THE USE OF MULTIPLAYER ONLINE COMPUTER GAMES IN DEVELOPING
EFL SKILLS

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ABSTRACT

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The aim of the present study was to investigate the outcomes of using multiplayer online computer games for the development of EFL skills. For this purpose, the study employed a sequential mixed-methods design in which quantitative and qualitative data was collected by 13 multiplayer online gamer EFL learners studying at a private university in Konya, Turkey. The quantitative data was collected through the analysis of the English proficiency levels of the participants before and after a gaming period in which the participants played multiplayer online computer games to improve their EFL skills via two sample Cambridge Preliminary English Tests. The qualitative data was collected by conducting a semi-structured interview with participants to learn about their opinions towards playing multiplayer online computer games to improve EFL skills. The quantitative findings revealed that the gaming period resulted in a significant overall development of target language skills and a significant development of target language listening and speaking skills. On the other hand, the quantitative findings did not indicate a significant increase in the reading and writings cores of the participants. The qualitative findings uncovered the benefits and challenges of the gaming period in terms of the overall gaming experiences of the participants, teacher

guidance during the gaming period, using an upper-limit of playing hours during the gaming period, development of target language skills and additional comments. Based on the findings, the study provides theoretical implications for researchers and practical implications for EFL teachers.

ÖZ

ÇOK OYUNCULU ÇEVRİMİÇİ BİLGİSAYAR OYUNLARININ YABANCI DİL BECERİLERİNİN GELİŞTİRİLMESİNDE KULLANIMI

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Mevcut çalışma yabancı dil becerilerinin geliştirilmesi için çok oyunculu çevrimiçi bilgisayar oyunlarının kullanımının sonuçlarını araştırmak için gerçekleştirilmiştir. Bu amaçla çalışma içerisinde Konya, Türkiye'de üniversite öğrencisi olan 13 İngilizce öğrencisi katılımcıdan nicel ve nitel verinin sırasıyla toplandığı sıralı açıklayıcı karma desen kullanılmıştır. Nicel veri katılımcıların çok oyunculu çevrimiçi bilgisayar oyunlarını İngilizce becerilerini geliştirmek amacıyla oynadıkları bir oyun sürecinin öncesinde ve sonrasında iki örnek Cambridge PET sınavı aracılığıyla İngilizce seviyelerinin analiz edilmesi ile toplanmıştır. Nitel veri ise oyun sürecinin sonunda katılımcıların çok oyunculu çevrimiçi bilgisayar oyunlarını İngilizce becerilerini geliştirmek amacıyla oynamaya yönelik düşüncelerini elde etmek üzere yarı-yapılandırılmış bir görüşme aracılığıyla toplanmıştır. Nicel sonuçlar oyun sürecinin hedef dil becerilerinin genel olarak geliştirilmesi ve ayrıca dinleme ve konuşma becerilerinin önemli ölçüde geliştirilmesi ile sonuçlandığını ortaya çıkarmıştır. Diğer yandan, nicel sonuçlar okuma ve yazma testlerinde önemli bir artış olmadığını göstermiştir. Nitel veriler ise katılımcıların oyun sürecine yönelik genel düşünceleri, oyun sürecinde öğretmen yönlendirmesi, oyun sürecinde bir üst limitin kullanılması, hedef dil becerilerinin geliştirilmesi ve ek yorumlar açısından oyun sürecinin faydalarını ve zorlukları ortaya çıkarmıştır. Bulgulara dayalı olarak, çalışma

araştırmacılara yönelik kuramsal çıkarımlar ve öğretmenlere yönelik uygulama ağırlıklı çıkarımlar sağlamaktadır.

Anahtar Sözcükler: Bilgisayar destekli dil öğrenimi, bilgisayar oyunları ve dil öğrenimi, yabancı dil olarak İngilizce öğrenimi

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INTRODUCTION

1.1 Background to the Study

Information and communication technology (ICT) started to gain crucial importance in people's lives towards the end of the 20th century by providing people practical instruments, to facilitate their lives and make their lives more enjoyable. Among the tools that ICT has provided to people, the computer is one of the most important. The importance of computer has been rising ever since they were created. According to a research report by Forrester Research (2007), there would be 1 billion personal computer (PCs) worldwide and 2 billion PCs by the end of 2015 and according to Rosoff (2011) there were 1.25 billion PCs worldwide. Only in 2017, 262.5 million PCs were shipped worldwide ("PC unit shipments worldwide 2017 | Statistics", n.d.). Thanks to the practicalities they provide, computers have been used in many aspects of life such as business, science, education and medicine and a substantial amount of research has been conducted on the use of computer in these fields.

Entertainment has also played an important part among these dimensions and computer games have attracted the attention of millions over the years. A report by Spilgames (2013) indicated that there were 1.2 billion gamers worldwide and among these 1.2 billion gamers, 700 million play online games. According to the report, female online gamers formed 46% of the total online gamer population while male gamers formed the other 54%. The report further stated that 70% of the online population in Turkey played online computer games. According to ESA's (2017) report on information about computer and video games, 65% of households in the United States have at least one person that plays computer games for three or more

hours per week. Considering these figures, it can be stated that computer games and especially online computer games have been a significant part of our lives.

As a result of their prevalence, computer games have been a subject to various research studies in many fields. One of the research areas that has received much attention from the researchers is the use of computers games in education. Many researchers from various backgrounds have examined computer games to draw conclusions for teaching and learning. Computer games have been investigated in terms of their use and outcomes in teaching medicine (Kirsch, 1963), teaching and training traffic police officers (Serway, Kennedy & Rath, 1973), teaching economics (Robinson, 1974; Robinson, 1977), educating shareholders in terms of developing urban planning systems (Wärneryd, 1975), teaching physics (Bork, 1975), teaching computer program engineering (Horning & Wortman, 1977), teaching dentistry (Reisman, Emmons, Morito, Rivaud & Green, 1977), teaching road construction management (Harris & Evans, 1977), training managers (Bonini, 1978), system-designing education (Lyons, 1978), teaching research methods (Macfarlane & Moody, 1982), public education for emergencies (Morentz, 1985), optometry education (Leroy, Zeitner, Smith & Yolton 1994), teaching entrepreneurship (Feldman, 1995), teaching history (Campion, 1995), nutrition teaching (Turnin et al., 2001), teaching nursing (Batscha, 2002), teaching literature (Rettberg, 2004), teaching statistics (Philpot, Hall, Hubing & Flori, 2005), teaching and analyzing behaviors (Wang, Lee & Chiu, 2006), teaching architecture Haque & Dasgupta (2008), teaching mathematics (Barendregt, Lindström, Rietz-Leppänen, Holgersson & Ottosson, 2012), planning education (Minnery & Searle, 2014), teaching social skills (Modafferi, Boniface, Crowle, Star & Middleton (2016) and in many other fields.

In a similar way with the studies that have focused on using computer games in learning and teaching, computer games have also been a subject to various research studies in second and foreign language education as part of Computer Assisted Language Learning (CALL). Some researchers have focused on investigating the use and adaptation of computer games for foreign language education (Coleman, 1990; Taylor 1990; Coleman, 1995; Coleman, 2002; Anderson, Reynolds, Yeh & Huang,

2008; Chen & Huang, 2010) while others have concentrated on developing and analyzing prototypes and software specifically designed for foreign language education (Li & Topolewski, 2002; Neri, Cucchiarini & Strik, 2002; Giuliani, Mich & Nardon, 2003; Mich, Betta & Giuliani, 2004; Sorensen & Meyer, 2007; Ranalli, 2008). With the emergence of studies that highlight the importance of computer games in language learning and teaching in terms of target language vocabulary acquisition (Rankin, Morrison & Shute, 2009; Rankin, Morrison, McNeal, Gooch & Shute, 2009; Peterson, 2010; Sylvén & Sundqvist, 2012; Lo & Kuo, 2013; Huang & Yang, 2014), increased practice of target language skills (Peterson, 2010; Suh, Kim & Kim, 2010; Peterson, 2012; Rama, Black, van Es & Warschauer, 2012; Zheng, Newgarden & Young, 2012), effective interaction and participation (Peterson, 2010; Kongmee, Strachan, Pickard & Montgomery, 2012; Peterson, 2012; Rama et al., 2012; Thorne, Fischer & Lu, 2012) and increased motivation for learning and practicing their language skills (Peterson, 2010; Suh et. al., 2010; Kongmee et. al., 2012; Lo & Kuo; 2013) computer games and language learning have received more attention.

In recent years, there has been a focus on investigating the effects of multiplayer online computer games on enhancing target language competence and performance. Thanks to the language learning opportunities they provide in authentic virtual environments through various in-game features and written-spoken communication possibilities, multiplayer online computer games have drawn a lot of attention. The positive outcomes of using multiplayer online computer games in learning, teaching and practicing target language grammar, vocabulary, reading, listening, writing and speaking have been pointed out by a number of researchers in various studies with different designs (Rankin, Morrison & Shute, 2009; Rankin, Morrison, McNeal, Gooch & Shute, 2009; Suh et. al. 2009; Peterson, 2010; Kongmee et. al., 2012; Zheng, et. al., 2012; Rama et. al., 2012; Sylvén & Sundqvist, 2012; Thorne et. al., 2012); Lo & Kuo, 2013; Huang & Yang, 2014; Zheng, Bischoff & Gilliland, 2015; Hwang & Wang, 2016; Jennifer et al., 2016; Newgarden & Zheng, 2016; Quintín, Sanz & Zangara, 2016). These studies mostly corroborated each other's findings in terms of the positive outcomes that multiplayer online computer games provide for learning, teaching and practicing second/foreign language systems and skills.

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Considering the applications and the outcomes regarding the use of computer games in learning and teaching that were put forward in the studies mentioned above, it can be stated that computer games have a vast potential of use in learning and teaching foreign languages. However, computer games also have a potential to cause addiction symptoms and tendency of violence unless they are used appropriately. A number of researchers have investigated computer games in terms of their potential to cause negative outcomes and addressed possible problems such as academic failure and family problems (Ng & Wiemer-Hastings, 2005), aggressive attitudes and behavior (Grüsser, Thalemann & Griffiths, 2006), trying to tackle the feeling of dissatisfaction in a virtual environment rather than seeking satisfaction (Wan & Chiou, 2006), being loyal to computer games despite being dissatisfied (Lu & Wang, 2008), creating cognitive deficits despite increasing visuospatial skills (Sun, Ma, Bao, Chen & Zhang, 2008), decrease in academic achievement (Skoric, Teo & Neo, 2009), negative effects on physical and psychological conditions (Hsu, Wen & Wu, 2009), a significant relationship among internet addiction, computer games addiction and shyness (Ayas, 2012), a tendency to become addicted to computer games in order to compensate for the lack of relationships and means of escape (Xu, Turel & Yuan, 2012), decreased quality of life due to nearly 30 hours of game-playing a week (Lehenbauer-Baum & Fohringer, 2015) and a negative correlation between gaming addiction and academic achievement (Sahin, Gumus & Dincel, 2016) in case of the misuse of computer games. Consequently, it can be stated that computer games can be used to facilitate learning and teaching; however, possible negative symptoms such as addiction and violent behaviors need to be controlled in such a case.

1. 2 Statement of the Problem

The studies that have investigated the effects of computer games on learning and teaching have provided valuable implications for learning and teaching second and foreign languages. It can be said that computer games provide valuable opportunities for learning target language grammar and vocabulary and improve target language reading, listening, writing and speaking skills (Rankin et al., 2009; Rankin et. al, 2009;

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Peterson, 2010; Sylvén & Sundqvist, 2012; Lo & Kuo, 2013; Huang & Yang, 2014; Peterson, 2010; Suh et. al., 2010; Peterson, 2012; Rama et. al., 2012; Zheng et. al., 2012). Furthermore, based upon the findings of these studies, it can also be stated that there is nearly a total consensus on the positive effects of computer games on multiplayer online computer games for learning languages in terms of vocabulary acquisition.

On the other hand, there are still several points to be taken into consideration. One of these points is the inadequacy of focus on the evaluation of the effects of computer games on the development of language skills as a whole. Most studies that have analyzed the effects of computer games on learning and teaching languages have focused on one aspect of language learning such as vocabulary learning or speaking development. There is a need for the investigation of the effects of multiplayer online games on target language skills development as a whole to understand the wholistic effects of multiplayer online computer games on learning and teaching second and foreign languages more effectively.

Another important point to be taken into consideration is the further analysis of multiplayer online games and language learning through different data collection methods and techniques. Most studies that have scrutinized multiplayer online computer games and language learning have evaluated the effectiveness of computer games in terms of learning and teaching languages via self-created tests such as vocabulary achievement tests or via using qualitative methods such as open-ended survey questions and interviews. These data collection methods have provided important findings and implications for learning and teaching languages. However, in order to understand the effects of multiplayer online computer games on learning and teaching languages more deeply in the long term, internationally recognized proficiency tests that evaluate the language competence and performance of language learners in a more comprehensive way should also be used in addition to other quantitative and qualitative data collection techniques.

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A further point to be taken into consideration is monitoring of students in an effort to prevent any possible negative effects of computer games such as violent and aggressive attitudes or addiction symptoms. Few studies have paid attention to the findings in the literature which indicate the possible negative effects of computer games on students and yet fewer studies have taken precautions to prevent any possible negative outcomes such as addiction symptoms or aggressive behaviors from happening.

1.3 Statement of Purpose

This study was carried out in order to understand whether a certain period of time in which language learners play multiplayer online computer games with a conscious effort to learn target language structures and practice language skills by taking regular feedback and guidance from a language teacher had a significant effect on target language skills development. In addition to this purpose, the study also aimed to find out about the attitudes and experiences of language learners towards target language learning and target language skills development within this period of time.

The present study also intended to provide findings, suggestions and implications for computer games and language learning, more specifically for multiplayer online computer games and language learning, by putting an effort to tackle the gaps in the literature such as the insufficiency of studies that analyze the effectiveness of computer games in terms of wholistic target language knowledge and skills development, the inadequacy of studies that analyze the effectiveness of computer games on language learning and target language skills development via internationally recognized proficiency tests.

1.4 Research Questions

In this study, the following research questions were employed:

1. Does multiplayer online computer gaming for developing EFL skills result in a significant overall development of target language skills?
2. Does multiplayer online computer gaming for developing EFL skills result in a significant development of target language skills based on:
a. Reading?
b. Writing?
c. Listening?
d. Speaking?
3. What are the opinions of language learners towards playing multiplayer online computer games for developing EFL skills?

1.5 Significance of the Study

Despite an increasing amount of interest on the use of computer games, especially multiplayer online computer games, in learning, teaching and practicing second and foreign language systems and skills, there are still many points to be investigated within this subject matter. This study aimed to contribute to the literature by building on the studies that had been carried out previously and by providing additional data to the literature by providing the holistic analysis of multiplayer online computer games and target language skills development through internationally recognized proficiency exams and monitoring potential unwanted outcomes such as addiction symptoms and violent behaviors.

Considering the prevalence of computer games, it can be fruitful to put an effort to utilize gaming as a means of learning and teaching in addition to its use as a means of entertainment. As stated earlier, computer games are used in distinct areas of education and they provide several opportunities and help facilitate the learning process in these areas by providing advantages such as replacing the traditional learning and teaching techniques with more interesting ones, making learning happen in a shorter period time, providing virtual reality and practice environments that are otherwise hard to achieve and supplementing course books and main materials. Computer games might provide similar advantages for language learning. They can give learners opportunities

to be exposed to in-game features such as reading and listening to quests and having conversations with non-player characters (NPCs). Through these opportunities, learners can have increased chances to practice their knowledge and skills by also entertaining themselves. In addition to the potential benefits of computer games, multiplayer online computer games might provide a more unique advantage for language learning; being in an interactive language learning environment. Many language learners don't have an opportunity to acquire their target language systems and skills in an environment in which their target language is a part of everyday life. They can't easily interact with native speakers and speakers of other languages who are also trying to learn the same target language. Multiplayer online computer games can give these learners an opportunity to be in the same environment with native speakers and speakers of other languages for a specific period of time and make it possible for these learners to interact with these learners via reading their written messages and listening their audio messages and also make it possible for these learners to respond to them via written messages and speaking through a microphone. This can help them overcome the disadvantage of being in an environment in which the language is used naturally. The present study might provide further insights to the literature regarding the use of multiplayer online computer games in terms of providing language learners authentic target language learning and practice environments with native speakers and other language learners with different native languages.

In addition to this, it was mentioned that computer games might result in unwanted negative outcomes in contrast with their positive effects in learning and teaching subjects. Potential reasons for these unwanted negative outcomes include uncontrolled and unplanned gaming habits. In teacher-controlled gaming, students can regularly report specific information related to their in-game personal experiences such as the content of the computer games that they play, the amount of time they spend on playing computer games, effectiveness of in-game relationships with other players, coping strategies with offensive written or oral messages, the amount of money that they spend on computer games and in-game features via screenshots, replays, written reports and one-on-one interviews. Consequently, teacher-controlled gaming can help learners recognize the problems they have while playing computer games and

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overcome these problems with the help of their teachers. In multiplayer online gaming for developing EFL skills, students can regularly report their in-game language learning experiences such as reading texts, listening to characters, written interactions with other players and spoken conversations with other players to improve their language learning experiences. In addition, students can also have regular interviews with their teachers in which they discuss the ways in which they can optimize their language learning outcomes while gaming. In this way, multiplayer online gaming might help learners increase their target language proficiency levels while playing computer games. Briefly, as a result of online gaming for learning and practicing language skills with the control and guidance of a teacher, language learning experiences can be increased and potential problems can be decreased as far as possible.

