahmed & Sutton, 2017; Sezgin et al., 2018). In addition, the perception of competition among the students in the application of gamification can cause students to become more determined and willing (Sepehr & Head, 2013). On the other hand, it is known that application of gamification affects the writing skills of the students positively. (Tantawi, Sadaf & El-Humaid, 2016).

In the listening part of the survey, question 3 says "I can understand the emotional emphasis in a sentence I have heard". 4 students responded as "agree" in the pre-test and 1 student responded as the same in the post-test. However, while 9 students responded as "strongly agree" in the pre-test, 12 students answered this way in the post-test. During the study, students were asked to read some texts aloud using correct pronunciation and intonation. If they make a mistake, they cannot earn points. Some students were observed practicing the texts before class in order to earn points. In the interviews, some students mentioned waiting for the lesson more eagerly. They get ready for class even without instruction to be able to earn points. Similarly in question 6 of the speaking part of the same test, the question says "I can speak English in a way that a native English speaker can understand". In the pre-test, 2 students responded as "agree" and in the post-test, 3 students answered the same way. While 9 students responding as "strongly agree", 10 students gave the same response. While using this gamified environment, students earned extra points for using high-quality language to speak. To be able to earn these points, students even tried to help each other in order to use a higher lexile level. After each unit, they prepared a project and made a presentation and teams helped all their members for a perfect presentation. The desire to be successful and to do better than others is considered as an important motivational tool. Therefore, features such as winning,

levelling up, leaderboards in gamification increase students' desire and motivation. (McCelland, 2009; Sailer et al., 2013).

Also in the listening part of the survey, question 6 says “I can understand what is said on TV and in films”. In the post test, 2 students answered as “disagree” and 2 students answered as “agree” respectively, 6 students responded as “strongly agree”. On the other hand, in the post-test, only 1 student responded as “disagree”. 5 students responded as “agree” and 8 students responded as “strongly agree”. A reason for this increase might be the number of hours that they have been exposed to English throughout the application. In language teaching and learning, practicing is one of the most effective ways (Cook, 2016). Using techniques such as games to practice language in lessons, which attracts and motivates students, affects learning positively by enabling students to practice and use foreign language more. (Bozkurt & Genç-Kumtepe, 2014; Mert, 2017).

In question 3 of the speaking part of the same test, question says “I can speak English, both formally and informally, depending on the purpose and situation”. In some random events, students are supposed to talk very politely or use informal language. Students discovered that they can use necessary language structures and vocabulary in relevant situations. These random events may helped students discover their ability in using correct language forms. In addition, studies have shown that different gamification elements positively affect students' learning levels, academic success and their interest in lessons. (Buckley & Doyle, 2016; Cardoso et al., 2016).

In the next survey, which is Academic Motivation Scale, question 1 is “I look for opportunities to use what I have learned at school to practice outside school.” In the pre-test, while 5 of the students responded as “neither agree or disagree”, 6 students responded as “agree” and 2 said “strongly agree”. In the post-test, only 1 student responded as “neither agree or disagree”, 10 students responded as “agree” and 3 said “strongly agree”. Throughout the practice, students were asked to come up with a project to make our world a better place. They were evaluated by their friends after their presentations. Some points were awarded depending on their friends’ evaluation. In the same survey, question 4 is reverse coded and it says “I am not

interested in the things taught at school". In the pre-test, 50% of the students responded as "agree" and 21.4% of students responded as "strongly agree". In the post-test, half of the students responded as "neither agree or disagree", which was not selected in the pre-test at all. 14.3% of students responded as "agree" and 7.1 of students responded as "strongly agree". In the last question, which says "I often feel like I'm trying to solve a fun puzzle during the exams", 2 students responded as "disagree" in the pre-test, but none of the students gave this answer in the post-test. In total, while 10 students selected "agree" and "strongly agree" in the pre-test, this number has increased to 13 students in the post test. This may be because students started to enjoy the course more towards the end of the application. It is seen that students are willing to use the learning outcomes they have gained in the course of gamification. Gamification is a tool that motivates learners to learn better and allows them to become more interested in topics they are studying in curriculum. According to Lee and Hammer (2011), use of gamification and gamification elements in education increases students' interaction within the class and contributes to development of learning experiences. Gamification, which also promotes academic motivation, allows students to become more interested in topics (Ong, Yeng, Hong & Young, 2013). Therefore, it can be said that the change in answers to the scale item shows a parallelism with the litearture.

Question 15 focuses on helping each other, which says "I like helping others with the things I have learnt". While in the pre-test, there is 1 student who responded as "disagree", in the post-test nobody selected this option. In the pre-test, while 4 students responded as "strongly agree", in the post-test 7 students answered this way. The reason for this change may be about teamwork in the process. Students know that they need to work in teams and they need to help each other to survive in the game, so they help each other. In parallel, Vegt et al. (2014) note that gamification is a tool that can be used to strengthen teamwork and co-operation among individuals. On the other hand, considering that team games are widely played in shared age groups, it can be said that playing games positively affect the cooperation skills of students.

5.1.1 Discussion on Research Question 1. The results of the present study have shown no significant difference as far as the mean scores of English self-efficacy are concerned.