Considering these points, the study aims to contribute to the literature by providing the results of a four-week multiplayer online gaming period for EFL skills development with the guidance of an English teacher. The findings of the study will focus on the outcomes of playing multiplayer online computer games to develop EFL skills and the ideas of university level EFL learners on developing target language skills through multiplayer online games. By using a standardized proficiency test (Cambridge PET) that evaluates the reading, writing, listening and speaking performances of English learners, the study aims to provide information to the literature in terms of the development of target language skills through multiplayer online computer games. In addition to this, the study seeks to shed light on the ideas of the students regarding the use of multiplayer online games for target language development by conducting a semi-structured interview. In addition to the efforts of providing statistical and qualitative data to the literature, the study also intends to provide implications for learners and teachers by providing them the findings and the implications in the literature, present applications that were carried out as part of this study, the quantitative and qualitative outcomes of the present study in terms of developing EFL skills, the comparison of the findings in the literature and the present study and the implications of the present study according to the procedures that were carried out.

CHAPTER 2

LITERATURE REVIEW

2.1 Computer Assisted Language Learning (CALL)

Computers have been around for a long time and computers had gained a considerable amount of importance in teaching and learning second/foreign languages by the 1990's (Iandoli, 1990). Some teachers were worried about losing their jobs with the rising prevalence of computers in education, however, computers proved to be helpful to teachers by supporting the teachers in the learning process rather than replacing their jobs (Cuban, 1986). As technology became more widespread and as technology became available to individuals, more sophisticated and interactive usage of computers in education emerged (Pusack & Otto, 1990). The opportunities that computers provided in language learning and teaching such as increasing students' language proficiency (Dunkel, 1990), interactive learning (Chun & Brandl, 1992), engaging in purposeful exchanges in computer mediated communication (CMC) (Salaberry, 1996), creating course materials (Motteram, 1990), teaching writing through word-processing software (Greenia, 1992), providing authentic communication environments via emails (Kroonenberg, 1994), using multimedia devices to enhance interaction (Hanson-Smith, 1999), exposure to authentic language items (Bacon & Finnemann, 1990) and the studies that focused on the advantages of CALL have been evaluated in studies conducted by Iandoli (1990); Liu, Moore, Graham and Lee (2002); Zhao (2003).

Increasing authenticity and enabling learners to access authentic content and environments have been a significant point of inquiry in CALL (Hanson-Smith, 1999; Bacon & Finnemann, 1990). As an example, Kitajima, R., & Lyman-Hager, M. A.

(1998) reported the advantages that video-based learning environments provide for language learning and teaching. Similarly, video-based learning environments were found to be significantly gainful in learning languages and developing cultural knowledge (Herron, Cole, Corrie & Dubreil, 1999). Similar findings were also put forward by Weyers (1999), who worked on the effects of video-based learning environments on learning and teaching a language. These learning environments were all highlighted thanks to their potential to provide students opportunities for getting exposed to the language, in accordance with the input hypothesis. (Krashen, 1985).

The possibility of creating communication opportunities for learners via CALL have been another crucial point of inquiry. Researchers such as Warschauer & Kern (2000) and Hanson-Smith, E. (1999) pointed out the importance of using computers to provide learners the chance to practice their communicative skills. Several ways to provide learners the opportunity to practice their communicative skills were put forward such as through speech recognition (Ehsani & Knodt, 1998), through animated environments and scenarios (Holland, Kaplan & Sabo, 1999) and the evaluation of language development in a computer setting (Alderson, 2000).

A further research interest in CALL has been the possibility of communication with other people over long distances. Pennington (1996), Beauvois (1997) and Cahill & Catanzaro (1997) pointed out the opportunities to conduct courses, support courses and promote communication online via CMC. In addition to this, Johnson (1999) highlighted the fact that CMC provided the audience that language learners needed to them.

2.2 Computer Games and Foreign Language Learning

As a result of the potential they have in terms of providing the above-mentioned opportunities such as increasing authenticity, enhancing communicative practice and enabling authentic communication over long distances by also creating entertaining

learning environments, computer games have been a research interest among many researchers studying second/foreign language learning and teaching.

Suits (1967) defines playing a game as an activity in which particular regulations are used in order to create a certain state of affairs. According to Kücklich (2003), computer games involve distinct features such as text, code, narrative and interactivity. Aarseth (2001) stated that especially multiplayer games merge the attractiveness and social features of the mass media.

In one of the oldest studies on the issue, Baltra (1990) put forward adventure games to help learners develop their communicative fluency and motivate them for learning languages. In a similar study, Hubbard (1991) pointed out the favorable outcomes of computer games in teaching languages and the increase in the use of computer games in foreign language classes. In another study, Jordan (1992) investigated how simulations can be utilized for language learning and evaluated the effectiveness of specific activities in terms of using simulations. The early studies, such as the ones mentioned in this paragraph, mostly investigated the effectiveness of computer games in foreign/second language learning in terms of developing fluency and motivation.

In the beginning of the 21st century serious games, games that focus on education rather than entertainment, were evaluated by researchers in terms of their effectiveness in foreign language learning (Johnson, Vilhjálmsson & Marsella, 2005). Wang and Seneff (2007) explored the outcomes of using a spoken-translation game used for language learning purposes and found out that all participants had a positive attitude towards using the game for foreign language development. In another study, Valente & Marchetti (2008) proposed a video game for providing children a bilingual language learning environment to help them grow up by learning languages simultaneously. Many other studies were conducted to investigate the process and the outcomes of developing computer games designed specifically for promoting language learning and teaching via gaming (Li & Topolewski, 2002; Neri, Cucchiarini & Strik, 2002; Giuliani, Mich & Nardon, 2003; Mich, Betta & Giuliani, 2004; Sorensen & Meyer, 2007; Ranalli, 2008).

On the other hand, the studies that explored the use of computer games were not limited to solely instructional games. Computer games that targeted entertainment as their first goal rather than education were also evaluated regarding their effectiveness in terms of promoting second/foreign language learning (Coleman, 1990; Taylor 1990; Coleman, 1995; Coleman, 2002; Anderson, Reynolds, Yeh & Huang, 2008; Chen & Huang, 2010).

2.3 Multiplayer Online Computer Games on Foreign Language Learning

There have been various studies that explored the use and the outcomes of multiplayer online computer games and their implications for learning foreign languages. This subsection involves information related to the methodologies, findings and implications of the studies that have investigated the effects of using multiplayer online computer games in an effort to improve target language knowledge and skills (see Table 1 for an overview of the studies).

Rankin et al. (2009) studied the effects of EverQuest® II (EQ2), a massively multiplayer online role-playing game (MMORPG), on target language vocabulary acquisition. The study had 12 Mandarin native-speaker college students who were advanced English as a second language students (ESL) as participants. The participants of the study were randomly divided into two groups: A group of participants played the game independently while the other group of participants played the game with native English speakers. They completed several quests and tasks and completed several assessments and they were assessed through a pre-test in which they were required to use vocabulary words in sentences and two post-tests in which they were asked to select the correct meaning from multiple choice options and complete a cloze assessment. The results indicated that participants who played the game with native English students performed better than participants who played the game independently.

In another study, Rankin, Morrison, McNeal, Gooch & Shute (2009) examined the characteristics of social interactions between players from different linguistic backgrounds and the effectiveness of teaching vocabulary through EQ2. The participants of the study were 18 advanced ESL students and 8 native English speakers. Within the course of the study six participants had three hours of classroom instruction, six participants played EQ2 for four hours and six participants were grouped with the native English speakers to play EQ2 for four hours. A pre-test was conducted to test the participants' familiarity with the target words of the study. The participants who received classroom instruction carried out drills and rote exercises while the participants who played EQ2 completed quests in the game to learn the vocabulary items. After the participation was completed, the participants received three post-tests: Demonstrating the meanings of the words in sentences, selecting the correct meaning from multiple choice questions related to game-based contextual scenarios and a cloze assessment based on contextual information related to gameplay features. The results of the study showed that the participants who received classroom instruction outperformed the participants who played EQ2 on sentence usage. The contextual vocabulary test scores indicated that the participants who played EQ2 with native English speakers outperformed the participants who played EQ2 and the participants who received classroom instruction. The participants who played EQ2 without native speakers and the participants who received classroom instruction scored similarly on this test. The researchers of the study developed ClockWerk©, an evaluation tool that analyzes the rate of occurrence and types of messages in accordance with a player's language competence, to identify resemblances and dissimilarities in communication patterns of players. The results revealed that the native speakers and the ESL learners developed a kind of master-apprentice relationship within the course of the study.

Peterson (2010) conducted an inquiry into the research on the use of massively multiplayer online role-playing games (MMORPGs) in foreign language teaching by examining the appearance and key features of MMORPGs and the theories put forward for game-based learning and by carrying out a critical analysis of three learner-based studies in the literature (Rankin, Gold, and Gooch (2006), Thorne (2008) and Rankin, Morrison, McNeal, Gooch, and Shute (2009)). Although the studies had limitations

such as small sample size and limited duration, he concluded that the findings of the studies involved important results such as effective participation, improved target language production output and increased practice of language skills, social interactions through cooperation and collaboration, increased motivation and fruitful vocabulary learning. The researcher called for carefully designed learner-based studies that would further investigate the possibilities that MMORPGs provide in foreign language development.

Suh et. al. (2010) investigated the effects of massively multiplayer online role playing game (MMORPG)-based instruction through Nori School, an educational MMORPG that involves games, quizzes, e-books etc. for learning English, on teaching English to elementary school students. The study involved 220 elementary school students. 118 students were taught English through Nori School while the other 102 students were taught English face-to-face. The researchers compared the effectiveness of the MMORPG with face to face English instruction by giving 40-minute lessons twice a week instead of the participants' regular lessons during the course of the study. The achievement of the participants in the two teaching programs were compared through a survey, English achievement test, motivation test, self-directed skill test, computer use ability test and game skill test. The results of the study indicated that students who were taught English through the MMORPG scored higher in reading, listening and writing than students who received face to face English instruction and prior achievement, motivation and network speed had the most influence on the effectiveness of MMORPG-based instruction.

In their study, Kongmee et. al., (2012) researched the experiences of students in terms of their foreign language learning and performance while playing MMORPGs. The researchers used ethnography and action research to investigate the language learning experiences of two L2 students. The participants of the study played GodsWar online, Hello Kitty Online, Perfect World International and Asda Story and carried out various tasks. A pre-test and a post-test which test English vocabulary, grammar and listening were used to test the effectiveness of the support of MMORPGs to second language learning. Interviews were conducted to examine the participants' language proficiency

and to learn about the participants' attitudes towards playing MMORPGs and practicing target language skills. The results of the study showed that the participants increased their confidence in using their second language through different communication techniques and that MMORPGs are helpful tools for supporting language learning by offering learners fun and safe learning environments.

Peterson (2012) conducted a sociocultural discourse analysis to understand the in-game linguistic and social interaction patterns of four intermediate EFL learners in a MMORPG and their attitudes towards taking part in MMORPG-based gaming. Following an orientation to the basic concepts, commands and communication aspects of the game, the participants played Wonderland, a free interactive game based on Japanese animation and manga themes, once a week for a month. The findings of the study suggested that MMMORPG-based interactions resulted in effectively-organized real-time and text-based instruction, improved sociolinguistic competence and appropriate and polite use of greetings. These outcomes promoted the interchange of personal information which was essential to sustain collaborative relationships. The results further indicated that the requests of participants were greeted by helpful assistance by other players and the scaffolding by other players resulted in an improvement in the participants' meaningful language output. The participants of the study mostly had positive attitudes towards learning in a MMORPG and they reported that text-based communication and avatar-based nature of the game improved the chances for risk-taking in practicing language skills through interesting and entertaining participation by also getting exposed to informal language registers which are mostly avoided in traditional language learning environments.

In a qualitative study; Rama et. al. (2012) investigated the conveniences provided by online gaming in second language learning by analyzing the game-play experiences of two college-level Spanish learners. One of the participants of the study was a beginner Spanish learner but an adept gamer while the other participant was an advanced Spanish learner but a beginner gamer. The participants of the study were asked to play World of Warcraft and they were recommended to play the game for five hours per week in a seven-week period. The participants met one of the researchers every two

weeks and semi-structured interviews were carried out during these meetings to get insights into the participants' game play experiences. Furthermore, one of the researchers gathered field-notes through participant-observations to get a hint of in-game interactions. The findings of the study revealed that the game-play experiences of the participants were advantageous for the participants' language learning and interaction opportunities and these advantages could further be improved through a more organized attitude towards massively multiplayer online games in foreign language learning.

Thorne et. al. (2012) enquired into the environment of second language practice and development in the popular massively online multiplayer game World of Warcraft. Both game-based and player-based texts were analyzed in terms of language features and complexity in the linguistic ecology of the game. The study was carried out with 32 Dutch and 32 American experienced gamer participants who had never played World of Warcraft to acquire a foreign language but had reported to have played on English realms. The results of the study indicated that the texts of the study were concentrated on due to the fact that they were of service to participants in terms of fulfilling in-game needs. The researchers of the article stated that World of Warcraft had a potential to offer a heterogeneous and linguistically complex language learning environment for learners of English.

By collecting data through a questionnaire, a language diary and proficiency tests from 86 ESL learners (39 boys and 47 girls aged 11-22), Sylvén and Sundqvist (2012) researched the effects of playing MMORPGs on learning second language. The questionnaire was used to collect background information from the participants and the language diaries were kept to learn about the extramural English activities of the participants such as reading books, newspapers and magazines, watching TV and films, surfing the Internet, playing computer games and listening to music and how much time they spent on these activities daily. The most popular games among the boys were Call of Duty, Counter Strike and World of Warcraft while the most popular games among the girls were The Sims, Restaurant City, and Zoo Tycoon. The participants of the study were divided into three groups: non-gamers, moderate-gamers

and frequent-gamers according to the information they provided on their language diaries. The vocabulary tests, which were divided into recognition and production parts, were used to compare the effectiveness of vocabulary learning in the three groups. Within the course of the study, the non-gamer participants didn't play any games while the moderate-gamer participants played computer games for one and a half hours every week and the frequent-gamer participants played computer games for five or more hours every week. The results of the study indicated that the frequent-gamers outperformed moderate-gamers and moderate gamers outperformed non-gamers. The researchers affirmed that computer gaming as an emerging learning context could provide opportunities for teachers and learners to improve teaching and learning English.

Zheng et. al. (2012) investigated the cooperation and language learning activities in World of Warcraft with participants from Turkey, China and Saudi Arabia. The researchers made use of multimodal analytic tools to reveal in-game language learning activities. The results of the study indicated a variety of communication activities that were hard to be achieved in a classroom and different patterns of values realizing among the participants. The study involved implications in terms of the patterns of learning environments and rethinking of technology-mediated environments as areas of language learning, participation and communication.

Lo and Kuo (2013) conducted an empirical research with parent-child groups of 20 to study the effects of VocaMono, an online multiplayer vocabulary learning game, on the vocabulary learning of EFL students at elementary school and the attitudes of parents and children towards the use of learning-based games. Half of the parent-child groups played the game with their own group while the other half played the game with other groups for 30-60 minutes. The researchers used a pre-test and a post-test to test the effectiveness of using VocaMono to learn vocabulary items. In addition, a questionnaire was used to learn about the attitudes of parents and children towards the use of VocaMono to improve vocabulary knowledge in terms of educational, game-based, societal and system-related aspects and interviews were carried out gather further feedback on the use of the game. The results of the study revealed that

VocaMono could enhance the vocabulary competence of the participants. Regarding all the aspects of the questionnaire and the interview, the students and the parents had positive attitudes. However, the students had higher ratings in terms of the educational, game-based and system related aspects than the parents. The interview responses indicated that online educational games could provide an environment for parents to help their children improve their academic knowledge and skills.

Presenting the data collected from 280 9th grade Swedish learners aged 15-16 following 3 years of data collection, Sundqvist (2013) introduced the Scale of Social Interaction (SSI) model, which suggests a three-step categorization of digital games as single player games, multiplayer games and massively multiplayer online games (MMOs), and presented the initiatory findings in terms of the corroboration of the model. The data was collected through a questionnaire that was designed to collect background information about the participants and vocabulary tests that were designed to test the vocabulary knowledge and usages of the participants. The results of the study indicated that multiplayer online games were more preferred compared to single player games. The results also revealed that participants who played MMOs performed better compared to participants who played single player games.

In a different study, Huang and Yang (2014) conducted a research study to investigate the effects of MMORPGs on incidental vocabulary acquisition of 52 fifth grade students by analyzing the effects of prior knowledge in terms of language proficiency and experience in gaming through a questionnaire, a pre-test post-test design and a conclusive interview. Prior to the application of pre-test and post-test, the participants of the study were asked to complete a gaming experience questionnaire to learn about the participants' average engagement in playing computer games. Then, the pre-test was carried out with the participants to learn about the familiarity of the participants regarding the target words of the study. In the application, the participants were exposed to 12 target words in the MMORPG through task dialogues and flashcards. The efficiency of the application was tested through the post-test. Finally, the interview was conducted to elicit information about the impressions of the participants in terms of the effectiveness of the application. The results of the study indicated that the

participants with medium-level gaming experience displayed an effective learning outcome regarding vocabulary with in-game requirement condition. On the other hand, the vocabulary in non-requirement condition within the gaming context were perceived by participants with higher English proficiency levels more effectively.

Using games such as Mogura-tataki, Dotai-Shiryoku, Shuffle, Karuta, E1-race, Shinkei-Suijjaku, Trolley, Dezome and Robogram which were parts of learning materials of a nation-wide English proficiency test; Butler, Someya and Fukuhara (2014) investigated the patterns of game-playing conduct and the link between game-playing and learning outcomes by examining the gaming behaviors and test-scores of 3945 children aged 4-12. It was found that the games that were played by an average child within the scope of the study shared similar characteristics such as being challenging, stimulating personal interest, providing player autonomy and involving multiple players in online environments. The games which involved features such as difficult tasks, mystery, management and multiple players were the most attractive to language learners. The results of the study implied that game-playing frequency decreased as the ages of the participants decreased. Only a few gender differences were found regarding the differences in participants' learning behaviors. The results of the study further suggested that the participants of the study scored better on mock exams when compared to the nation-wide proficiency test. This was partly because most of the target games aimed to teach vocabulary and basic expressions rather than teaching complex language usages and test-handling techniques. A complicated outcome was revealed in terms of the relationship between the attractiveness and the effectiveness of online games. Some games were quite attractive to learners but they weren't as effective as the ones which were not that attractive.