Some improvements in these scores for fifth-grade middle school students at pretest and posttest measures were determined but these improvements did not reach to the statistically significant levels. This result can be related to characteristics of the participants and the primary school that the participants attended. The primary school that participants attended was a private school where the number of weekly course hours is more than public primary schools. In English courses students use several materials and they are encouraged to develop their ability to speak, to make conversation with their teachers and friends and to ask questions. Being successful in a task or activity, observing peers' performances and verbal encouragements that others provide raise self-efficacy beliefs (Bandura, 1997). Moreover the classes are well-organized and not crowded. Studies indicated that crowded classes may be a cause of inefficient language teaching (Alagözlü, 2002). In addition, the school has a number of teachers who are native speakers. They provide a model of the language for students and may have an impact on their self-efficacy (Surati-Jusoh, et al., 2013).

Analysis indicated participants tended to exhibit a high level of self-efficacy for English. The students have been learning English since kindergarten and are from high socioeconomic backgrounds. Therefore, most of them have had an overseas experience which provides them an environment to speak English. In addition, some of the participants stated that they have already had positive ideas and thoughts about English and liked this course.

Although it was not significant, there is an improvement in the scores of English self-efficacy and sub-factors of English self-efficacy. In a study conducted by Banfield and Wilkerson (2014) it was found that using gamification helped students to improve self-efficacy beliefs and 90% of the students surveyed reported results in a way that demonstrated a feeling of self-efficacy. Gamification allows students to receive instant feedback about their progress in the classroom and

acknowledgment of an accomplished task (Kapp, 2012). This feedback and achieving several tasks may raise self-efficacy levels. In addition, the increased time on task and reflective opportunities should help increase students' self-efficacy. Barata and colleagues (2013) also remarked the positive effect of gamification and proved the effectiveness of the gamified version of the college course to increase participation and proactivity.

5.1.2. Discussion on Research Question 2. For the academic motivation for the participants, no major variance was noted between the mean score of the pre and post-test. However, a variance was seen in using the knowledge category among the three categories.

In other words, it can be said that the gamified environment has a positive effect on fifth-grade middle school students' academic motivation level. It had been anticipated that an application of gamification in education improves motivation because the focus of gamification is enhancing learners' motivation. However, to date, no study has indicated that a gamified environment is related to a significant increase in motivation in Turkish primary school students. Results are incongruent with findings based on previous studies, where elevated levels of students' motivation were noted after engaging in a gamified learning environment (Banfield & Wilkerson, 2014; Buckley & Doyle, 2016; Glover, 2013; Yıldırım & Demir, 2014).

According to Glover (2013) using gamification in education may be motivating and engaging due to the characteristics of modern students who have grown up in digital times. Similarly, McGonigal (2011) propounded that the nature of the games are motivating and games as fun tools are effective to motivate students intrinsically.

Similar to the findings of the present study, in a study conducted by Hüner (2018) it was found that gamification supplies a significant difference in both students' motivation and academic achievement. He also noted that students' level of intrinsic motivation was significantly improved after a six-week gamification implementation. In this study, it was also observed that using knowledge in

gamification has a positive effect on academic motivation. Muntean (2011) propounded that gamification integrates both extrinsic and intrinsic motivation through providing several extrinsic rewards like points or levels thus increasing the feeling of autonomy and mastery. Similarly, Dicheva et al. (2015) claimed that games have several features that help individuals to engage with them. Hence they have an impressive power to motivate people. In a study by Abramovich, Schunn and Higashi (2013) it was aimed to explore how the level of motivation changes with exposure to badges and how badge acquisition shapes learner motivation. They found that badges are effective in increasing intrinsic motivation rather than extrinsic motivation Moreover, Banfield and Wilkerson (2014) aimed to examine the effectiveness of gamification as a teaching method and demonstrated that the introduction of gamification provides a dramatic change in students' intrinsic motivation level. Thus it can be said that the results are parallel with the results of published literature.

Results of the analysis also indicated that there is a significant difference between students using knowledge scores which is a sub-factor of academic motivation when a gamified environment is used. Using knowledge involves individual's desire to learn new and different subjects of courses and his or her desire to use what he or she has learned in and out of school (Bozaoğlu, 2004). It also comprises the excitement and enthusiasm to learn new subjects (Nartgün & Çakır, 2014). Previous studies indicated that gamification has been used widely in educational settings to motivate students to learn new things and to use learned subjects. Students who are motivated students are more likely to be actively engaged in learning activities and to display enhanced performance and persistence (Schunk, Pintrich, & Meece, 2008). In addition, gamification offers opportunities for students to progress, level up, get ahead of friends and win prizes using what they learn. It therefore helps students to become more motivated in using knowledge.