Focusing on the use of digital games in language learning especially with the dramatic increase in the use of multiplayer online games, Godwin-Jones (2014) pointed out recent developments and potential future routes in the use of digital games in language learning. The study states that digital games provide opportunities for language learners to improve their language knowledge and skills whether they are specifically designed for learning a language or not. The author mentions commercial computer

games such as *Doom, Grand Theft Auto and World of Warcraft* as digital games that could be utilized to foster language learning inside or outside the classroom by providing language learners opportunities to get exposed to vocabulary and grammar usages as well as creating chances for language learners to communicate in the target language.

Wu, Richards and Saw (2014) carried out a mixed-method study to analyze the utilization of *Everquest 2* as an alternating means for facilitating the communicative use of the target language. The study focused on the data collected from 19 casual gamers through interviews, survey questions and observations to investigate the effectiveness of in-game interactions in terms of developing communicative skills in the target language. The quantitative results of the study revealed that the participants gave primacy to the connectedness feature of the game to communicate in English. The qualitative results similarly pointed out the importance of in-game communicative interactions. The importance of player consciousness was highlighted in terms of enhancing the potential use of MMORPGs in computer assisted language learning.

In their exploratory case study, Zheng et. al. (2015) conducted an inquiry into the effects of a two-hour gameplay session of *World of Warcraft* on learning vocabulary in the target language. Within the research process, the two participants, a Japanese undergraduate student taking content level English courses and the second author of the study, who is a native English speaker, completed twelve quests and took part in twenty-four communicative activities through in-game interactions and instantaneous exchanges via *Skype*. The results of the study suggested that the in-game interactions lead to the learning of English words distinct to the game getting as well as fostering the students' ability of languaging through the help of the more competent in-game companion. The results of the study further indicated that vocabulary acquisition became obvious with the help of the analysis of the in-game exchanges and actions through multimodal analysis. However, it was stated that the effectiveness of the languaging process through in-game communicative interactions might be affected by the low proficiency levels of gamers.

Goh (2016) implemented an exploratory case study to examine the utilization of *Cube World,* an interactive open-world MMORPG similar to *Minecraft*, in terms of practicing English. The study was carried out with four male and six female Japanese university students aged 19-25. Thanks to its discovery-based nature, the game made it possible for participants to investigate and uncover the in-game features through communicative and collaborative exchanges. These exchanges proved to be advantageous for the participants in terms of practicing in the target language. The participants of the study considered practicing target language via Cube World as entertaining, useful and motivating. As a result of this, it was concluded that MMORPGs give language learners opportunities to interact with other language learners and create a language learning environment through discovering game features and completing tasks cooperatively.

Newgarden and Zheng (2016) undertook a study to enquire into the language learning activities of four university-level ESL students while interacting verbally and non-verbally with each other and with three native English speakers; the course-instructor, one of the authors and another undergraduate student in by playing *World of Warcraft* via analyzing the transcriptions of game-records through open coding. The participants acquired and practiced language usages such as asking questions, devising further actions, learning in-game skills, wandering around etc. through interactions with each other and with the native speakers of the group. The Common European Framework of Reference (CEFR) was utilized as a means of reference in terms of speaking proficiency development of the participants. The participants of the study communicated with each other about both game related activities to achieve certain targets and non-game issues. As a result of the study, it was concluded that *WoW* created an authentic language learning environment in which the ESL learners could communicate and interact with non-native and native English speakers by completing meaningful tasks. In addition to this, the in-game communicative activities expedited students' learning outcomes according to official language proficiency references.

Table 1: Summary of the reviewed studies done on multiplayer online computer games and EFL

Author/s	Research Topic	Method	Game	Participants	Major Findings
Rankin, Morrison & Shute (2009)	The effects of a MMORPG on target language vocabulary acquisition	A pre-test and two post-tests on learning target vocabulary items	EverQuest® II	12 Mandarin native-speaker college EFL students	Participants who played the game with native English students performed better than participants who played the game independently.
Rankin, Morrison, McNeal, Gooch & Shute (2009)	Characteristics of social interactions between players from different linguistic backgrounds and the effectiveness of teaching vocabulary through a MMORPG	A pre-test and three post-tests on vocabulary and an analysis of rate of occurrence through ClockWerk©	EverQuest® II	18 advanced ESL students and eight native English speakers	The participants who played EQ2 with native English speakers outperformed the participants who played EQ2 independently and the participants who received classroom interaction. The native speakers and the ESL learners developed a kind of master-apprentice relationship within the course of the study.

Table 1: Summary of the reviewed studies done on multiplayer online computer games and EFL (*Continued*)

Author/s	Research Topic	Method	Game	Participants	Major Findings
Peterson (2010)	The use of (MMORPGs) in foreign language teaching	Examining the appearance and key features of MMORPGs and the theories put forward for game-based learning a critical analysis of three learner-based studies.	-	-	Effective participation, improved target language production output and increased practice of language skills, social interactions through cooperation and collaboration, increased motivation and fruitful vocabulary learning.
Suh, Kim & Kim (2010)	The effects of MMORPG-based instruction on teaching English to elementary school students	Comparison of MMORPG-based and face-to-face instruction through a survey, achievement test, motivation test, self-directed skill test, computer use ability test and game skill test.	Nori School	220 elementary school students	The students taught through the MMORPG scored higher in reading, listening and writing than students who received face to face English instruction and prior achievement, motivation and network speed had the most influence on the effectiveness of MMORPG-based instruction.

Table 1: Summary of the reviewed studies done on multiplayer online computer games and EFL (*Continued*)

Author/s	Research Topic	Method	Game	Participants	Major Findings
Kongmee, Strachan, Pickard & Montgom ery (2012)	The experiences of students in terms of foreign language learning and performance while playing MMORPGs	The use of ethnography and action research to investigate the language learning experiences in MMORPGs through interviews, a pre-test and a post-test to test vocabulary, grammar and listening	GodsWar, Hello Kitty, Perfect World Internatio nal and Asda Story	Two L2 learners at a university	The participants increased their confidence in using their second language through different communication techniques and MMORPGs are helpful tools for supporting language learning by offering learners fun and safe learning environments.
Peterson (2012)	Linguistic and social interaction patterns and the attitudes towards playing MMORPGs	Sociocultural discourse analysis during a gameplay period of once a week for a month	Wonderla nd	Four intermediate EFL learners	MMMORPG-based interactions resulted in effectively-organized real-time and text-based instruction, improved sociolinguistic competence and positive attitudes towards learning in practicing language skills.

Table 1: Summary of the reviewed studies done on multiplayer online computer games and EFL (*Continued*)

Author/s	Research Topic	Method	Game	Participants	Major Findings
Rama, Black, van Es & Warschauer (2012)	The conveniences provided by online gaming in second language learning	Semi-structured interviews and field-notes through participant-observations during and following a gameplay period of five hours per week in a seven-week period	World of Warcraft	Two college-level Spanish learners	The game-play experiences were advantageous for the participants' language learning and interaction opportunities and these advantages could further be improved through a more organized attitude towards massively multiplayer online games in foreign language learning.
Thorne, Fischer & Lu (2012)	Second language practice and development in massively online multiplayer games	The analysis of game-based and player-based texts in terms of language features and complexity	World of Warcraft	32 Dutch and 32 American experienced gamers	The texts were concentrated on due to the fact that they were of service to participants in terms of fulfilling in-game needs in a heterogeneous and linguistically complex language learning environment.

Table 1: Summary of the reviewed studies done on multiplayer online computer games and EFL (*Continued*)

Author/s	Research Topic	Method	Game	Participants	Major Findings
Sylvén & Sundqvist (2012)	The effects of playing MMORPGs on learning second language	Data collection through a questionnaire, a language diary and proficiency tests	Call of Duty, Counter Strike, World of Warcraft The Sims, Restaurant City, Zoo Tycoon	86 ESL learners (39 boys and 47 girls aged 11-22)	In the study, frequent-gamers outperformed moderate-gamers and moderate gamers outperformed non-gamers on the vocabulary tests and it was stated that computer gaming as an emerging learning context could provide opportunities for teachers and learners to improve teaching and learning English.
Zheng, Newgarden & Young (2012)	The cooperation and language learning activities in MMORPGs	The use of multimodal analytic tools to reveal in-game language learning activities.	World of Warcraft	EFL learners from China, Turkey and Saudi Arabia	Communication activities that were hard to be achieved in a classroom were provided by the gaming environment and different patterns of values realizing was experienced by the participants.

Table 1: Summary of the reviewed studies done on multiplayer online computer games and EFL (*Continued*)

Author/s	Research Topic	Method	Game	Participants	Major Findings
Lo & Kuo (2013)	The effects of an online multiplayer educational game on the vocabulary learning and the attitudes of parents and children towards the use of learning-based games	An empirical research that uses a pre-test, a post-test, questionnaire and an interview	VocaMono	Parent-child groups of 20	VocaMono enhanced the vocabulary competence of the participants and the students and the parents had positive attitudes towards the use of the game. The participants felt that educational games could provide an environment for parents to help their children improve their academic knowledge and skills.
Sundqvist (2013)	The introduction of the Scale of Social Interaction (SSI) model.	Data collection through a background information questionnaire and vocabulary tests.		280 9th grade Swedish learners aged 15-16	Multiplayer online games were more preferred compared to single player games and better learning outcomes for multiplayer game players.

Table 1: Summary of the reviewed studies done on multiplayer online computer games and EFL (*Continued*)

Author/s	Research Topic	Method	Game	Participants	Major Findings
Huang & Yang (2014)	Analyzing the effects of prior knowledge in terms of language proficiency and experience in gaming	Using a background questionnaire, a pre-test post-test design and a conclusive interview	A textbook adapted educational MMORPG related to a Chinese legend	52 fifth grade students	Medium-level gaming experience resulted in an effective vocabulary learning outcome. The vocabulary in non-requirement condition were perceived more effectively by high proficiency participants.
Butler, Someya & Fukuhara (2014)	The forms of game-playing and the relationship between game-playing and learning outcomes	Examination of gaming behaviors and test scores.	Mogura-tataki, Dotai-Shiryoku, Shuffle, Karuta, E1-race, Shinkei-Suijjaku, Trolley, Dezome and Robogram	Children aged 4-12	Participants scored better on mock exams compared to the nation-wide proficiency test due to the teaching focus of the target games. In addition, attractive games weren't as effective as the non-attractive ones.

Table 1: Summary of the reviewed studies done on multiplayer online computer games and EFL (*Continued*)

Author/s	Research Topic	Method	Game	Participants	Major Findings
Godwin-Jones (2014)	Current developments and possible future directions in the utilization of digital games in language learning	Investigating recent developments with an aim to draw conclusions for future research studies	-	-	The study states that computer games can help language learners improve their language knowledge and skills via being exposed to target language usages whether they are specifically designed for language learning or not.
Wu, Richards & Saw (2014)	The use of *MMORPGs* in order to increase the communicative use of the target language.	Data collection through interviews, survey questions and observations.	EverQuest ® II	19 casual gamers	The results pointed out that the participants gave primacy to the connectedness, the importance of in-game communicative interactions and the importance of player consciousness.

Table 1: Summary of the reviewed studies done on multiplayer online computer games and EFL (*Continued*)

Author/s	Research Topic	Method	Game	Participants	Major Findings
Zheng, Bischoff & Gilliland (2015)	The effects of a two-hour gameplay session of an MMORPG on target language vocabulary acquisition.	Exploratory case study.	World of Warcraft	A Japanese undergrad student and a native English speaker.	The findings uncovered vocabulary learning outcomes, languaging, an improvement in vocabulary acquisition through multimodal analysis and a possibility of negative effects of low proficiency on language learning.
Goh (2016)	The utilization of an interactive open-world MMORPG to practice English.	Exploratory case study.	Cube World	Four male and six female Japanese students between the ages of 19-25.	The findings revealed the investigation of the in-game features through communicative and collaborative exchanges and opportunities to interact with other language learners in a creative and motivating environment.

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Table 1: Summary of the reviewed studies done on multiplayer online computer games and EFL (*Continued*)

Author/s	Research Topic	Method	Game	Participants	Major Findings
Newgarden & Zheng (2016)	The language learning activities of ESL students at university via interacting verbally and non-verbally with each other.	Open-coding analysis of gaming records in order to reveal languaging activities.	World of Warcraft	Four university-level ESL learners	The MMORPG created an authentic language learning environment and the in-game communicative activities facilitated students' learning outcomes according to official references of language proficiency.

The exploration of the studies done on the effects of multiplayer online computer games and EFL revealed that multiplayer online computer games provide positive outcomes for target language knowledge and skills development. On the other hand, there are some points to be taken into consideration such as the insufficiency of studies that investigate the effects of multiplayer online computer games on the development of target language skills as a whole. Multiplayer online computer games and their effects on target language skills development need to be investigated holistically in order to reach a conclusion on their effects in terms of target language proficiency development. Furthermore, standardized international proficiency exams should be carried out to increase the validity and reliability of the findings related to the effects of multiplayer online computer games on foreign language learning. In addition to these points, potential harms of multiplayer online computer games need to be paid attention in these studies in order to put an effort to prevent any potential negative outcomes.

CHAPTER 3

METHODOLOGY

3.1 Research Design

The goal of the present study was to investigate the effects of multiplayer online gaming on the foreign language skills development of EFL learners and the opinions of EFL learners towards the use of multiplayer online computer games under the control and the guidance of a language teacher, who was the researcher in this specific instance. In order to find out about this, the study employed a sequential mixed methods design in which quantitative and qualitative data were collected respectively. Johnson, Onwuegbuzie and Turner (2007) describe the mixed methods design as a research method in which the researcher blends the features of quantitative and qualitative data collection, analysis, inference techniques on the purpose of achieving both breadth and depth understanding of a specific issue. Creswell (2003) defines sequential mixed methods as using one method to in an effort to provide further information regarding another method. Mixed methods design was chosen as the methodology of the present study on the grounds that it makes it possible for a researcher to provide further information and interpretation of quantitative findings via qualitative data collection and analysis techniques. The study implemented two proficiency exams, one as a pre-test and one as a post-test, and a semi-structured interview.

In order to collect the quantitative data to find out about the statistical changes in the proficiency levels of the participants as a result of the gaming period, two sample Cambridge Preliminary English Tests (PET) were used. Cambridge PET targets the

B1 level by also providing English proficiency data for A2 and B2 levels. The test was found suitable for the study considering the fact that all participants in the study had completed at least an A2 level instruction in their undergraduate EFL courses and most participants had taken further EFL courses at B1 level. The permission of Cambridge English Assessment was asked and received to use two sample PET tests and their evaluation rubrics. One of these tests was used as a pre-test to find out about the background English proficiency levels of the participants prior to the study and the other was used as a post-test to understand whether a statistically significant target language skills development happened as a result of the gaming period. The results of the pre-test and the post-test scores were analyzed through repeated-measures ANOVA.

In an effort to reveal the perceptions of the participants regarding the effectiveness of the gaming period, a semi-structured interview was carried out with each participant following the ending of the gaming period. In this interview, the participants were asked to share their opinions in terms of the general effectiveness of the gaming period from the point of developing target language skills, the effectiveness of the guidance and control of the researcher, who is an English teacher, the outcomes of the upper limit of playing hours that was designated at the beginning of the study in terms of preventing negative outcomes, the changes from the pre-test scores to the post-test scores and the effects of the gaming period on any potential differences between the scores on the two tests and additional opinions they wanted to share. These interviews were later transcribed and analyzed via open coding and thematic analysis considering the guidelines by Braun and Clarke (2006).

3.2 Research Questions

The present research study employed the research questions below:

1. Does multiplayer online computer gaming for developing EFL skills result in a significant overall development of target language skills?

2. Does multiplayer online computer gaming for developing EFL skills result in a significant development of target language skills based on:

a. Reading?

b. Writing?

c. Listening?

d. Speaking?

3. What are the opinions of language learners towards playing multiplayer online computer games for developing EFL skills?

3.3 Setting and Participants

The present study was carried out at the school of foreign languages of a private university in Konya, Turkey considering the convenience of conducting the study for the researcher. The school of foreign languages provides English courses at preparatory level before students begin their B.A education and departmental English courses such as general English and technical English courses to students at B.A education. The preparatory English education covers A1 level to B2 level intensive English courses in which the participants only receive education in English. The general English courses and the technical English courses at departmental level covers two-hour classes per week to provide learners basic general English knowledge and technical English terms related to the students' departments.

The participants of the study were selected according to voluntary sampling. The students who had taken English courses at the university were informed about the study via email. The students who were interested in participating in the study were asked to contact the researcher in order to learn about the details of the study. The participants who agreed to participate in the study were given a consent form informing the participants that participation in the study was totally on a voluntary basis, their data would be kept confidential, they could stop taking part in the study whenever they wanted and they could contact the researcher or the advisor in any part of the study about any issue (see Appendix A: Informed Consent Form).

The participants of the study were 13 students (10 male and three female) at different departments (see Table 2 for an overview of the participants' demographic information). The departments of the participants include electrical and electronic engineering (N=1), faculty of law (N=1), sociology (N=1), international trade (N=3), mechatronics engineering (N=1), nursing (N=2), audiology (N=1), child development (N=1), logistics management (N=1) and communication (N=1). Only one participant (the participant studying electrical and electronic engineering) was studying at the preparatory school. The other participants were studying towards receiving their B.A degrees at different grades from freshman year to senior year. The participants were aged between 19-24. According to the results of the PET pre-test that were converted to the Cambridge English Scale, 12 participants had A2 level, one participant had B1 level and one participant had below-A2 level general proficiency in English prior to the gaming period.