In the current study it was also revealed that there is a significant difference between students self-exceeding and exploration scores which are sub-factors of academic motivation when a gamified environment is used. Self-exceeding is related to an individual's desire to do better than expected. It expresses the desire of an

individual to exceed himself / herself in academic issues (Bozanoğlu, 2004). Exploration can be defined as the desire to learn because of personal curiosity and without reward expectation (Nartgün & Çakır, 2014). This conclusion is believed to be related to the fact that the students, especially in the early years of educational experiences, try to meet their expectations, but are not willing to do more (Epstein, 1988). In addition, students learn about the subjects in the curriculum which are compulsory rather than the topics that they are curious about. In this study, the subjects included in the curriculum within the gamification application are mentioned. In addition, gamification uses mechanics like points and rewards to increase students' motivation to reach a desired goal defined by the teacher or curriculum (Burke, 2014). Thus, although students have increased self-exceeding and exploration scores, this increase is not significant.

5.1.3. Discussion on Research Question 3. The finding of the study shows that the gamified environment can influence an increase in team building, cooperation and taking responsibility. In addition, students gave positive evaluations of the outcomes of the gamified environment. These results are consistent with the findings of a study done by Decker and Lawley (2013). Decker and Lawley implemented a voluntary gamification system which aimed to make students aware of goals, opportunities and activities. Students completed achievements which are groups of achievements. After the implementation students began to meet and formed their own study groups.

Yildirim and Demir (2016) conducted a study aiming to determine the opinions of students about a course that is based on gamification, and it was seen that students gave positive feedback about gamification. In addition, similar to the findings obtained from this study, it was seen that gamification facilitated co-operation and communication and helped to foster a sense of responsibility. Similarly Cohen (2011) stated that gamification encourages exploration, collaboration, and exchange of ideas while removing unwanted pressures that can interfere with students' abilities.

Li and colleagues (2013) reported that gamification which provided students to be more active in social activities was an effective way to engage students in collaborative learning with gamification features receiving very positive feedback from students. Similarly, in the study of Mert (2017) it was reported that using a gamified application caused positive changes in students' behaviors and academic success. Using a gamified application ensured students to try to fulfill their responsibilities to receive awards and to do their homework more regularly. The results are consistent with earlier studies.

5.2 Recommendations

Findings of this study can be applied in their respected fields by teachers, learners, managers, psychologists or by any other professionals in their respected fields.

5.2.1 Recommendations for Practitioners. The current study empirically examined the effectiveness of a gamified environment (Classcraft) on the academic motivation and English self-efficacy of Turkish fifth-grade middle school students. The results suggest that gamification implementation may help to increase students' academic motivation and English self-efficacy levels and may provide positive academic outcomes. Therefore, professionals and teachers may develop these kinds of implementations or may use Class-Craft to enhance students' motivation and self-efficacy.

In fact, although using a gamified application proved to improve the academic achievement, student motivation, and engagement and other academic outcomes such as participation and learning no research has yet tried to generate a program which consists of gamification methods to promote positive strengths of fifth-grade middle school students in Turkey. Therefore the current study may be considered as an initial step for future attempts.

This study revealed that the application of gamificatin in English lessons has a positive affects on students' motivation level. It is also seen that the students give

positive feedback for using gamification in other subjects. Therefore, it is possible to spread gamificaion application todifferent subjects.

Some in-service training sessions may be organized for teachers considering participation of students, their motivation and the effect of gamification on self-efficacy levels which are important factors for success in the gamification process. Cooperation can be made with universities. In addition, taking the characteristics of the millenium generation into account, precautions may be taken to make educational technologies more effective in schools.

5.2.2 Recommendations for Researchers. In this study, ClassCraft was used as a gamification application. The impact of different programs or practices on academic motivation and English self-efficacy levels of students were examined. Further studies may examine the effect of gamification on other variables.

The current study was carried out with middle school students enrolled in a private school in Istanbul and the findings can only be generalized for this group. That kind of gamified environment should be applied to different age levels in future studies. Thus a broader applicability may be achieved. Findings of this study are based on the data collected under specific settings and situations. Hence, to measure and observe the usefulness and efficiency of gamified a environment under varying circumstances is suggested.

Data used in this study is based on self-report measures. Further studies should use different methods to obtain data such as peer, teacher or parents' reports. This study used a pre-experimental design which means there was no control or comparison group. It is likely that having a comparison group in future studies would be useful. In the current study posttest data was collected after the program but no follow-up study has been conducted. Thus follow-up studies are imperative and are suggested to measure the perpetuity and stability of the gamification implementation.

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APPENDICES

A. DEMOGRAPHIC INFORMATION FORM

1- Adı- Soyadı:

2- Cinsiyet ( ) Kız ( ) Erkek

3-Yaş: ( )8 ( )9 ( )10

B. ENGLISH SELF-EFFICACY SCALE

Açıklama: Lütfen aşağıdaki her bir soruyu dikkatli şekilde okuyup sorulan soruyu size en uygun gelen seçeneği işaretleyerek cevaplayınız		Bana hiç uymuyor	Çok az uyuyor	Biraz uyuyor.	Oldukça uyur	Tamamen uyuyor
OKUMA		1	2	3	4	5
1	İngilizce bir metin okuduğumda anlayabilirim.	1	2	3	4	5
2	İngilizce akademik metinler okuduğumda önemli noktaları anlayabilirim.	1	2	3	4	5
3	Okuduklarımı zihnimde canlandırabilirim.	1	2	3	4	5
4	Okuduğum İngilizce metnin temasını ya da ana fikrini bulabilirim.	1	2	3	4	5
5	İngilizce bir metinle ilgili soruları cevaplayabilirim.	1	2	3	4	5
6	Okuduğum İngilizce bir metinde anlamını bilmediğim sözcükleri tahmin edebilirim.	1	2	3	4	5
7	İngilizce bir metinde aradığım bilgiyi kolaylıkla bulabilirim.	1	2	3	4	5
8	İngilizce sınavlarının okuma bölümlerinde başarılı olacağıma inanıyorum.	1	2	3	4	5
YAZMA		1	2	3	4	5
1	İyi bir paragraf ya da kompozisyon yazabilirim.	1	2	3	4	5
2	İngilizce bir paragraf ya da kompozisyon yazarken dilbilgisi kurallarını doğru kullanabilirim.	1	2	3	4	5
3	İngilizce bir metin yazarken noktalama işaretlerini doğru kullanabilirim.	1	2	3	4	5
4	İngilizce bir metin yazarken düşüncelerimi tam ve açık olarak ifade edebilirim.	1	2	3	4	5
5	Bir şeyi İngilizce yazamadığımda, pes etmek yerine sorunu çözmek için çaba sarf ederim.	1	2	3	4	5
6	İngilizce yazarken önemli noktaları vurgulayabilirim.	1	2	3	4	5
7	İngilizce bir metni kendi cümlelerimle yeniden yazabilirim.	1	2	3	4	5
8	Günlük yaşamda kendimi İngilizce yazılı olarak ifade edebilirim(özgeçmiş, mektup vb.)	1	2	3	4	5
9	İngilizce herhangi bir şey yazdıktan sonra hatalarımın farkına varabilirim.	1	2	3	4	5
10	İngilizce yazma ile ilgili verilen etkinlikleri yaparken yardıma ihtiyaç duyarım.	1	2	3	4	5
DİNLEME		1	2	3	4	5
1	İngilizce konuşulanları anlayabilirim.	1	2	3	4	5
2	Dinlediğim İngilizce konuşmanın ana fikrini çıkarabilirim.	1	2	3	4	5

3	Dinlediğim bir cümledeki duygusal vurguları anlayabilirim.	1	2	3	4	5
4	İngilizce bir konuşma dinlediğimde bilmediğim sözcüklerin anlamını tahmin edebilirim.	1	2	3	4	5
5	İngilizce bir konuşma duyduktan sonra duyduklarımla ilgili soruları cevaplayabilirim.	1	2	3	4	5
6	İngilizce televizyon kanallarını/ filmleri izlediğimde dinlediklerimi anlayabilirim.	1	2	3	4	5
7	Bir konuşma dinlediğimde resmi dil ile günlük konuşma dilini ayırt edebilirim.	1	2	3	4	5
8	İngilizce bir okuma parçasını dinlerken duyduklarımı doğru olarak yazabilirim.	1	2	3	4	5
9	İki kişi arasında geçen kısa bir İngilizce konuşmayı anlayabilirim.	1	2	3	4	5
10	İngilizce sınavlarının dinleme bölümlerinde başarılı olacağıma inanıyorum.	1	2	3	4	5
KONUŞMA		1	2	3	4	5
1	Günlük yaşamda gerekli ihtiyaçlarımı İngilizce'yi kullanarak karşılayabilirim (Size bir turistin yön sorduğunu düşünün)	1	2	3	4	5
2	Bir konuşmada kendimi İngilizce olarak ifade edebilirim.	1	2	3	4	5
3	Amaca ve duruma göre resmi ya da resmi olmayan bir şekilde İngilizce konuşabilirim.	1	2	3	4	5
4	İngilizce sorulan sorulara cevap verebilirim.	1	2	3	4	5
5	Karşımdaki beni anlamadığında düşüncelerimi başka şekilde ifade edebilirim	1	2	3	4	5
6	Anadili İngilizce olan bir kişinin anlayabileceği şekilde İngilizce konuşabilirim.	1	2	3	4	5