Table 2: Overview of participants' demographic information

Participants	Gender	Age	Department	Proficiency
Participant 1	Male	19	Electric Electronic Engineering	A2
Participant 2	Male	24	Communication	A2
Participant 3	Female	19	Nursing	Below A2
Participant 4	Male	20	Logistics Management	A2
Participant 5	Male	19	Faculty of Law	A2
Participant 6	Male	21	International Trade	A2
Participant 7	Female	19	Nursing	A2
Participant 8	Male	20	Sociology	A2
Participant 9	Male	21	International Trade	A2
Participant 10	Male	22	Audiology	A2
Participant 11	Female	20	Child Development	A2
Participant 12	Male	20	International Trade	A2
Participant 13	Male	21	Mechatronics Engineering	B1

Following the demographic information collection, further information was gathered from the participants regarding their gaming background and preferences via one-on-one interviews (see Table 3 for an overview of the information related to the gaming backgrounds and the gaming preferences of the participants). The participants had an average regular gaming time of 8,4 hours per week on average prior to the study. Following the consideration of the findings of Van Rooij, Schoenmakers, Vermulst, Van Den Eijnden and Van De Mheen (2011) for each participant's gaming hours, it was decided that the weekly hours that the participants spent on online gaming was not in the category of heavy online gaming or addicted heavy online gaming. Thus, the participants kept their normal gaming routine during the course of the study in order not to cast a doubt on the authenticity and the extensive nature of the gaming period. The participants of the study chose the multiplayer computer games that they were going to play in order to develop target language skills as part of this study among the multiplayer online computer games that they already played on a regular basis provided that the computer game fulfilled the conditions of being multiplayer-online and that the computer game and its content were appropriate for their ages. The participants were not restricted in terms of the number of computer games they chose to play. Only three participants chose to play two computer games instead of one. Five participants played Counter-Strike Global Offensive (CS:GO), five participants played RuneScape, four participants played League of Legends (LoL), one participant played Player Unknown's Battlegrounds (PubG) and one participant played Seafight.

Table 3: Overview of information related to the gaming habits and the computer games that the participants chose

Participants	Weekly gaming hours	Selected computer games
Participant 1	13 hours	CS:GO
Participant 2	10 hours	LoL
Participant 3	4 hours	RuneScape
Participant 4	10 hours	LoL, CS:GO
Participant 5	7 hours	Seafight
Participant 6	8 hours	RuneScape

Table 3: Overview of information related to the gaming habits and the computer games that the participants chose *(Continued)*

Participants	Weekly gaming hours	Selected computer games
Participant 7	6 hours	RuneScape
Participant 8	8 hours	CS:GO, LoL
Participant 9	11 hours	CS:GO
Participant 10	5 hours	RuneScape
Participant 11	5 hours	RuneScape
Participant 12	8 hours	CS:GO, PubG
Participant 13	15 hours	LoL

3.4 Data Collection

3.4.1 Data Collection Instruments

In order to accomplish the objectives of the study, three data collections instruments were used. These include two proficiency tests and a post-study interview. The proficiency tests were sample Cambridge PETs which were used before and after the gaming period with the intention to find out about the statistical changes in the proficiency levels of the participants before and after the gaming period. The proficiency tests involved questions and tasks that evaluate the reading, listening, writing and speaking performances of the participants. These proficiency tests, their answer keys and evaluation rubrics were used within the scope of this study with the permission of Cambridge English Assessment. The interview had a semi-structured design and it was carried out to find out about the opinions of the participants regarding the effectiveness of the gaming period.

3.4.1.1 Pre-Test and Post-Test

In order to gather quantitative data regarding the background proficiency levels and the statistical changes in the proficiency levels of the participants, two sample

Cambridge Preliminary English Tests was used as the pre-test and the post-test of the study with the permission of Cambridge English Assessment (accessible at http://www.cambridgeenglish.org/exams-and-tests/preliminary-for-schools/preparation/).

There were several reasons as to why Cambridge PET was used in this study. Firstly, PET tests the English proficiency level of English learners by targeting the B1 level and the test also provide proficiency information at A2 and B1 level. The target proficiency level of PET was considered suitable for the study considering the fact that all participants had completed at least an A2 pre-intermediate level English course. Secondly, PET provides an overall analysis of the target language competence of language learners by evaluating reading, listening, writing and speaking performances into consideration. PET was used in this study to investigate the effectiveness of multiplayer online computer games on the overall development of target language skills. Finally, PET is an internationally recognized standardized proficiency test. As stated earlier, there is a tendency in the literature to evaluate the statistical effectiveness of computer games in terms of developing target language and skills through data collection instruments such as self-developed grammar, vocabulary, reading, listening, writing and speaking tests. In this study, PET was used with the objective to increase the validity of target language proficiency level evaluation so as to analyze the effects of using computer games for learning and teaching second/foreign languages more effectively. Taking these points into consideration, it was decided that Cambridge PET was suitable for the present research study (see Table 4 for a brief overview of Cambridge PET).

Table 4: Overview of Cambridge PET

Test	Part	Question Type	Number of Questions
Reading	1	Finding what a short-text says.	5
	2	Matching the most suitable activity with a person.	5
	3	Answering true false questions according to a reading passage.	10
	4	Answering multiple choice questions according to a reading passage.	5
	5	Choosing the correct word for spaces in a cloze-test.	10
Writing	1	Sentence completion.	5
	2	Writing a short message.	1
	3	Writing a letter or a story.	
Listening	1	Choosing the correct picture for each short recording.	7
	2	Choosing the correct option by listening to an interview.	6
	3	Filling the blanks by listening to a radio announcement.	6
	4	Answering true-false questions by listening to a conversation.	6
Speaking	1	General questions	5
	2	Picture Description	1

3.4.1.1.1 Reading Test

The reading test included a total of five parts and 35 questions. The first part of the reading test contained five questions with three multiple choice answers. The participants were asked to choose the most relevant option according to a 10-30-word message, note or announcement. The second part of the test involved a five-question matching task. The task provided learners information related to the preferences of

five people and activities provided by eight different places then asked test-takers to choose the most suitable place for these five people according to their preferences among these eight places. The third part of the reading test was a 10-question true-false task. The participants were asked to read a passage that involved 440-460 words and answer 10 true-false questions related to this passage. The fourth part of the reading test included a 280-290-word reading passage and 5 questions with four multiple choice answers. The participants were asked the read the passage and choose the correct option according to the passage. The final part of the reading test was a cloze-test. The participants were asked to read a 140-160 word reading text and complete the missing vocabulary and grammar items by answering 10 questions choosing among four multiple choice options.

Due to the fact that the answers only involved choosing among specific options and no personal evaluation, the marking of the reading test was carried out by the researcher through the answer key. Each question in the reading section was worth 1 points. The test was first marked out of 35 and then was weighted to 100 points to be analyzed in the present study. In addition, the scores were also transformed into the Cambridge Scale in order to determine the proficiency levels of the participants via Cambridge Scale converter (accessible at http://www.cambridgeenglish.org/images/210434-converting-practice-test-scores-to-cambridge-english-scale-scores.pdf).

3.4.1.1.2 Writing Test

The writing test consisted of three parts. The first part of the writing test involved five questions in which the participants were asked to complete each sentence by using at most three words in order to make them have the same meaning with a given sentence. The second part of the writing activity included one task. The participants were given a situation and they were asked to write a note or an email to express the given situation by using 35-45 words. The final part of the writing test included two optional writing tasks among which the participants were asked to choose one. One of these tasks

required the participants to read an email or a message from a friend and write a response by using about 100 words. In the other task, the participants were required to write a story by using about 100 words. The participants were given the title or the beginning sentence of the study and complete the rest.

The evaluation of the writing tests was carried out by two English instructors working at the testing and assessment department of the institution in which the study was carried out. In order to evaluate the first and the second part of the writing tasks, the answer key was used. Each question in the first part of the writing test was worth one point and the task as a whole was worth five points. Similar to the first part of the test, the second part of the writing test was also scored out of five points. The writing performances of the participants on the third part of the writing test were evaluated according to the Cambridge PET B1 level writing assessment scale out of 20 (accessible at http://www.cambridgeenglish.org/images/231794-cambridge-english-assessing-writing-performance-at-level-b1.pdf). This scale was used to evaluate the writing performances of the test-takers in terms of content, communicative achievement, organization and language. Each criterion was scored out of five with zero being the lowest band score and five being the highest band score. The content criterion was used to examine the effectiveness of the content regarding the relevancy to the task and the level of information provided. The communicative achievement criterion was utilized to analyze the successfulness of the writing performance from the point of conveying the ideas. The organization criterion was implemented to observe the efficacy of the writing performance in terms of coherency and the efficacy of the organization by using linking words and cohesive devices. The language criterion was employed to evaluate the successfulness of the writing performance in terms of using the language effectively by using a range of vocabulary and grammar items and conveying the meaning by using these language structures appropriately. The two final scores given by the two instructors were added up and divided by two to get the overall writing scores and then weighted to 15 to gain the final scores of the participants on the third task of the test. The scores of the participants on the three parts of the writing test were added up to score the writing performance of the

participants out of 25. The overall scores of the participants were then weighted to 100 to be investigated within the scope of this study. The final scores were further calculated on the Cambridge Scale with the intent of gaining a deeper insight regarding the writing proficiency levels of the participants.

3.4.1.1.3 Listening Test

The listening test was compromised of four parts and a total of 25 questions. The first part of the listening test involved seven short recordings and seven questions with three multiple choice answers that involved three pictures. The participants of the study were asked to listen the short recordings and choose the correct picture that described the recordings. The second part of the listening test contained a recording of a person talking about his/her job and six questions with three multiple choice answers. The participants of the study were asked to listen the person and choose the correct answer out of three multiple choice items. The third part of the listening test comprised a radio announcement about a store and six fill-in-the-blanks questions. The participants of the study were asked to listen the announcement and fill in the missing parts of the information such as services provided, prices and contact information. The final part of the listening test included a recording in which two people were talking about house chores and six true false questions. The participants of the study were asked to listen to the conversation and choose true or false on these six questions.

The evaluation of the listening test was carried out via the answer key. Each correct answer on the listening test was worth one points and the test had an overall score of 25 points. The scores of the participants on the listening test were evaluated out of 25 and then were weighted to 100 to be analyzed within the context of this study. Additionally, the scores of the participants were also calculated on the Cambridge Scale in order to reveal a further understating of the listening proficiency levels of the participants.

3.4.1.1.4 Speaking Test

The speaking test included two speaking parts. In the first part the participants were asked general questions such as identification information, questions related to English courses and studying English, free time activities, activities that were done yesterday, activity plans for tomorrow. In the second part of the speaking test, the participants were asked to look at a picture and describe it. The PET test involves two more speaking tasks, however, due to the fact that these speaking parts require two participants to talk to each other and owing to the fact that the participants of the study took the speaking test individually on different dates, these speaking parts weren't included in the data collection process of the present study. The speaking tests were conducted by the researcher and recorded.

The speaking performances of the participants were evaluated by two different English instructors working at the testing and evaluation department of the school of foreign languages of the institution in which the study was carried out according to the Cambridge Assessment PET B1 level speaking evaluation rubric (accessible at http://www.cambridgeenglish.org/images/168618-assessing-speaking-performance-at-level-b1.pdf) via speaking pre-test and post-test recordings. The speaking performances of the participants were evaluated in terms of grammar and vocabulary, discourse management, pronunciation and interactive communication. The grammar and vocabulary criterion was used to assess the speaking performances of the participants regarding the effective use of grammar structures and a range of appropriate vocabulary items. The discourse management criterion was utilized to analyze the speaking performances of the participants with regard to the extent of language stretches, relevant speech connections and the use of cohesive devices. The pronunciation criterion was used to evaluate the speaking performances of the participants with respect to intelligibility of pronunciations, intonation, stress and articulation of sounds. Each of these criteria was scored out of five and the speaking performances of the participants were scored out of 20. In addition to these criteria, the evaluators also gave an extra grade for the participants' global achievement out of

10. The two scores given by the two instructors were added up and divided by two to get the overall speaking scores of the participants. The overall speaking scores of the participants were then weighted to 100 to be analyzed in the present study. The scores of the participants were also calculated on the Cambridge Scale to gain a further understanding on the speaking proficiency levels of the participants before and after the study.

3.4.1.1.5 Validity and Reliability of the Tests

The construct related aspects of validity of the Cambridge tests are based on the models of communicative language ability by Canale and Swain (1980) and Bachman (1990) and the specifications of the Council of Europe in the Common European Framework of Reference (2001). According to these, the target language proficiency of a language learner is evaluated by assessing the communicative ability of the learner skills and subskills and the reading, listening, writing and speaking skills of the participants are tested accordingly. In addition to the construct related aspects, cognitive and context related aspects of the reliability are also taken into consideration by providing language learners real-world contexts and cognitive processes.

Criterion-based reliability and scoring-related aspects of reliability are also taken into consideration in detail in these tests. The evaluation scales are developed based on the studies of Lim (2012) and Galaczi, ffrench, Hubbard & Green (2011). Cambridge English employs systems such as pretesting. In this system, the questions that are planned to be asked are tried on learners that preparing for a specific test and the questions are also tried on anchor tests, which are used to optimize the difficulty of items in a particular test. The way the tests are marked are standardized to prevent any minimize the effects of errors.

The marking and the evaluation of the tests were carried out according to the answer keys and rubrics of Cambridge English PET. The evaluators that assessed the performances of the participants on the writing and speaking tests were chosen

considering their degrees, certifications and the departments they were working at. Both evaluators were experienced English instructors working at the Testing and Evaluation Department of the School of Foreign Languages, in which the study was carried out. In order to confirm inter rater reliability, the scores of the evaluators on the writing tests and the speaking tests were analyzed via Pearson's Correlation Coefficient. The results of the analysis revealed that there were significant positive correlations between the scores of the evaluators on the pre-test writing ($r = ,967$, $p < ,0001$), pre-test speaking ($r = ,919$, $p < ,0001$), post-test writing ($r = ,983$, $p < ,0001$), and post-test speaking ($r = ,877$, $p < ,0001$) sections.

More information related to the validity and reliability of Cambridge English tests are available at the Principles of Good Practice booklet on Cambridge English website (accessible at http://www.cambridgeenglish.org/images/22695-principles-of-good-practice.pdf).

3.4.1.2 Interview

In an effort to understand the opinions of the participants towards the multiplayer online gaming and foreign language skills development period, a semi-structured interview was carried out. This interview was conducted in Turkish in order to provide the participants an opportunity to express their ideas more effectively in their native language. The interview investigated the general opinions of the participants regarding the period in which they played multiplayer online computer games with the intent of developing target language skills, the effectiveness of the suggestions by the researchers in terms of increasing the development of target language knowledge and skills, the effectiveness of the upper limit on the weekly gaming hours in terms of preventing possible addiction symptoms from happening, the anticipation of any statistical difference between the pre-test and the post-test and the anticipation of the target language skill that they expected the most to improve and any other ideas they wanted to share. The interview included further follow-up questions in the event that they were needed. The interviews were recorded via a voice recorder. Then they were

transcribed in Turkish and translated to English by the researcher. The opinion of an expert translator was received in terms of the appropriateness of the translations of the interviews.

3.4.2 Computer Games

3.4.2.1 Selection Criteria for Computer Games

The participants of the study chose the computer games that they played within the gaming period of this study among the games that they had already been playing according to some specific criteria. The first of these criteria was having online gaming feature. Online gaming provides players to play games and interact with anyone in the world. Therefore, they provide learners an authentic English learning environment in which they can interact with native English speakers and speakers of other languages to practice their English skills. The second of these criteria for the selection of computer games was possessing multiplayer gaming feature. Some online computer games have single player gaming features. They provide players the opportunity to learn English via in-game texts and records but they don't provide learners the opportunity to interact with other players. For this reason, in order to provide learners an English learning environment in which they can both interact with in-game content and with other players, multiplayer gaming feature was required in addition to the online gaming feature. Another criterion was the suitability of the computer game that the participants selected. The computer games that the participants selected were evaluated in terms of minimum age limit, content and appropriateness. Due to the fact that the participants were all majors, no problems were encountered regarding the age limit and the appropriateness of the content of the computer games.

3.4.2.2 Selected Computer Games

3.4.2.2.1 Counter-Strike Global Offensive (CS:GO)

CS:GO is an online first-person shooter (FPS) game by Valve Corporation ("About Counter Strike", n.d.). The game has a total player number of 38,961,917 ("Counter-Strike: Global Offensive", (n.d.). In CS:GO, players play with teams of five to eight to win a game of 16 rounds to 30 rounds. The game provides players the opportunity to interact with other players via writing messages or via speaking through a microphone. The game also makes it possible for players to be exposed to language structures via reading texts such as quotes and suggestions that are displayed in the interface or while loading the game. As a result of the fact that it provides written and spoken content in the interface and opportunities to practice reading and writing skills via reading the text messages of other players and responding and listening and speaking skills via communicating with other players through a microphone. Owing to the fact that CS:GO is a round-based game in which one game can last as short as 10 minutes, the participants who played CS:GO were advised to keep communicating with their friends on the interface and on the lobby of the game in addition to communicating with them during the game in an effort to create more opportunities to practice language skills. In addition to this, these participants were also advised to read and listen the news and announcements on the interface of the game in order to increase the development of reading and listening skills.

3.4.2.2.2 League of Legends (LoL)

LoL is a multiplayer online battle arena (MOBA) game that blends the features of real time strategy (RTS) and role-playing game (RPG ("What is League of Legends?", n.d.). The game has a daily player number of 27 million and a monthly player number of 67 million (Tassi, 2014). In classical LoL game modes, players play with teams of three players to five players to defeat the rival team that has the same number of players. LoL grants players the opportunity to get exposed to language structures via in-game content such as news, information, stories about characters and suggestions

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for better gaming experience. The participants can read and listen to these in-game content to improve their reading and listening skills. In addition to this, LoL also grants players the opportunity to interact with other players via written messages in the interface, in the game lobby and during the game. Therefore, it gives learners the chance to practice their reading, listening and writing skills on the game interface and it enables players to practice their reading and writing skills via communicating with other peoples during the game. On the other hand, LoL doesn't support spoken communication features via a microphone and as a result, it normally doesn't enable EFL learners to practice their speaking skills during the game. So, it was recommended for the participants who played LoL to use a spoken communication program on the game interface, in the game lobby and during the game with their team members to practice their speaking skills.

3.4.2.2.3 PlayerUnknown's Battlegrounds (PubG)

PubG is an online FPS survival game by PubG Corporation with solo and multiplayer modes ("Playerunkown's Battlegrounds Overview", n.d.). It has 32,437,525 total players worldwide ("Playerunknown's Battlegrounds", n.d.). In PubG players can play with teams of four against other teams to survive in the game map which becomes smaller over time. Due to the fact that it is a FPS game with time limits on rounds, PubG is limited in terms of providing EFL learners constant exposure to language structures. However, the game provides players the opportunity to chat via a microphone. On account of the fact that microphone communication is the only way to communicate with team players in the game, PubG provides learners a continuous speaking practice environment. The participants who played PubG were advised to read and listen the information, announcements and other contents on the interface of the game in order to overcome the insufficiency of opportunity to practice reading and listening skills and they were recommended to chat with their friends via writing by using the interface in order to tackle the inadequacy of opportunities to practice writing during the game.

3.4.2.2.4 RuneScape

RuneScape is a browser-based MMORPG developed by Jagex Ltd and it has more than 200.000.000 registered users worldwide ("Game Info - Skills, Combat and World Guides", n.d.). The game involves a number of in-game features such as creating a character, completing quests given by non-player characters (NPCs), exploring an open-world environment, interacting and working together with other players to complete quests, developing the skills of the character and collecting items. The game provides EFL learners the opportunity to be exposed to English vocabulary and grammar items and practice reading and writing skills via reading and listening to quests given by NPCs. In addition to this, the game also makes it possible for the EFL learners to interact with other players by writing and reading personal messages. For the moment, the game has no in-game speaking function via a microphone. That's why the participants who played RuneScape were advised to use an external software to communicate with in-game friends via a microphone to practice their speaking skills.

3.4.2.2.5 Seafight

Seafight is a browser-based online game developed by Bigpoint and it has a registered player number of 48 million users ("Seafight Wiki", n.d.). The game has PVE and PVP features in which the players engage with NPCs and other players. Seafight create players the opportunity to expose language structures through in-game texts and to communicate with other players via writing. Because of the fact that in-game features are limited to provide opportunities for EFL learners to practice listening and writing skills, the participants who played Seafight were advised to use external microphone communication software to practice their listening and speaking skills in addition to practicing reading and writing via in-game content and communication possibilities.

3.4.3 Data Collection Procedure

The present study was conducted in the Spring semester of 2017-2018 academic term at the school of foreign languages at a private university in Konya, Turkey and included eight general steps (see figure 1 for a brief summary). These steps include announcing the to the students via email, identifying the participants who want to take part in the study and informing the participants about the details of the study via interviews, collecting background information from the participants via one-on-one interviews, explaining the general procedure to be followed by the participants, conducting the pre-test, multiplayer online gaming for learning EFL, administering the post-test and carrying out the semi-structured interviews.

Announcement	• The students at the institution were informed about the study with a brief explanation of it via email. The students who were interested in the study were asked to send an email to the researcher or visit the researcher to receive detailed information about the study.
Identification of the participants	• The details of the study were explained to the participants via email or one-on-one talks. The participants who wanted to participate in the study were asked to read the consent form carefully and sign it.
Collecting background information	• One-on-one interviews were carried out with the participants and background information related to the names, ages, departments, e-mails, computer games played, average gaming hours per week were collected and noted in a spreadsheet.
Explanation of the procedure	• The participants were informed about the procedure in a detailed way and they were suggested to follow specific steps to follow during the online gaming period.
Pre-test	• The pre-test was carried out with the participants to understand the English proficiency levels of the participants before the gaming period.
Gaming Period	• The participants played multiplayer online computer games for four weeks to develop their English knowledge and skills by taking the points provided by the resarcher into account
Post-test	• The post-test was carried out with the participants to evaluate the Englsih proficiency levels of the participants following the gaming period.
Interview	• The semi-structured interviews were carried out with the participants to reveal the opininons of the participants regarding the gaming period.

Figure 1: An overall summary of the procedures

The procedure started with the selection of participants. Following the approvals of the ethical committee of both the university in which the study was carried out and the university at which the researcher was studying for his master's degree, an email was sent to the students at the institution to inform them about the present study and to ask the students to contact the researcher in case they were interested. The participants who wanted to participate in the study received a detailed information regarding the present study via email and face-to-face talks. The participants who wanted to participate in the study were given a consent form that included the details and conditions of the study and were asked to sign it on condition that they agreed.

Once the participants who were going to take part in the study were determined, the background information related to the participants were collected via one-on-one short interviews. The names, ages, departments, e-mails, computer games that the participants regularly played, average gaming hours per week were asked in one-on-one interviews and typed into a spreadsheet. In these one-on-one interviews the researcher evaluated the appropriateness of the multiplayer online computer game that the participants regularly played by considering the minimum age limit and the content of the game according to the terms and conditions of that specific computer game. Considering the fact that all participants in the study were above 18 years old and none of the computer games included required an age restriction of over 18 years, no inconvenience was found regarding the minimum age limits and the content of the computer games according to the terms and conditions of the computer games involved within the scope of this study. In addition to this, the amount of time that the participants regularly spent on online gaming was evaluated in terms of potential addiction symptoms according to the findings of Van Rooij, Schoenmakers, Vermulst, Van Den Eijnden & Van De Mheen (2011), who identified adolescent students aged that played online games more than 45 hours per week as heavy online gamers and students who played more than 55 hours per week as addicted heavy online gamers. According to their findings, these two groups showed more symptoms of compulsive internet use compared to the other four groups of students who played computer games for 1.8, 9.3, 19.7 and 32.5 hours on average respectively (the fewer hours of gaming

that the participants reported, the lower scores they had on compulsive internet use test). The maximum amount of time spent on online gaming by the participants in the present study was 15 hours per week, the minimum amount was four hours per week, and the average amount was 8.4 hours per week. As a result, the amount of time spent on online gaming by the participants of the present study were closest to the second group (9.3 hours per week) Van Rooij et al (2011)'s study, which weren't identified as non-addicted heavy online gaming group or addicted heavy online gaming group. As a consequence, the participants weren't asked to change the computer games that they played or their gaming habits. The last part of the one-on-one interview involved a detailed explanation of what the participants were expected to do in the gaming period and the suggestions to improve target language learning and skills development. The participants were suggested to:

1. Use the game interface in English.
2. Change the server location from regional servers to England or United States servers or adjust the game settings so that the game would allow matching with players outside their own country.
3. Have a dictionary (preferably an app that would make it possible for them to listen to the pronunciation of unknown words) with them while gaming.
4. Read the Language of Gaming. (2016) by Oxford university to have an idea of online gaming terms and abbreviations.
5. Adopt a mindset that would help them maximize target language learning and target language skills development via communicating with other players.
6. Talk about other general topics (such as hobbies and friends) in addition to in-game conversations with other players.
7. Communicate effectively with NPCs by answering their questions both by reading-writing and listening-speaking to practice their target language skills in addition to the in-game communications with other players.
8. Report any problem they encounter while communicating with other players and trying to understand in-game content to the researcher via email including

screenshots to find solutions to the points they couldn't understand and the communication issues they constantly have problems with.

9. Have weekly one-on-one talks with the researcher to receive assistance and guidance on the target language problems they have while trying to understand the content of the games they were going to play and while trying to communicate with other players in the game.

After the background information was collected and the detailed explanation about what they were supposed to do in the gaming period was explained, the participants took the pre-test. The pre-test was carried out to learn about the target language proficiency levels of the participants prior to the study. First, the participants took the reading and writing pre-test, which lasted 90 minutes. Then, the listening test was carried out and it lasted nearly 35 minutes including the listening of instruction and questions. Following the listening test, the speaking pre-test was conducted. The speaking test lasted nearly five minutes on average and was recorded via a voice recorder.

Following the pre-test, the gaming period started and it lasted for four weeks. In these four weeks the participants were asked to play the computer games with a mindset to learn English structures and develop their English language skills by taking the suggestions mentioned above into consideration. In order to confirm whether the participants spent time playing computer games to develop their target language knowledge and skills, the participants were asked to send at least one in-game screenshot or replay to the researcher whenever they played the game. During the gaming period, the participants reported any problems they had while playing the computer games via emails and received feedback from the researcher. In addition, they reported their problems and their ongoing progress weekly by having one-on-one talks with the researcher. The researcher provided feedback to the problems and the progress of the participants in these one-on-one talks. The researcher also tried to help any technical problems that the participants experienced while playing the computer games. The gaming period lasted four weeks. In these four weeks, the participants

received no other English instruction except as part of the feedback provided during gaming period by the researcher.

At the end of the gaming period, the post-test was conducted to find out about the target language proficiency levels of the participants at the end of the gaming period. The post-test had the same structure as the pre-test with a 90-minute reading and writing test, a listening test that lasted nearly 35 minutes and a speaking test that lasted nearly five minutes. The tests were carried out in the same order and the speaking test was recorded via a voice recorder.

After the post-test was conducted, the semi-structured interview was carried out with the participants to learn about the ideas of the participants regarding the effectiveness of the gaming period in terms of developing target language skills. The interviews lasted approximately 10 minutes with each participant.

3.5 Data Analysis

This study utilized both quantitative and qualitative data with a sequential mixed methods approach. Sequential mixed methods design was used in this study in an effort to have a further understanding of the quantitative findings of the study by making use of qualitative data (Creswell, 2003). In this regard, qualitative data was collected subsequent to the quantitative data collection and the data was analyzed in this order.

Following the data collection procedure, the quantitative data was analyzed via a computer software (SPSS). First of all, the quantitative data were analyzed descriptively. Then the data was analyzed in terms of normal distribution by using Kolmogorov-Smirnov normality test. After the descriptive statistics and the normality analysis were conducted, the overall differences between the pre-test and the post-test scores of the participants were analyzed via a two-factor repeated measures ANOVA. Finally, the individual differences between the test-scores of the participants on each

test (reading, listening, writing and speaking) on the pre-test and the post-test were analyzed via pairwise comparisons.

After the quantitative data analysis, qualitative data was analyzed via thematic analysis with a semantic approach considering the guidelines provided by Braun & Clarke (2006). According to the phases of thematic analysis provided by Braun & Clarke (2006, the qualitative data was gathered and transcribed, initial codes were created and then themes and categories were searched and defined according to the codes. In order to carry out these general steps, the 15-point checklist provided by Braun & Clarke (2006), which starts with the transcription of the data and the coding process and ends with the evaluation of the themes according to the position of the analysis, was utilized. These steps were further carried out by another researcher on a part of the qualitative data to check whether the codings were consistent with each other.

CHAPTER 4

FINDINGS

4.1 Findings in Relation with the Research Question 1 "Does multiplayer online computer gaming for developing EFL skills result in a significant overall development of target language skills?"

In order to find out whether multiplayer online computer gaming has a significant effect on the overall development of target language skills, two Cambridge PET tests, which involved reading, writing, listening and speaking sections, were carried out. The results of the pre-test and the post-test were analyzed via repeated measures ANOVA to understand whether there was a significant mean difference between the mean scores of these tests. Under this heading, the findings related to the research question 1 will be reported in detail.

4.1.1 Descriptive Statistics of the Pre-test

At the beginning of the data analysis, the pre-test scores were analyzed descriptively (see Table 5 and Figure 2). The participants scored a minimum of 31.43 and a maximum of 88.57 on the reading pre-test with a mean score of 49.45 and a standard deviation of 15.44. On the writing pre-test, they scored a minimum of 24 and a maximum of 85 with a mean score of 60.33 and a standard deviation of 20.59. On the listening pre-test, the participants scored a minimum of 20 and a maximum of 68 with a mean score of 39.69 and a standard deviation of 12.9. Finally, on the speaking pre-test the participants scored a minimum of 25 and a maximum of 96.67 with a mean score of 68.07 and a standard deviation of 20.3.

Table 5: Descriptive statistics of the pre-test

Test Type	Minimum	Maximum	Mean	Standard Deviation
Reading	31.43	88.57	49.45	15.44
Writing	24	85	60.33	20.59
Listening	20	68	39.69	12.9
Speaking	25	96.67	68.07	20.3
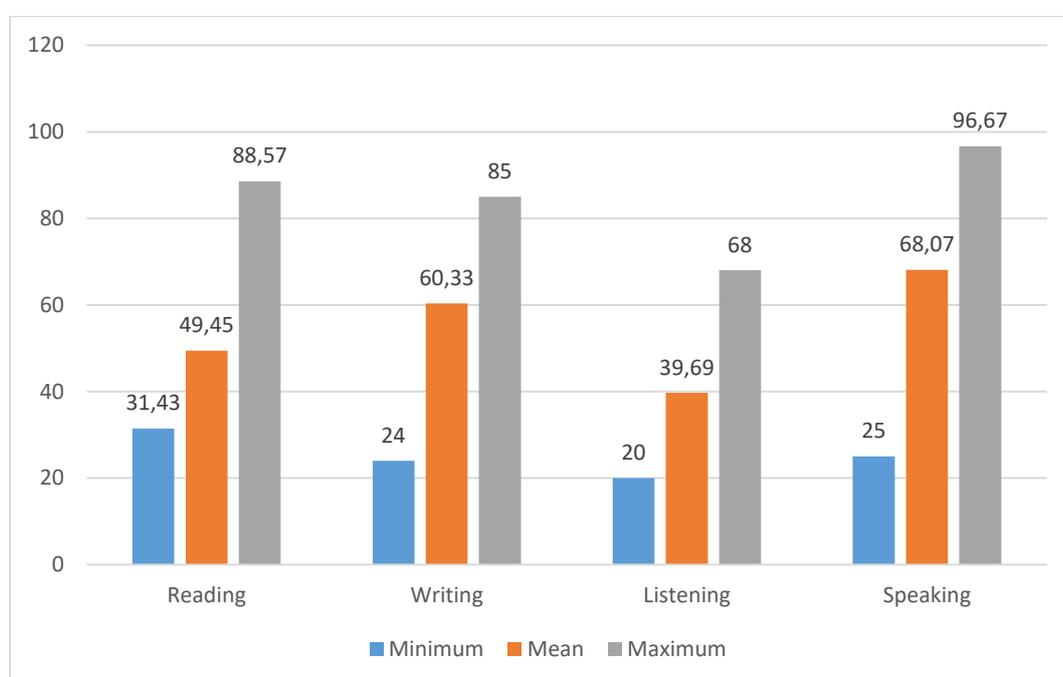
Figure 2: Descriptive statistics of the pre-test

Following the descriptive statistics analysis, the pre-test scores of the participants were converted into the Cambridge Scale to learn about the standardized proficiency levels of the participants for each skill and as a whole (see Table 6). This was done by converting the scores of the participants on each test from 100 to the Cambridge Scale via Cambridge English Scale Score Converter. According to the Cambridge English Scale Score Converter, the scores between 45-70 were identified as A2 level, the

scores between 70-90 were identified as B1 level and the scores over 90 were identified as B2 level. As mentioned earlier, due to the fact that Cambridge PET provides information only for A2, B1 and B2 levels, the scores below 45 were identified as below A2 level. The overall proficiency levels of the participants on all skills were determined by adding up the scores of the participants on each test and weighing the sum of scores to 100. In terms of reading, five participants had below A2 level, seven participants had A2 level and one participant was at B1 level proficiency. Regarding writing proficiency, three participants were below A2 level, five participants had A2 proficiency level and five participants had B1 level proficiency in writing. With regard to listening, 10 participants were below A2 level proficiency and three participants were at A2 proficiency level. In speaking, one participant was below A2 level, 10 participants were at A2 level speaking proficiency and two participants were at B2 level proficiency. Overall, one participant was below A2 level proficiency, 11 participants were at A2 level proficiency level and one participant had B1 level proficiency.

Table 6: Overview of participants' proficiency levels on the pre-test

Participants	Reading	Writing	Listening	Speaking	Overall
Participant 1	Below A2	A2	Below A2	A2	A2
Participant 2	A2	B1	A2	B2	A2
Participant 3	Below A2	Below A2	Below A2	Below A2	Below A2
Participant 4	Below A2	Below A2	Below A2	A2	A2
Participant 5	Below A2	A2	Below A2	A2	A2
Participant 6	A2	A2	Below A2	A2	A2
Participant 7	A2	B1	Below A2	A2	A2
Participant 8	A2	B1	Below A2	A2	A2
Participant 9	A2	A2	Below A2	A2	A2
Participant 10	A2	A2	Below A2	A2	A2
Participant 11	A2	B1	Below A2	A2	A2
Participant 12	Below A2	Below A2	A2	A2	A2
Participant 13	B1	B1	A2	B2	B1

4.1.2 Descriptive Statistics of the Post-test

After the descriptive analysis of the pre-test scores was carried out, post-test scores were analyzed descriptively (see Table 7 and Figure 3). The participants scored a minimum of 22.86 and a maximum of 97.14 with a mean score of 50.52 and a standard deviation of 19.72 on the reading pre-test. On the writing pre-test, the participants scored a minimum of 27 and a maximum of 96 with a mean score of 65.89 and a standard deviation of 20.88. On the listening test, the participants scored a minimum of 28 and a maximum of 96 with a mean score of 53.69 and a standard deviation of 17.81. Finally, on the speaking post-test, the participants had a minimum score of 43.33 and a maximum score of 95 with a mean score of 72.69 and a standard deviation of 16.52.