C. ACADEMIC MOTIVATION SCALE

	Aşağıda öğrencilerin öğrenme ve okulla ilgili olarak kendilerini tanımlarken kullandıkları bazı cümleler verilmiştir. Her bir cümleyi dikkatlice okuyup, o cümlenin size ne kadar uygun olduğunu belirleyiniz. Daha sonra cümlenin sol tarafında verilen seçeneklerden size uygun olanın üzerini (X) şeklinde işaretleyiniz. Doğru ya da yanlış cevap yoktur. Herhangi bir cümle üzerinde fazla zaman kaybetmeksizin genel olarak size en uygun olanını seçiniz.	Kesinlikle Uygun Değil	Uygun Değil	Kararsızım	Uygun	Kesinlikle Uygun
1	Öğrendiğim şeyleri okulun dışında da kullanabilmek için fırsatlar ararım	1	2	3	4	5
2	Öğrendiğim her şey, daha fazlasını öğrenme merakı doğurur.	1	2	3	4	5
3	Derse başlar başlamaz, dikkatimi derse veririm.	1	2	3	4	5
4	Okulda öğretilen şeyler benim ilgimi çekmiyor.	1	2	3	4	5
5	Geriye dönüp baktığımda ne kadar çok şey öğrendiğimi görünce sevinirim.	1	2	3	4	5
6	Dersler ve öğrenme konusunda sınıfımdaki diğer öğrencilerden daha istekli olduğumu düşünürüm	1	2	3	4	5
7	Seçme şansım olduğunda genellikle beni uğraştıracak ödevleri seçerim	1	2	3	4	5
8	Beni düşünmeye zorlayan konuları daha çok severim	1	2	3	4	5
9	Kendime koyduğum hedefler çok çalışma ve uzun zaman isteyen hedeflerdir	1	2	3	4	5
10	Biraz zor olan konularda çalışmak daha çok hoşuma gider	1	2	3	4	5
11	Bazen kendimi derse öyle kaptırırım ki, teneffüs zilinin neden bu kadar erken çaldığına şaşırırım	1	2	3	4	5
12	Yeni ve farklı konular çalışmak hep hoşuma gitmiştir	1	2	3	4	5
13	Sırf daha fazla öğrenmek için öğretmenin istediğinden daha kapsamlı ödevler hazırlarım	1	2	3	4	5
14	Yeni bir şey öğrenmek beni heyecanlandırır	1	2	3	4	5
15	Öğrendiklerimle başkalarına yardım etmek hoşuma gider	1	2	3	4	5
16	Zor bir konuyla karşılaştığımda, bunu anlamak için uğraşmak bana keyif verir.	1	2	3	4	5
17	Karşılığında not verilmeyecek olsa da bir şeyi öğrenmek için çokça çalıştığım olur	1	2	3	4	5
18	Bir şey öğrenirken saatlerin nasıl geçtiğini fark etmediğim çok zaman olmuştur.	1	2	3	4	5
19	Eğer ders kitabımda herhangi bir konuyla ilgili yeterli bilgiyi bulamamışsam hemen başka kitaplara da bakarım.	1	2	3	4	5

20	Çoğu zaman sınavlarda zevkli bir bulmaca çözüyormuş gibi hissederim	1	2	3	4	5

D. INTERVIEW FORM

Genel kullanım

1- Öncelikle oyun oynar mısın?

2- Ne tür oyunlar oynuyorsun? Dijital mi yoksa fiziksel oyunlar mı? Hangi oyunları oynarsın?

3- Peki ClassCraft'ın oynadığın oyunlara benzediğini düşünüyor musun? Benziyorsa nasıl benziyor? Örnek verebilir misin?

Motivasyon

4- ClassCraft'ı derste kullanmak dersi daha fazla sevmeni sağladı mı? Neden?

5- ClassCraft'tan dolayı dersi daha istekli bir şekilde bekliyor musun?

6- ClassCraft'tan dolayı derse daha fazla katılmak istiyor musun?

7- ClassCraft'ı sınıfta kullanmak sence eğlenceli mi? Öyleyse buna bir örnek verebilir misin?

8- ClassCraft'ta daha iyi olabilmek için çaba sarfettin mi?

Başarı

9- ClassCraft konusunda iyi miydin? ClassCraft'ta kendini hangi konularda başarılı görüyorsun, hangi konularda yetersiz görüyorsun? Örnek verebilir misin?

Avatar

10- Neden şu an kullandığın avatarı seçtin? Hangi kriterleri dikkate aldın?

11- Avatarında en beğendiğin özellik nedir?

12- Avatarında eksik olduğunu düşündüğün bir özellik var mı?

Takım çalışması

13- Bu süreçte, bir takım halinde çalışmak seni nasıl etkiledi? İyi bir takım olduğunuzu düşünüyor musun? Neden?

14- Takım olarak çalışırken seni strese sokan herhangi bir durum oldu mu?

15- Takım arkadaşlarının "takım ruhu" konusuna önem verdiğini düşünüyor musun?

Puanlar

16- XP kazanmak sana kendini daha başarılı hissettirdi mi?

17- Topladığın –XP'ler İngilizce dersinde başarılı olabileceğini düşündün mü?

18- Topladığın XP'lerle ders başarın arasında paralellik var mıydı?

19- ClassCraft'ta –XP toplamak daha fazla çaba sarfetmeni sağladı mı? Neden?

Rastgele olaylar

20- Random Event'tleri hazırlarken, öğretmeniniz fikirlerinizi aldı mı? Bu fikirleri uygulayabildi mi?

21- Random Event'lerden sende bir heyecan uyandırdı mı? Örnek verebilir misin?

22- Random Event'lerden olumsuz bir olay çıkması derse karşı olan ilgini kaybetmene sebep oldu mu?

Derslerde kullanım

23- Bu sürecin normal ders anlatımından daha farklı ve faydalı olduğunu düşünüyor musun? Neden?

24- Diğer derslerde de ClassCraft olmasını ister miydin? Hangi derste isterdin? Neden?

25- Gelecek yıl yine ClassCraft'ın kullanılmasını ister miydin? Gelecek yıl neleri değiştirmek isterdin?