Table 7: Descriptive statistics of the post-test

Test Type	Minimum	Maximum	Mean	Standard Deviation
Reading	22.86	97.14	50.52	19.72
Writing	27	96	65.89	20.88
Listening	28	96	53.69	17.81
Speaking	43.33	95	72.69	16.52
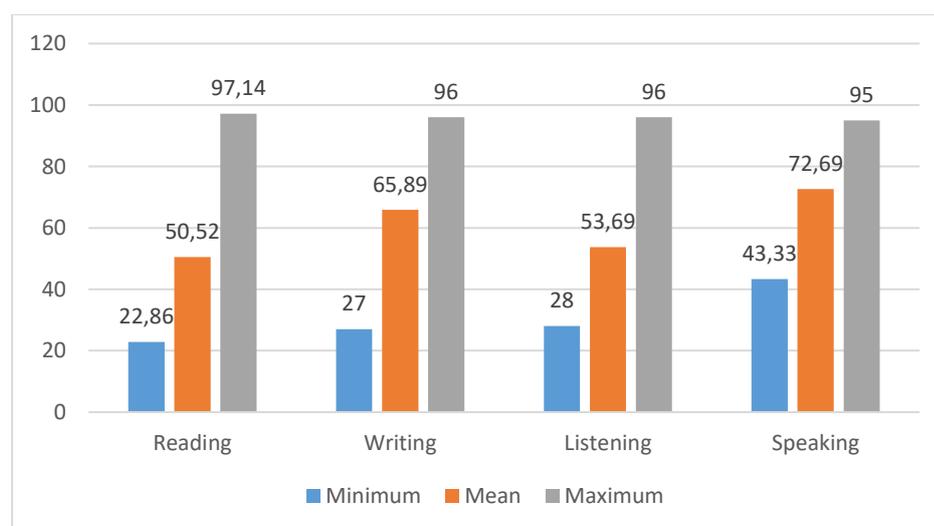
Figure 3: Descriptive statistics of the post-test

Following the descriptive analysis of the post-test scores, the scores were converted to the Cambridge Scale to gain further insights regarding the proficiency levels of the participants on the post-tests (see Table 8). In terms of reading, seven participants were below A2 level proficiency, five participants had A2 level proficiency and one participant had B1 level reading proficiency. With regard to writing, two participants were below A2 level proficiency, seven participants had A2 level proficiency, one participant had B1 level proficiency and one participant had B2 level writing proficiency. In listening, three participants were below A2 level proficiency, seven participants had A2 level proficiency, one participant had B1 level proficiency and two participants had B2 level proficiency. In speaking, two participants were below A2 level proficiency, four participants had A2 level proficiency, three participants had B1 level proficiency and four participants had B2 level proficiency. Overall, one participant was below A2 level proficiency, nine participants had A2 level proficiency, two participants had B1 level proficiency and one participant had B2 level proficiency.

Table 8: Overview of participants' proficiency levels on the post-test

Participants	Reading	Writing	Listening	Speaking	Overall
Participant 1	A2	Below A2	Below A2	A2	A2
Participant 2	A2	B1	A2	B2	B1
Participant 3	Below A2	Below A2	Below A2	Below A2	Below A2
Participant 4	Below A2	A2	A2	B2	A2
Participant 5	Below A2	A2	Below A2	B1	A2
Participant 6	Below A2	B1	B2	A2	A2
Participant 7	A2	B1	A2	B2	B1
Participant 8	Below A2	B1	B1	A2	A2
Participant 9	Below A2	A2	A2	B1	A2
Participant 10	A2	B1	A2	B1	A2
Participant 11	A2	B1	A2	A2	A2
Participant 12	Below A2	A2	A2	Below A2	A2
Participant 13	B2	B2	B2	B2	B2

4.1.3 Normality Analysis of the Pre-test and the Post-test

Subsequent to the descriptive statistics analysis, the pre-test scores and the post-test scores were analyzed in order to understand whether the test scores had a normal distribution or not via Kolmogorov-Smirnov normality test (see Table 9). According to the Kolmogorov-Smirnov normality test, the reading, writing, listening pre-test scores were normally distributed with a p value of $p > .200$. The speaking pre-test was normally distributed with a p value of $p = .129$. The reading, listening and speaking post-tests were normally distributed with a p value of $p > .200$. The writing post-test was normally distributed with a p value of $p = .139$.

Table 9: Kolmogorov-Smirnov normality test

Test	Kolmogorov-Smirnov p-value
Reading pre-test	.200*
Writing pre-test	.200*
Listening pre-test	.200*
Speaking pre-test	.129
Reading post-test	.200*
Writing post-test	.139
Listening post-test	.200*
Speaking post-test	.200*

* This is a lower bound of the true significance.

According to the normality analysis, all test scores on all sections of the pre-test and the post-test were normally distributed above the $p > ,05$ level. According to the results, the normality assumption of the repeated measures ANOVA was confirmed.

4.1.4 Comparison of the Pre-test and the Post-test Scores

In order to understand whether there was a significant difference between the pre-test and the post-test scores of the participants, a two-way repeated measures analysis of

variance (ANOVA) was carried out. The repeated measures ANOVA was conducted with two factors; test time and test type. The objective of the repeated measures ANOVA was to understand whether there was a significant difference in the test scores of the participants between the pre-test and the post-test scores. To do this, the test time factor was created to analyze the statistical differences between the pre-test and the post-test as a whole. The test-type factor was involved in order to compare the pre-test scores and the post-test scores of the participants separately for each skill. The test-time factor involved two levels as the pre-test and the post-test and the test-type factor involved four levels as reading, writing, listening and speaking.

First of all, the normal distribution assumption was checked. As noted earlier, the pre-test and the post-test scores of the participants were all normally distributed with a p value of $p > 0.05$ (See Normality Analysis of the Pre-test and the Post-test Scores subheading for more details).

Following the normal distribution analysis, sphericity assumption was checked. In order to test whether there was a violation in the sphericity assumption or not, Mauchly's test of sphericity was carried out. The Mauchly's test of sphericity revealed that the sphericity assumption was not violated for the test-type factor ($p = .372$). For the test-time factor, Mauchly's test of sphericity reported no significance due to the fact that there were only two levels to this factor.

Table 10: Mauchly's test of sphericity

Within Subject Effects	Mauchly's W	Significance
Test-time	1.000	.
Test-type	.605	.372

Next, the results of the repeated measures ANOVA was analyzed to understand whether there was a significant difference on the test-time and test-type factors or not (see Table 11) for the ANOVA results and Figure 4 for the descriptive comparison of the pre-test scores and the post-test scores of the participants out of 100). According

to the results of the repeated measures ANOVA, there was a significant mean difference between the pre-test scores and the post-test scores of the participants based on test-time. ($F(1,12) = 17.76$, $p = 0.001$, $\eta p2 = .597$). The results indicated a power value of 0.971, which was over ,80. The results further revealed that there was a significant mean difference between the pre-test scores and the post-test scores of the participants based on test-type. ($F(3, 36) = 14.75$, $p = 0.002$, $\eta p2 = .551$) with a power value of 0.941.

Table 11: Repeated Measures ANOVA Results

Source	F Value	Significance	Partial Eta Squared	Power
Test-time	17.76	0.001	.597	.971
Test-type	14.75	0.002	.551	.941
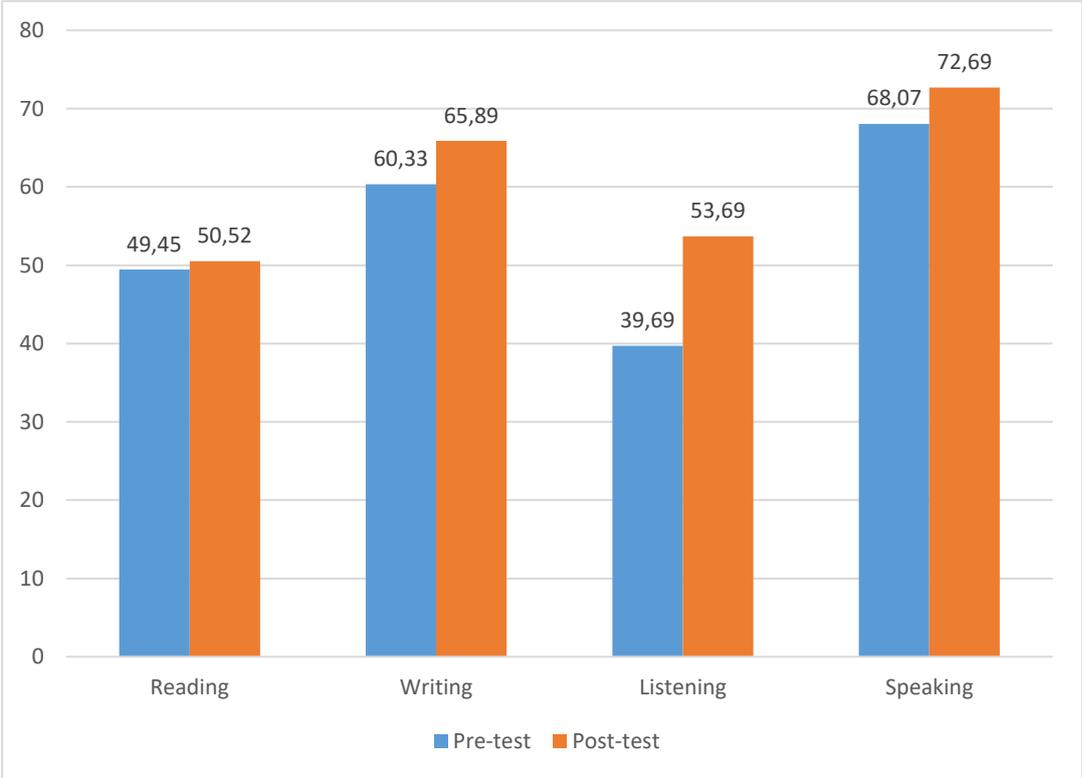
Figure 4: Overall comparison of the pre-test and post-test scores

4.2 Findings in Relation with the Research Question 2 "Does multiplayer online computer gaming for developing EFL skills result in a significant development of target language skills based on reading, writing, listening and speaking?"

In order to find out whether there were any significant differences between the test scores of the participants based on each skill's pre-test and post-test, pairwise comparisons with a Bonferroni correction were analyzed (See Table 12). The individual comparison of each skill based on pre-test and post-test scores will be reported under this heading.

Table 12: Pairwise comparisons of the test scores based on test-time

Test-type	Pre-test Mean	Post-test Mean	Mean Difference	Significance
Reading	49.45	50.52	-1.07	.819
Writing	60.33	65.89	-5.56	.201
Listening	39.69	53.69	-14	.005
Speaking	68.07	72.69	-4.61	.020

Firstly, the mean differences between the pre-test reading and post-test reading sections were analyzed to understand whether there was a significant mean difference or not (See Figure 5). The pairwise comparisons revealed that there was no significant mean difference (1.07) between the pre-test scores (49.45) and on the post-test scores (50.52 of the participants on the reading tests (p = .819).
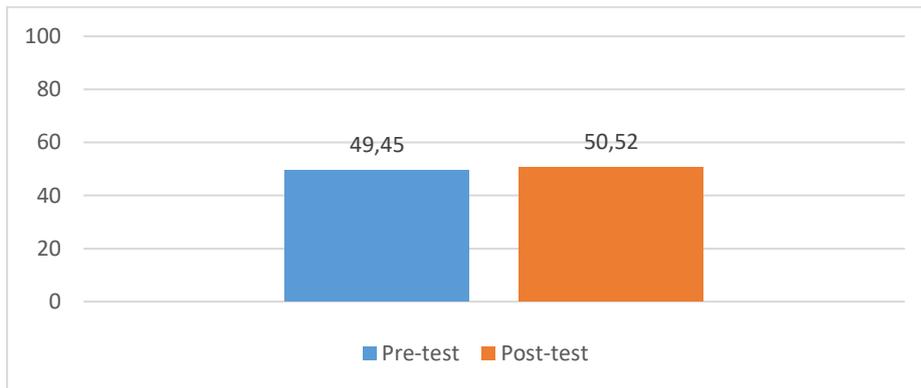
Figure 5: Comparison of the pre-test reading and post-test reading scores

Secondly the pre-test scores and the post-test scores on the writing parts were analyzed to check for any significant differences (See Figure 6). The analysis showed that there was no significant mean difference (5.56) between the pre-test scores (60.33) and the post-test scores (6.89) of the participants on the writing tests ($p = .201$).
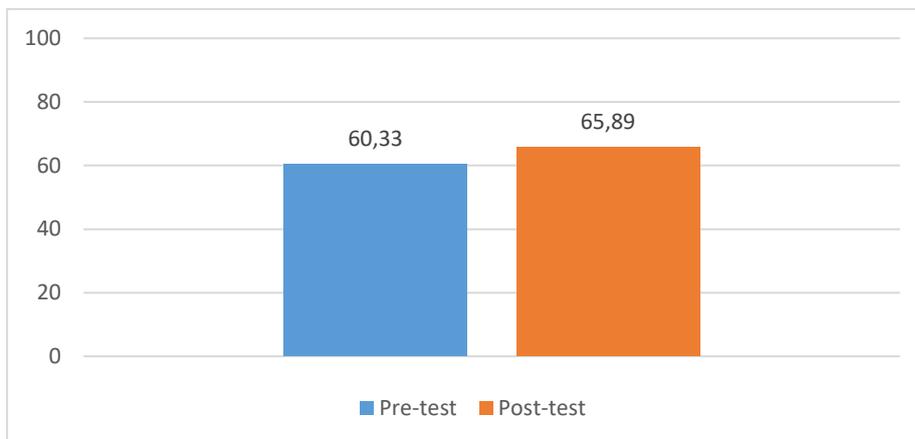
Figure 6: Comparison of the pre-test writing and post-test writing scores

Thirdly, the scores of the pre-test listening and post-test listening sections were compared (See Figure 7). The analysis displayed that there was a significant mean difference (14) between the pre-test scores (39.69) and the post-test scores (53.69) of the participants on the listening tests ($p = 0.005$).
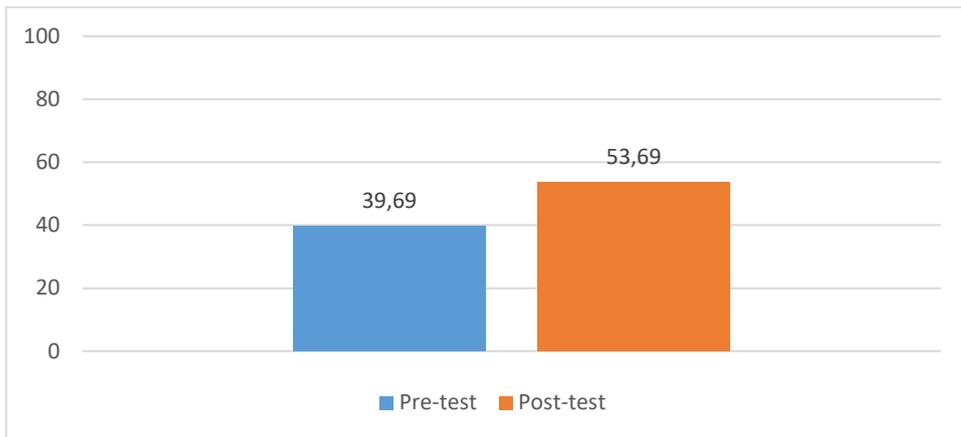
Figure 7: Comparison of the pre-test listening and post-test listening scores

Finally, the scores of the participants on the pre-test speaking and post-test speaking sections were compared to check for any significant difference (See Figure 8). The analysis uncovered that there was a significant mean difference (4.61) between the pre-test scores (68.07) and the post-test scores (72.69) of the participants on the speaking tests (p = 0.020).
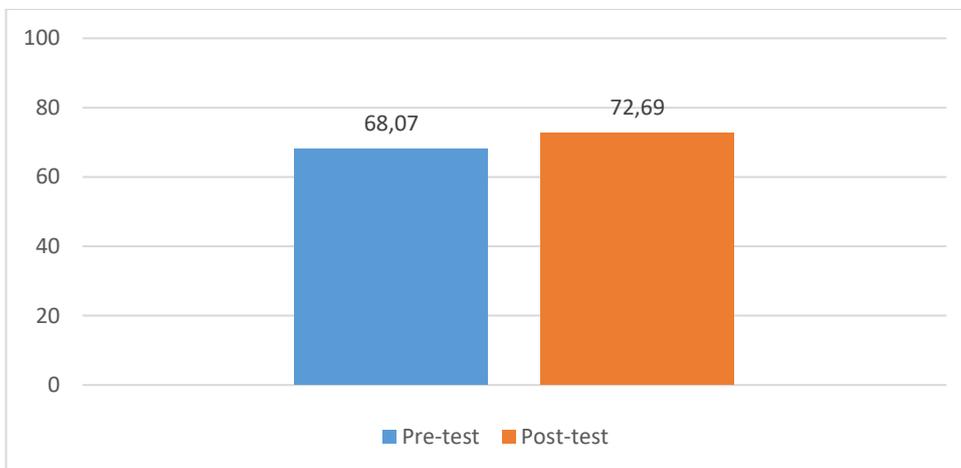
Figure 8: Comparison of the pre-test speaking and post-test speaking scores

As a conclusion, the findings of the pre-test scores and the post-test scores indicated a significant increase in the listening scores and speaking of the participants from the

pre-test to the post-test. However, the results did not indicate a significant increase in the reading and writing scores of the participants from the pre-test to the post-test.

4.3 Findings in Relation with the Research Question 3 "What are the opinions of language learners towards playing multiplayer online computer games for developing EFL skills?"

In order to answer the third research question, a semi-structured interview was carried out and the interview data was analyzed via thematic analysis by following the steps provided by Braun and Clarke (2006). In this heading, the findings related to the third research question will be reported.

The thematic analysis of the semi-structured interview resulted in five themes. These are a) *overall gaming experiences of the participants*, b) *teacher guidance during the gaming period*, c) *using an upper-limit during the gaming period*, d) *development of target language skills* and e) *additional comments*. For each of these themes, two categories emerged. These are '*benefits*' and '*challenges*'.

4.3.1 The Overall Gaming Experiences of the Participants

The thematic analysis of the first interview question, which investigated the general opinions of the participants regarding the gaming period to develop EFL skills, identified the theme *overall gaming experiences of the participants* and the two categories of *benefits* and *challenges* (See Table 13 for the frequency of the codes). All participants reported the overall *benefits* of the gaming period and five participants reported the overall *challenges* they had during the gaming period.

Table 13: Frequency of the codes for *the overall gaming experiences of the participants* theme

Category	Code	Frequency
Benefits	Improvement in English	9
	Vocabulary development	9
	Beneficial	6
	Learning and having fun	5
	Positive towards playing other games for learning EFL	3
	Listening development	2
	Speaking development	2
	Reading development	2
	Writing development	1
	Pronunciation development	1
	Peripheral learning	1
	TOTAL	41
Challenges	Lack of speaking practice	2
	Having adaptation problems at the beginning	2
	Lack of reading practice	1
	Lack of listening practice	1
	Lack of writing practice	1
	Limited time period	1
	Limited vocabulary items	1
	TOTAL	9
OVERALL TOTAL FOR THE THEME		50

The *benefits* category revealed positive opinions of the participants towards the gaming period such as the improvement of target language knowledge and skills, learning and having fun, increased motivation and participation. Regardless of the type

of computer game they played, all participants reported the advantages of computer games especially in terms of improving English knowledge and skills.

> I believe that multiplayer online computer games have a positive impact on English skills because I myself have learned a lot of words and a lot of pronunciations from computer games at this point… (Participant 4, MOBA player).

> First of all, I believe that computer games are definitely helpful because playing computer games is something that entertains people and it is something that they like. While people are doing something that they like and something that they enjoy, they can also acquire some knowledge. Something very simple, for example, you play Age of Empires or Mythology and suddenly you know about the Greek gods. They stay on your mind in daily life and you know about them. In computer games, similarly, we learn English terms and words because we need them. We need to learn them in order to play the game. Then, they can be useful to us in daily life in a good way. That's why, they are definitely beneficial, I mean, they make a difference in terms of language development (Participant 8, FPS player).

> … I use them a lot, I mean, I think that these computer games are definitely beneficial to improve English. They are definitely useful. (Participant 9, MOBA player).

> I believe that this period is beneficial in terms of learning English because we always use English in the game and the instructions and quests are described in English… (Participant 10, MMORPG player).

It was found in the *benefits* category that some codes were more dominant compared to the other codes. The majority of the codes indicated that the participants thought they improved their target language systems and skills as a result of the gaming period.

The participants reported that they improved their English knowledge and skills by increasing their vocabulary knowledge and improving their reading, listening, writing and speaking skills. Participants from all gaming genres believed that they improved their vocabulary knowledge as a result of the gaming period:

> … The more you play, the more you want to play and whether you want it or not, those English words etc. are imbedded on your mind (Participant 7, MMORPG player).

> … In computer games, similarly, we learn English terms and words because we need them. We need to learn them in order to play the game… (Participant 8, FPS player).

> … For example, in English servers, you speak English to English people. You try to understand them, when you try to say something but you can't, you check Google and thus you learn new words… (Paticipant 9, MOBA player).

> … We always use English in the game, the instructions and the quests are described in English. In order to fulfill them, we need to look up the words. It especially provides a great enhancement in vocabulary… (Participant 10, MMORPG player).

> … I think it was really helpful for me in terms of vocabulary while I was playing because I noted down the new words I learned to my vocabulary notebook. I kept track of the conversations of players on chat section. I paid attention to what they talked about and which words they used. In that way, it was beneficial to me (Participant 11, MMORPG player).

It was found with regard to the target language knowledge and skills development codes of the *benefits* category that the participants thought that they improved specific language skills as part of the game type that they had played. MMOG and MMORPG

players thought that they mostly improved their reading, listening and writing skills, FPS players thought that they mostly improved their listening and speaking skills and MOBA players thought that they mostly improved their reading skills:

> … We go on only by writing. Due to the fact that the game doesn't have many players, you can't address many people. But I had the chance to talk to specific people via writing… (Participant 5, MMOG player).

> I think we can progress in a positive way because I think that there can be more positive results in terms of reading and listening in the conversations there… (Participant 7, MMORPG player).

> … in these multiplayer online computer games, there is a speaking system, you press the microphone and speak. In English servers, for example, you speak English with English people… (Participant 9, MOBA player).

> It was good. I mean, I already liked using English, having the lesson in English. They already help, it was beneficial when I tried to speak English. (Participant 12, FPS player).

The other category within the scope of the thematic analysis of the first interview question was the *challenges*. Although the codes within this main category weren't as common as the codes of the *benefits* category, there were important points to be reported. Within this category, five participants reported the *challenges* that they had during the gaming period such as the limited time, adaptation problems and the lack of practice opportunities of specific language skills.

> … At first, there were some challenges for me, I mean, after some time even the character there got angry with me because I couldn't understand and I didn't know what to do. I couldn't even move… (Participant 3, MMORPG player).

Due to the fact that I was quite busy, the period was short for me… (Participant 6, MMORPG player).

Similar to the first category, *benefits*, it was found that some of the codes in the second category, *challenges*, were quite dominant compared to the others. The majority of the codes in the *challenges* category were related to the limited opportunities to practice specific target language skills. The participants expressed their opinions in terms of not having the opportunity to practice specific language skills according to the type of computer games that they played:

… I mean there aren't any quests, there isn't anything to improve your reading… (Participant 1, FPS player).

… Because of the fact that English is a language that improves as it is used and due to the fact that I couldn't practice speaking and listening, I believe that I only had the chance to improve my reading and writing skills (Participant 5, MMOG player).

Most of these participants, on the other hand, were positive towards playing other types of multiplayer online computer games in order to improve different language skills. When asked about their opinions towards playing other types of multiplayer online games to develop different language skills, they had mostly positive opinions:

… Since I believe that I improved my reading and writing in the computer game that I played, probably a person who practices speaking and listening, because he or she will hear and listen to some things from a person who uses this language, even only hearing and listening will provide the ability to speak. (Participant 5, MMOG player).

To sum up, the thematic analysis of the first interview question revealed the theme *overall gaming experiences of the participants* and the two categories of *benefits* and *challenges*. Notable *benefits* included the improvement of target language knowledge and skills, learning and having fun, increased motivation and participation and the important *challenges* involved limited time, adaptation problems and the lack of practice opportunities of specific language skills.

4.3.2 Teacher Guidance During the Gaming Period

The thematic analysis of the second interview question, in which the opinions of the participants towards playing multiplayer online computer games via the guidance of a language teacher, who was the researcher in this instance, were explored, uncovered the theme *teacher guidance during the gaming period* and the two categories of *benefits* and *challenges* (See Table 14 for coding frequency). All participants reported the *benefits* of teacher guidance in multiplayer online gaming for developing EFL skills and three participants shared the *challenges* they had in terms of teacher guidance during the gaming period. In the present study, the teacher guidance was provided by the researcher.

Table 14: Frequency of the codes for the *teacher guidance during the gaming period* theme

Category	Code	Frequency
Benefits	Effects of using the interface in English	4
	Effects of changing servers	3
	The need for guidance	3
	Conscious learning through guidance	3
	Improvement in English	2
	Vocabulary development	2
	Speaking development	1
	TOTAL	18
Challenges	Lack of faster feedback	1

Table 15: Frequency of the codes for the *teacher guidance during the gaming period* theme *(Continued)*.

Category	Code	Frequency
	Learning English based on the game	1
	Limited development for higher proficiency learners	1
	TOTAL	3
OVERALL TOTAL FOR THE THEME		21

The *benefits* category revealed the positive opinions of the participants towards multiplayer online gaming and developing EFL skills in terms of the positive effects of teacher guidance on issues such as using the game interface in English, changing game servers from regional servers to international servers, conscious learning through guidance and better improvement in English skills.

> … I was playing the game on Turkish server before. During this period, I switched to the English server. In the Turkish server, there is not a possibility of finding a foreign player, that's why I didn't have the chance to speak English with anybody … Thus, I think that my English improved a bit more. (Participant 5, MMOG player).

> … At first, if the researcher hadn't guided, it would have been an unconscious playing process. You don't know what to do, playing without an aim, I don't think that it will be quite beneficial. But with the guidance of the researcher and with the help that the researcher provided on the points that you were stuck with, of course there were positive aspects. I think that this will increase the improvement. I hope it did (Participant 7, MMORPG player).

> Of course, playing a computer game with Turks won't provide a huge development to you, but, playing with foreigners speaking different languages, naturally the common language is English, benefits a lot. I mean, playing with

the English and foreigners, you need English to communicate with them, sometimes you use the terms that you use in the game. You have to add something to them. You learn something new. Maybe you learn something from them. That's why this guidance was quite helpful (Participant 8, FPS player).

I think these can be more beneficial. If the person who plays computer games in English enjoys that game, some games aren't in Turkish but only in English, he or she has to play in English. Therefore, what happens, in English interface, for example a role-playing game, that person has to learn those words in any case. Unknown words appear. For example, what happens in role-playing games, he or she finds a sword on the ground. That sword has specific features written in English. I mean, I believe that it helps (Participant 9, MOBA player).

The *challenges* category uncovered the negative opinions of participants towards teacher guidance during the gaming period in terms of lack of faster feedback, learning English based on the game, limited development for higher proficiency learners.

Actually, I don't want to ask something unless I make eye contact with the researcher because the waiting time is long and I can find the simple thing that you want to ask on the Internet and thus shorten that waiting time, I don't consult the researcher much… (Participant 2, MOBA player).

I think I have learned what I am supposed to learn from computer games. Due to the fact that there is no gaming contest, after some time, you can't proceed. However, I think that it helps lower proficiency learners for sure (Participant 13, MOBA player).

Taking all the analysis into consideration, the thematic analysis of the second interview question revealed the theme *teacher guidance during the gaming period* and the two categories of benefits and *challenges*. The benefits contained the effects of changing

game servers from regional servers to international servers, conscious learning through guidance and better improvement in English skills. The *challenges* covered the lack of faster feedback, learning English based on the game, limited development for higher proficiency learners.

4.3.3 The Opinions of the Participants Regarding the Upper Limit of Playing Hours

The thematic analysis of the third interview question, in which the opinions of the participants in terms of the upper time limit of weekly playing hours were investigated, resulted in *the upper limit of playing hours* theme and the categories of *benefits* and *challenges* (See Table 15 for coding frequency). The common points involved the necessity and the effectiveness of the upper playing limit in terms of preventing addiction and the unnecessariness of the upper limit due to reasons such as the age limit and limited effectiveness.

Table 16: Frequency of the codes for *the upper limit of playing hours* theme

Category	Code	Frequency
Benefits	Preventing addiction	7
	Necessary	4
	Pleased	2
	TOTAL	13
Challenges	Not necessary due to age limit	2
	Teacher and parent control for kids not for adults	2
	Decrease in target language skills development	2
	Not very effective	2
	TOTAL	8
OVERALL TOTAL FOR THE THEME		21

The *benefits* category in *the upper limit of playing hours* theme revealed the advantages of the gaming period regarding the use of an upper playing limit. Nine

participants believed that having an upper limit of playing hours was useful in terms of preventing negative outcomes such as potential addiction symptoms.

It prevents, because there are some chapters in the game, after a while, it comes to this point, what is there in the next chapter? What type of quest will be given is wondered. Prevention is something good because if it causes addiction for the student, we may become thinking about it all the time. That's why, prevention is important not only for a student but also for a normal person (Participant 3, MMORPG player).

I think it prevents. I'm not a gaming-addicted person, I don't play much. Only in certain periods in a week. Besides, the game isn't a game that can be played constantly. After some time, it bores me. But there are gaming-addicted people. I think it is a proper act to set an upper limit for these people because there are some people among my friends that I no longer communicate due to games. That's why an upper limit and a lower limit are good because it both encourages people to play, since they need to play actually, and the presence of an upper limit means that needs to be limited (Participant 5, MMOG player).

Of course, it prevents. One of the problems of today's youth is gaming addiction. Putting such an upper limit and controlling it is quite important because it will also influence our daily life and social life. An upper limit, especially if we can control it, is something very logical for us (Participant 8, FPS player).

Four participants reported ideas in terms of the *challenges* of using an upper limit of weekly hours during the gaming period. These *challenges* involved unnecessariness of using an upper limit due to the age limit of the participants and lower practice of target language skills.

It isn't very effective for us, I mean, for people over 18 or 20. You are at the middle of a game, the most enjoyable part, you're laughing and having fun with your friends. You can't say my time is up and leave. I mean, due to that, an upper limit isn't for us. Besides, we don't play it at a harmful level. We can differentiate things, the good and the bad. That's why it isn't very logical to us. However, for kids at lower ages, an upper limit must be set because sometimes children cannot differentiate real life and virtual environments. Their families should show them and teach them. The upper limit is logical for them but not for us (Participant 2, MOBA player).

The age range is already a grown-up age range. In the past, there were some games could cause a lot of addiction. If there was an addicted person, I don't think that the process could provide much effect, I mean, it could have caused addiction anyway. I don't think it can cause addiction for people at such an age range (Participant 6, MMORPG player).

… I think it can be harmful in this way, your English improves more slowly because the more you put an effort, the more English words you see, the faster your English improves. I think so. Besides, I don't think it can cause addiction. I mean, it varies from person to person. There are addicted people and there are non-addicted people (Participant 9, MOBA player).

As part of the thematic analysis of the third interview question, *the upper limit of playing hours* theme and the two categories of *benefits* and *challenges* emerged. The *benefits* comprised the usefulness of *the upper limit of playing hours* in terms of preventing negative outcomes such as potential addiction symptoms and the *challenges* included the unnecessariness of using an upper limit due to the age limit of the participants and lower practice of target language skills

4.3.4 The Development of Target Language Skills

The thematic analysis of the fourth interview question, which inquired into the expectations of the participants in terms of any potential differences between the pre-test and the post-test scores, revealed the *development of target language skills* theme and the categories of *benefits* and *challenges* (See Table 16 for coding frequency).

The important points regarding the *benefits* within this theme involved target language knowledge and skills development related points such as better performance in listening, better performance in speaking, better performance in reading, better performance in writing and vocabulary development. The important issues in terms of the *challenges* in this theme involved the lack of writing practice, lack of reading practice, lack of speaking practice, lack of listening practice, the expectation of having a better performance in a longer period and the expectation of developing target language knowledge and skills in another multiplayer online computer game.

Table 17: Frequency of the codes for the *development of target language skills* theme

Category	Code	Frequency
Benefits	Better performance in listening	9
	Better performance in speaking	7
	Better performance in reading	6
	Better performance in writing	4
	Vocabulary improvement	4
	Better vocabulary development	2
	Better overall performance	1
	TOTAL	33
Challenges	Lack of writing practice	4
	Lack of reading practice	3
	Lack of speaking practice	3
	Lack of listening practice	2
	No difference in performance	2

Table 18: Frequency of the codes for the *development of target language skills* theme *(Continued)*

Category	Code	Frequency
	Better performance in a longer time period	2
	Speaking development in a different game	3
	Writing development in a different game	2
	Reading development in a different game	2
	Listening development in a different game	2
	TOTAL	25
OVERALL TOTAL FOR THE THEME		58

Regarding the *benefits* category, 11 participants believed that they improved specific skills based on the type of multiplayer online computer game that they played. MMORPG players thought that they mostly improved their reading and listening skills, FPS players thought that they mostly improved their listening and speaking skills and MOBA players mostly thought that they improved their reading skills.

> … Since we complete the quests there and generally there are reading-oriented and listening oriented practices, I think that that they improved more (Participant 7, MMORPG player).

> According to my point of view, I definitely think that my listening and speaking improved because I played games that focused on oral communication and naturally accents and speaking styles came into prominence in terms of learning… (Participant 8, FPS player).

> In my opinion, comprehension capacity increases the most because there are always English words in computer games. You encounter unknown words. Whether you want it or not, you search them and you learn their meanings. Since you always play them and see them, after a period of time, they remain on your mind, you learn them and you memorize them. In the exam, you look

at the words you saw there and they also come up in the exam. I mean, you understand better (Participant 9, MOBA player).

With regard to the *challenges* category, seven participants thought that they didn't practice specific skills much and they didn't improve these specific skills due to the fact that the multiplayer online computer game that they played didn't provide them the opportunity to practice these specific skills and improve them and three participants thought that their performances were not very different due to the limited amount of time they spent on gaming for developing EFL skills. MMORPG players thought that they had limited opportunities to improve their speaking, FPS players thought that they had limited opportunities to improve their reading and writing and MOBA players thought that they had limited opportunities to practice speaking.

> Actually, I don't think that there was a lot of improvement in speaking and writing. But I didn't do reading much either. In fact, we do reading while reading the instructions but generally due to the fact that I did those conversations there more via listening, I think that there will be a better performance in listening part (Participant 7, MMORPG player).