E. ÖĞRENCİLERİN ÖZYETERLİK ÖLÇEĞİNE VERDİKLERİ CEVAPLARIN DAĞILIMI

Note: Please read each of the following questions carefully and answer the question asked by checking the option that best suits you.				Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
	READING			1	2	3	4	5
1	I can understand when I read an English text.	Pre-test	%	0	0	35.7	21.4	42.9
			N	0	0	5	3	6
		Post-test	%	0	0	21.6	28.6	50
			N	0	0	3	4	7
2	I can understand the important points when I read English academic texts.	Pre-test	%	0	0	21.4	28.6	50
			N	0	0	3	4	7
		Post-test	%	0	0	7.1	50	42.9
			N	0	0	1	7	6
3	I can visualize what I read in my mind.	Pre-test	%	0	0	7.1	28.6	64.3
			N	0	0	1	4	9
		Post-test	%	0	0	0	21.4	78.6
			N	0	0	0	3	11
4	I can find the theme or the main idea of the English text I read.	Pre-test	%	0	0	21.4	28.6	50
			N	0	0	3	4	7
		Post-test	%	0	0	0	50	50
			N	0	0	0	7	7
5	I can answer questions about an English text.	Pre-test	%	0	0	**21.4**	**28.6**	**50**
			N	0	0	**3**	**4**	**7**
		Post-test	%	0	0	**0**	**50**	**50**
			N	0	0	**0**	**7**	**7**
6	I can guess words in English that I do not know the meaning of.	Pre-test	%	0	0	7.1	28.6	64.3
			N	0	0	1	4	9
		Post-test	%	0	0	7.1	35.5	57.1
			N	0	0	1	5	8
7	I can easily find the information I am looking for in an English text.	Pre-test	%	0	0	7.1	42.9	50
			N	0	0	1	6	7
		Post-test	%	0	0	14.3	35.5	50
			N	0	0	2	5	7
8	I believe I will be successful in reading sections of my English exams.	Pre-test	%	0	7.1	7.1	28.6	57.1
			N	0	1	1	4	8
		Post-test	%	0	0	7.1	42.9	50
			N	0	0	1	6	7
	Total Number	Pre-		0	1	18	33	60

		est						
	Total Number	Post-est	0		0	8	44	60
WRITING								
1	I can write a good paragraph or composition.	Pre-test	%	0	0	0	42.9	57.1
			N	0	0	0	6	8
		Post-test	%	0	0	0	50	50
			N	0	0	0	7	7
2	I can use the grammar rules correctly when writing a paragraph or essay in English.	Pre-test	%	0	0	14.3	21.4	64.3
			N	0	0	2	3	9
		Post-test	%	0	0	7.1	28.6	64.3
			N	0	0	1	4	9
3	I can use punctuation correctly when writing an English text.	Pre-test	%	0	7.1	7.1	28.6	57.1
			N	0	1	1	4	8
		Post-test	%	0	0	14.3	28.6	57.1
			N	0	0	2	4	8
4	When writing an English text, I can express my thoughts completely and clearly.	Pre-test	%	0	0	14.3	28.6	57.1
			N	0	0	2	4	8
		Post-test	%	0	0	7.1	42.9	50
			N	0	0	1	6	7
5	Instead of giving up when I cannot write something, I try harder to solve the problem.	Pre-test	%	0	0	7.1	**35.7**	**57.1**
			N	0	0	1	**5**	**8**
		Posttest	%	0	0	7.1	**21.4**	**71.4**
			N	0	0	1	**3**	**10**
6	I can highlight important points when writing in English.	Pre-test	%	0	0	28.6	28.6	42.9
			N	0	0	4	4	6
		Post-test	%	0	0	14.3	28.6	57.1
			N	0	0	2	4	8
7	I can rewrite an English text with my own words.	Pre-test	%	0	0	0	42.9	57.1
			N	0	0	0	6	8
		Post-test	%	0	0	0	42.9	57.1
			N	0	0	0	6	8
8	In daily life, I can express myself in English (resume, letter etc.).	Pre-test	%	0	0	0	21.4	78.6
			N	0	0	0	3	11
		Post-test	%	0	0	0	14.3	85.7
			N	0	0	0	2	12
9	After I write anything in English, I can notice my mistakes.	Pre-test	%	0	0	21.4	42.9	35.5
			N	0	0	3	6	5
		Post-test	%	0	0	14.3	42.9	42.9
			N	0	0	2	6	6
10	I need help when doing activities related to	Pre-test	%	0	21.4	28.6	21.4	28.6

	writing in English.		N	0	3	4	3	4
		Post-test	%	0	28.6	14.3	25.5	21.4
			N	0	4	2	5	3
	Total Number	Pre-test	0		4	17	44	75
	Total Number	Post-test	0		4	11	47	78
LISTENING								
1	I can understand spoken English.	Pre-test	%	0	0	0	28.6	71.4
			N	0	0	0	4	10
		Post-test	%	0	0	7.1	21.4	71.4
			N	0	0	1	3	10
2	I can get the main idea of what I listen to in English.	Pre-test	%	0	0	7.1	28.6	64.3
			N	0	0	1	4	9
		Post-test	%	0	0	0	21.4	78.6
			N	0	0	0	3	11
3	I can understand the emotional emphasis in a sentence I have heard.	Pre-test	%	0	0	7.1	**28.6**	**64.3**
			N	0	0	1	**4**	**9**
		Post-test	%	0	0	7.1	**7.1**	**85.7**
			N	0	0	1	**1**	**12**
4	When I listen to an English speech, I can guess the meaning of the words I do not know.	Pre-test	%	0	0	7.1	28.6	64.3
			N	0	0	1	4	9
		Post-test	%	0	0	7.1	35.5	57.1
			N	0	0	1	5	8
5	After hearing an English conversation, I can answer questions about what I hear.	Pre-test	%	0	0	14.3	14.3	71.4
			N	0	0	2	2	10
		Post-test	%	0	0	7.1	28.6	64.3
			N	0	0	1	4	9
6	I can understand what I listen to when watching English TV channels / movies.	Pre-test	%	0	0	**28.6**	**28.6**	**42.9**
			N	0	0	**4**	**4**	**6**
		Post-test	%	0	0	**7.1**	**35.5**	**57.1**
			N	0	0	**1**	**5**	**8**
7	When I listen to a conversation, I can distinguish more formal language from daily conversation language.	Pre-test	%	0	0	14.3	35.5	50
			N	0	0	2	5	7
		Post-test	%	0	0	0	50	50
			N	0	0	0	7	7
8	I can write correctly what I hear when listening to an English that is read.	Pre-test	%	0	0	14.3	35.5	50
			N	0	0	2	5	7
		Post-test	%	0	0	14.3	35.5	50
			N	0	0	2	5	7
9	I can understand a short English conversation between two people.	Pre-test	%	0	0	7.1	14.3	78.6
			N	0	0	1	2	11

		Post-test	%	0	0	0	21.4	78.6
			N	0	0	0	3	11
10	I believe that I will be successful in the English listening section of the exams.	Pre-test	%	0	0	7.1	21.4	71.4
			N	0	0	1	3	10
		Post-test	%	0	0	7.1	21.4	71.4
			N	0	0	1	3	10
	Total Number	Pre-test	0		0	15	37	88
	Total Number	Post-test	0		0	8	39	93
SPEAKING								
1	I can meet my needs in daily life using English (think that a tourist is asking for directions).	Pre-test	%	0	0	7.1	28.6	64.3
			N	0	0	1	4	9
		Post-test	%	0	0	7.1	21.4	71.4
			N	0	0	1	3	10
2	In a conversation I can express myself in English.	Pre-test	%	0	0	0	28.6	71.4
			N	0	0	0	4	10
		Post-test	%	0	0	0	28.6	71.4
			N	0	0	0	4	10
3	I can speak English, both formally and informally, depending on the purpose and situation.	Pre-test	%	0	0	7.1	**35.5**	**57.1**
			N	0	0	1	**5**	**8**
		Post-test	%	0	0	7.1	**21.4**	**71.4**
			N	0	0	1	**3**	**10**
4	I can respond to questions asked in English.	Pre-test	%	0	0	0	28.6	71.4
			N	0	0	0	4	10
		Post-test	%	0	0	0	21.4	78.6
			N	0	0	0	3	11
5	I can express my thoughts differently when the person I am having a conversation with does not understand me.	Pre-test	%	0	0	7.1	35.5	57.1
			N	0	0	1	5	8
		Post-test	%	0	0	0	42.9	57.1
			N	0	0	0	6	8
6	I can speak English in a way that a native English speaker can understand.	Pre-test	%	0	0	**21.4**	**14.3**	**64.3**
			N	0	0	**3**	**2**	**9**
		Post-test	%	0	0	**7.1**	**21.4**	**71.4**
			N	0	0	**1**	**3**	**10**
	Total Number	Pre-test	0		0	6	24	54
	Total Number	Post-test	0		0	3	22	59

F. ÖĞRENCİLERİN AKADEMİK MOTİVASYON ÖLÇEĞİNE VERDİKLERİ CEVAPLARIN DAĞILIMI

Below are some statements that students use to describe themselves in relation to learning and school. Read each sentence carefully and determine how appropriate it is for you. Then, mark (x) the correct option for you.				Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
				1	2	3	4	5
1	I look for opportunities to use what I learn at school, out of the school.	Pre-test	%	0	**7.1**	**35.7**	**42.9**	**14.3**
			N	0	**1**	**5**	**6**	**2**
		Post-test	%	0	**0**	**7.1**	**71.4**	**21.4**
			N	0	**0**	**1**	**10**	**3**
2	Everything I learn makes me more curious to learn.	Pre-test	%	0	0	21.4	35.7	42.9
			N	0	0	3	5	6
		Post-test	%	0	0	28.6	35.7	35.7
			N	0	0	4	5	5
3	I give my attention to the lesson the moment we start.	Pre-test	%	0	7.1	21.4	50	21.4
			N	0	1	3	7	3
		Post-test	%	0	0	14.3	57.1	28.6
			N	0	0	2	8	4
4	Things that are taught in school are not interesting to me.	Pre-test	%	0	**0**	**28.6**	**50**	**21.4**
			N	0	**0**	**4**	**7**	**3**
		Post-test	%	0	**50**	**28.6**	**14.3**	**7.1**
			N	0	**7**	**4**	**2**	**1**
5	I'm glad to see how much I've learned when I look back.	Pre-test	%	0	0	21.4	35.7	42.9
			N	0	0	3	5	6
		Post-test	%	0	0	21.4	35.7	42.9
			N	0	0	3	5	6
6	I think I am more interested in lessons and learning than any other student in my class.	Pre-test	%	0	0	35.7	21.4	42.9
			N	0	0	5	3	6
		Post-test	%	0	0	35.7	21.4	42.9
			N	0	0	5	3	6
7	When I have a choice, I usually choose assignments that will challenge me.	Pre-test	%	14.3	7.1	14.3	35.7	28.6
			N	2	1	2	5	4
		Post-test	%	0	0	28.6	42.9	28.6
			N	0	0	4	6	4
8	I like things that force me to think more.	Pre-test	%	0	0	35.7	14.3	50
			N	0	0	5	2	7
		Post-test	%	0	0	14.3	42.9	42.9
			N	0	0	2	6	6
9	The targets that I set for myself require	Pre-	%	0	7.1	28.6	35.7	28.6

	very hard work and a long time.	test	N	0	1	4	5	4
		Post-	%	0	0	35.7	21.4	42.9
		test	N	0	0	5	3	6
10	I like it more to work on topics that are a bit difficult.	Pre-	%	0	0	35.7	28.6	25.7
		test	N	0	0	5	4	5
		Post-	%	0	0	28.6	35.7	35.7
		test	N	0	0	4	5	5
11	Sometimes I lose myself in the course and I get surprised that the recess bell rings so early.	Pre-	%	7.1	7.1	21.4	35.7	28.6
		test	N	1	1	3	5	4
		Post-	%	0	7.1	26.6	42.9	21.9
		test	N	0	1	4	6	3
12	I always like to work on new and different subjects.	Pre-	%	0	0	21.4	42.9	35.7
		test	N	0	0	3	6	5
		Post-	%	0	0	21.4	35.7	42.9
		test	N	0	0	3	5	6
13	I prepare more comprehensive assignments than the teacher requests in order to learn more.	Pre-	%	14.3	7.1	21.4	42.9	14.3
		test	N	2	1	3	6	2
		Post-	%	0	14.3	28.6	50	7.1
		test	N	0	2	4	7	1
14	It excites me to learn something new.	Pre-	%	0	0	21.4	21.4	57.1
		test	N	0	0	3	3	8
		Post-	%	0	0	14.3	21.4	64.3
		test	N	0	0	2	3	9
15	I like helping others with the things I have learnt.	Pre-	%	0	**7.1**	**21.4**	**42.9**	**28.6**
		test	N	0	**1**	**3**	**6**	**4**
		Post-	%	0	**0**	**7.1**	**42.9**	**50**
		test	N	0	**0**	**1**	**6**	**7**
16	When I meet with a tough language problem, it makes me happy to deal with it.	Pre-	%	0	0	35.7	35.7	28.6
		test	N	0	0	5	5	4
		Post-	%	0	0	28.6	42.9	28.6
		test	N	0	0	4	6	4
17	Although I will not be graded, there are times that I work a lot to learn something new.	Pre-	%	0	0	28.6	28.6	42.9
		test	N	0	0	4	4	6
		Post-	%	0	0	21.4	35.7	42.9
		test	N	0	0	3	5	6
18	There are lots of times that I have not realized how I spent my hours while learning.	Pre-	%	7.1	7.1	7.1	35.7	42.9
		test	N	1	1	1	5	6
		Post-	%	0	7.1	7.1	35.7	50
		test	N	0	1	1	5	7
19	If I cannot find enough information about any topic in my textbook, I look up other	Pre-	%	0	0	14.3	50	35.7
		test	N	0	0	2	7	5

	books as well.	Post-test	%	0	0	14.3	35.7	50
			N	0	0	2	5	7
20	I often feel like I'm trying to solve a fun puzzle during the exams	Pre-test	%	0	**14.3**	**14.3**	**35.7**	**35.7**
			N	0	**2**	**2**	**5**	**5**
		Post-test	%	0	**0**	**7.1**	**50**	**42.9**
			N	0	**0**	**1**	**7**	**6**

CURRICULUM VITAE

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EDUCATION

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WORK EXPERIENCE

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2011-Ongoing	FMV Isik Primary School	English Teacher

FOREIGN LANGUAGES

English

CERTIFICATES

University of California, Irvine (Virtual Teaching Specialization: Grade Achieved: 100.0%) Coursera / Online

University of Pennsylvania (Gamification: Grade Achieved: 84.9%) Coursera / Online

Univeristy of Houston Systems (Powerful Tools for Teaching and Learning. Web 2.0 Tools: Grade Achieved: 92.0%) Coursera / Online

University System of Georgia (K-12 Blended & Online Learning: Grade Achieved: 98.2%, with distinction)

International Teaching Institution (Certificate of English Language Teaching to Adults: Pass B) Istanbul / Turkey

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HOBBIES

Travelling, meeting new people, volunteering.