> … For example, in CSGO, you don't need to write. You only write to communicate with your opponent. Except that, you always have oral communication. That's why you don't need to write. You can't make progress in your writing … (Participant 8, FPS player).

> … In terms of listening, I think our utilization is less. We generally write to the people we don't know in English. Similarly, we don't speak much… (Participant 13, MOBA player).

On the other hand, these participants showed a positive approach towards improving the target language skills that they couldn't practice and improve due to the types of

multiplayer online computer games that they played in other types of multiplayer online computer games when asked about their opinions:

> I think they would improve, I mean, in order to improve listening and speaking, you need dual conversation. We say, if we go to England or to another place, they will improve because we will need to speak because we have to. I mean, something like that could have happened and that environment could have appeared and that's why they would improve (Participant 3, MMORPG player).

> … For example in RPG, you always have to read something, it gives specific quests to you. You need to read the quests. That's why your reading improves. Similarly, most MMORPGs don't have voice communication. That's why, for example in trading system, you have to communicate via writing. Therefore, naturally, writing improves (Participant 8, FPS player).

> I think it would have appeared. For example, strategic war games, for instance if I had played computer games like Civilization, there would have been more topics to talk about, to exemplify, what you will construct, which technology you will produce, you have more things to talk and write about. But in a game like LoL, improvement would be less because you don't talk about anything except "go", "wait", "I'm coming", "finish the game" (Participant 13, MOBA player).

To summarize, the *development of target language skills* theme and the two categories of *benefits* and *challenges* emerged as part of the thematic analysis of the fourth interview question. The *benefits* involved better development of target language knowledge and skills and the *challenges* included the lack of practicing specific language skills, the expectation of having a better performance in a longer time period and the expectation of developing target language knowledge and skills in a different game.

4.3.5 Additional Comments

The thematic analysis of the final interview question, in which any further ideas of the participants regarding the gaming period were investigated, revealed the *additional comments* theme and *benefits* and *challenges* categories (See Table 17 for coding frequency). The important points in this theme involved the improvement of target language skills and having fun and the limitations of the gaming period.

Table 19: Coding frequency for the *additional comments* theme

Category	Code	Frequency
Benefits	Improvement in English	3
	Efficient	3
	Learning and having fun	2
	Pleased	2
	Opportunity to practice EFL skills	1
	Eager to keep playing to practice EFL skills	1
	Awareness of English competence	1
	TOTAL	13
Challenges	Limited efficiency	1
	Limited game types	1
	TOTAL	2
OVERALL TOTAL FOR THE THEME		15

In terms of the *benefits* category of the *additional comments* theme, seven participants reported the advantages of the gaming period in different ways such as improvement in English knowledge and skills, opportunities to practice English, awareness of English competence, learning and having fun.

… I can find such a communication environment in real life maybe on social media except that, it is very hard (Participant 1, FPS player).

I have been playing computer games since I was a kid. If I have adequate English knowledge, it is definitely thanks to the computer games I have played since childhood. When you are little, you like playing games. You have an interest in them. I mean, you want to play them and you want to understand them. To do this, you learn words and due to the fact that you like doing it and it is not something compulsory but with your own will, they remain on your mind. That's why computer games are definitely beneficial for English language development (Participant 8, FPS player).

I think that this period was beneficial for me. I mean, I myself played not only to play computer games but also to improve my English skills to a certain extent. That's why I think it was more beneficial for me compared to others… (Participant 5, MMOG player).

With regard to the target language knowledge and skills development, these seven participants believed that they improved their English knowledge and skills as a result of the gaming period. The participants thought that they improved their vocabulary knowledge and skills:

I did my best to improve my English in this period. I talked to foreigners. I can understand better while talking to foreigners. I can communicate with them more easily… (Participant 1, FPS player).

I think it was a good and effective study. I talked more than normal while playing (Participant 13, MOBA player).

In terms of the *challenges* category, two participants shared their opinions regarding the problems they had during the gaming period in terms of limited efficiency and in terms of the limited types of multiplayer online computer games.

> … For example, I don't play multiplayer online games much, I mostly play single player story games. But these games weren't accepted in this period… (Participant 2 MOBA player).

> … If you ask me whether this period is enough for improving English skills, I mean, this period is effective to a certain extent. But people need to be persistent on it… (Participant 5, MMOG player).

All in all, the thematic analysis of the fifth interview question resulted in the *additional comments* theme and the categories of *benefits* and *challenges*. The *benefits* involved better development of target language knowledge and skills and the *challenges* involved specific limitations of the gaming period.

CHAPTER 5

DISCUSSION AND CONCLUSION

5.1 The Effects of Multiplayer Online Computer Games on the Overall Development of Target Language Skills

According to the quantitative findings of the study, the research question 1 "Does multiplayer online computer gaming for developing EFL skills result in a significant overall development of target language skills?" was answered positively. The comparison of the pre-test scores and the post-test scores of the participants revealed a descriptive increase in each language skill from the pre-test to the post-test and a significant improvement of reading, listening, writing and speaking skills as a whole. According to the qualitative findings, the *benefits* and the *challenges* of the gaming period were revealed regarding the themes a) *overall gaming experiences of the participants*, b) *teacher guidance during the gaming period*, c) *upper limit of playing hours*, d) *development of target language skills* and e) *additional comments* regarding the research question 3 "What are the opinions of language learners towards playing multiplayer online computer games for developing EFL skills?" (See Figure 9 for an overview of the quantitative and qualitative findings of the study).

In the sense that multiplayer online computer games provide opportunities for EFL/ESL learners to improve their target language skills, the quantitative findings of the study supported the statistical findings of Suh et al. (2010), who pointed out the fact that multiplayer online games promote the development of target language skills. The qualitative findings of the study, which indicated that the participants were mostly positive towards using multiplayer online computer games for developing their target language skills and that the participants practiced their target language

skills, though not all skills on all instances, corroborated the qualitative findings of Peterson (2012) and Godwin-Jones (2014), who highlighted the importance of practicing target language skills through multiplayer online computer games.

Though vocabulary learning wasn't directly observed quantitatively within the scope of the present study, the qualitative findings revealed that most participants believed that they learned new words and they improved their vocabulary knowledge as a result of the gaming period in addition to the practice and development of target language skills. These findings confirmed the findings of Rankin, Morrison and Shute (2009), Rankin, Morrison, McNeal, Gooch and Shute (2009), Peterson (2010), Kongmee et al. (2012), Sylvén and Sundqvist (2012), Lo and Kuo (2013), Sundqvist (2013), Huang and Yang (2014), Zheng et al. (2015), who reported the positive effects and the positive approaches of practicing target language vocabulary via multiplayer online computer games.
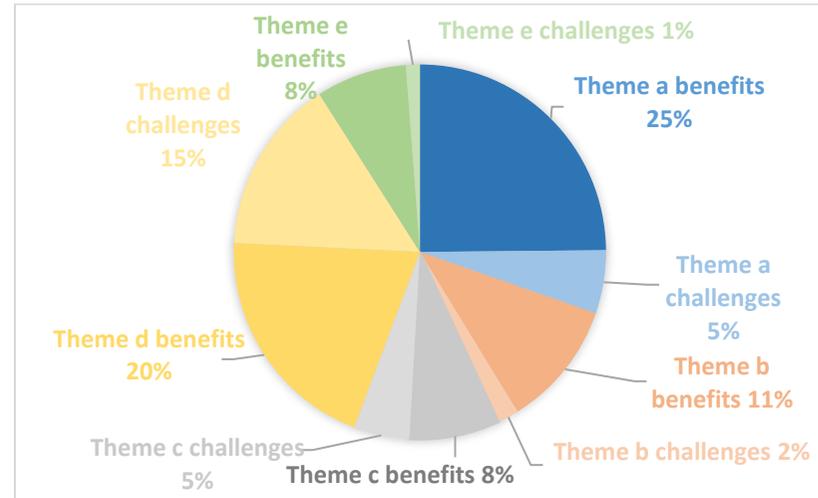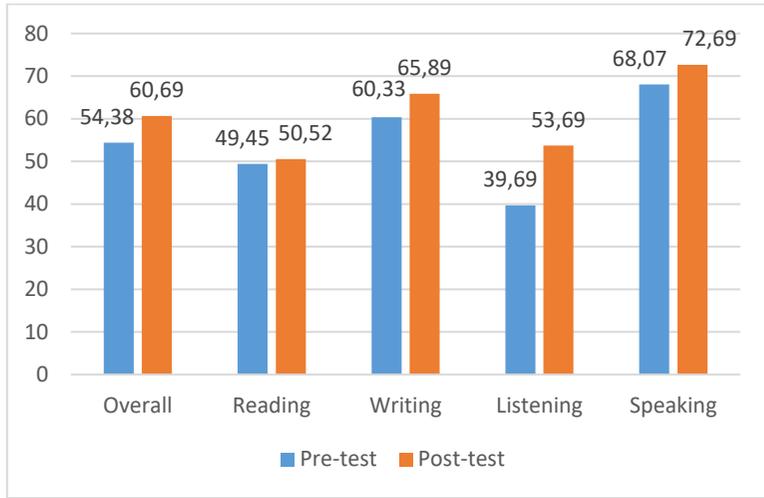
Figure 9: The overall quantitative and qualitative findings of the study in relation with the test scores and the themes (Themes: a. *overall gaming experiences of the participants*, b. *teacher guidance during the gaming period*, c. *upper limit of playing hours*, d. *development of target language skills* and e. *additional comments*)

5.1.1 Implications for Multiplayer Online Computer Gaming and Overall Target Language Skills Development

At the end of the gaming period, in which the participants changed their multiplayer online gaming habits in ways such as using the game interface in English, changing from regional servers to international servers and playing multiplayer online computer games with a conscious effort to develop EFL skills, it was revealed that there was a significant overall development of target language skills. In this regard, the findings of the study provide implications for researchers, language teachers and EFL learners.

The findings of the study corroborated the findings of Suh et al. (2010), Peterson (2012) and Godwin-Jones (2014) in the sense that multiplayer online gaming for EFL learning and EFL skills development result in positive outcomes for practicing and developing target language skills. Further quantitative and qualitative analysis can be carried out with more participants from a wider variety of computer gaming backgrounds to investigate the effects of multiplayer online computer games and language learning. Other standardized tests and evaluation techniques can be involved to increase the validity and the reliability of the findings to a further extent.

In addition to the theoretical implications, the study presents practical implications for teachers. In the present study, adjusting the gaming habits of the participants to maximize the target language skills development resulted in a significant improvement. This can be easily practiced by language teachers. By encouraging their multiplayer online gamer students to use the game interface in English, change their servers to international servers, use a dictionary while gaming, use every in-game opportunity to practice language skills, have conversations on daily issues in addition to game elements, maximize communication with in-game characters and providing feedback to the in-game language learning experiences of multiplayer online gamers via emails or face-to-face conversations, they can increase the target language learning and target language skills development processes of the language learners in their

classes. Similarly, students can follow these points to increase their target language skills development with the support of a teacher, a mentor or their parents.

5.2 The Effects of Multiplayer Online Computer Games on the Development of Target Language Reading Skills

The research question 2a, "Does multiplayer online computer gaming for developing EFL skills result in a significant development of target language skills based on reading?", was answered negatively according to the quantitative findings of the present study. Though there was a descriptive increase from the pre-test to the post-test on the reading test, the results of the pairwise comparisons revealed that there was no significant improvement from the pre-test to the post-test. This finding did not confirm the findings of Suh et al. (2010), who pointed out the positive effects of a multiplayer online computer game on target language reading skill development.

On the other hand, the qualitative findings of the study indicated that the findings of Suh et al. (2010) were both corroborated and not corroborated based on the type of computer game that was played. While MMORPG players and MOBA players thought that they practiced their reading skills and improved their reading skills as a result of the gaming period, FPS players thought that they didn't practice and improve their reading skills during the gaming period. By its nature, MMORPGs are mostly text-based. Thanks to being quest-based, these games provide players opportunities to practice their reading skills via reading the quests that are defined in the game. In addition to this, text-based communication that involves reading and writing elements is also common in MMORPGs. Though they lack the quest-based reading practice opportunities that MMORPGs provide, MOBAs share the prevalence of text-based communication with MMORPGs. It can be inferred as a result of the qualitative findings that MMORPGs and MOBAs can provide EFL learners opportunities to practice their reading skills. However, the findings suggest that FPS players don't have the same opportunities to practice their reading skills as much as MMORPG players

and MOBA players do. This issue might explain the lack of significant development of the reading skill as a result of the gaming period.

Another reason that might have led to the lack of significant proficiency development in the reading skill might be the limited amount of time. As noted in the qualitative findings, some of the participants reported that the time period was not enough for them to develop their target language skills to a significant extent. Considering the descriptive increase in the reading scores of the participants, a longer time period of multiplayer online gaming for developing EFL skills might have resulted in a statistically significant improvement in the target language reading skills of the participants.

The number of participants that took part in the study is among the factors that might have led to the lack of statistically significant improvement in the reading skill of the participants. A higher number of participants, especially a higher number of MOBA or MMORPG players, might have provided a significant outcome in terms of reading skills development. However, the fact that a higher number of participants might have resulted in a lower amount of time that the researcher could spend on providing feedback to the participants.

5.2.1 Implications for Multiplayer Online Computer Gaming and Target Language Reading Skills Development

The multiplayer online gaming for EFL skills development period didn't result in a significant development for EFL learners in terms of reading. However, there was a descriptive increase in the reading skills of the participants. In addition to this, the qualitative results of the study revealed the belief that MMORPG players and MOBA players practiced and improved their reading skills as a result of this period. Considering these findings, it can be stated that there is a possibility of providing ELF learners an opportunity to practice and improve target language reading skills by guiding them to play multiplayer online computer games that are text-based such as

Runescape, which the MMORPG players in this study played. In this respect, the study can provide implications for researchers, teachers and EFL learners.

As mentioned earlier, higher number of participants and a longer game-playing period might have resulted in a significant increase in the reading skills of the participants. Further research studies on the effects of multiplayer online computer games on target language reading skills development can be conducted with a higher number of participants and a longer gaming period to investigate the results more effectively. In addition to this, studies that solely focus on multiplayer online computer games and target language reading skills development can be implemented by using multiplayer online computer games in which text-based communication and in-game texts are prevalent to probe into the outcomes more effectively.

Besides the theoretical implications, the study also presents practical implications for EFL teachers and students. According to the qualitative findings of the study, MMORPG and MOBA games, which mostly bear text-based communications and quests, provided learners more opportunities to practice their reading skills. Considering this, teachers can provide learners playing multiplayer online computer games an opportunity to practice their target language reading skills by encouraging them to play multiplayer online computer games that depend on text-based communication and quests. In this way, students can regularly practice their reading skills by communicating with other players and reading in-game quests. According to the qualitative findings of the study, FPS players reported that they had limited opportunities to practice their reading skills. Intrinsically, FPS games are fast-paced and they mostly involve voice-based conversations with concise expressions. Extra tasks and activities are needed in order to provide FPS gamers more opportunities to practice their EFL reading skills. As an example, teachers can encourage EFL learners to read the texts in the interface of FPS games, such as the news, stories, announcements to help them improve their reading skills in addition to practicing their listening and speaking skills in the game.

5.3 The Effects of Multiplayer Online Computer Games on the Development of Target Language Writing Skills

In relation to the quantitative findings of the present study, the sub-question 2b, "Does multiplayer online computer gaming for developing EFL skills result in a significant development of target language skills based on writing?", was answered negatively. The statistical findings of the study revealed a descriptive increase in the writing scores of the participants from the pre-test to the post-test. However, there was no significant difference between the mean scores of the participants on the pre-test and the post-test on the writing sections according to the pairwise comparisons. In this respect, the quantitative findings didn't support the findings of Suh et. al. (2010), who reported an increase in the writing skills of the participants as a result of using a multiplayer online computer game.

Similar with the findings on the reading skill, the qualitative findings of the study had both positive and negative outcomes regarding the development of target language writing skills. While most MMOG and MMORPG players reported that they practiced and improved their writing skill during the gaming period, there was no such prevalence of the same notion among FPS and MOBA players. Considering the general features of the genres of multiplayer online computer games and the responses of the participants, it is probable that this situation arose as a result of the fact that MMOGs and MMORPGs involve more text-based communication compared to FPS and MOBA games. The limited opportunities to practice target language writing skill in some multiplayer online computer game genres might have led to the lack of a significant development in the writing skills of the participants as a result of the gaming period.

5.3.1 Implications for Multiplayer Online Computer Gaming and Target Language Writing Skills Development

As a result of the gaming period, there was no significant improvement in the writing skills of the participants. On the other hand, there was a descriptive increase in the

writing skills of the participants and the qualitative findings uncovered that the MMORPG players had the feeling that they practiced and improved their writing skills. Similar to the implications regarding the reading skill, when the findings are taken into consideration, it is possible to suggest that there is a probability of providing ELF learners chances to practice and improve EFL writing skills by encouraging them to play text-based multiplayer online computer games. From this point of view, the study can have implications for researchers, teachers and EFL learners.

The present study investigated the writing effects of multiplayer online computer games on EFL writing skills development of participants from different gaming backgrounds by using two standardized proficiency tests and a semi-structured interview. Further research studies can be conducted with participants from specific gaming backgrounds to investigate the effects of multiplayer online computer games on writing skills to a further extent. For example, a research study that focuses on the effects of MMORPGs, in which text based communications are plenty, on the development of target language skills. In addition to this, different research methods such as surveys and open-ended questionnaires can be used to collect data from a higher number of participants to have a deeper understanding on the effects of multiplayer online computer games on target language writing skills and the opinions of multiplayer gamer EFL learners towards online gaming and practicing writing skills.

The findings of the present research study can further provide practical implications for EFL teachers and learners in terms of using multiplayer online computer games and developing EFL skills. Considering the fact that there was no significant difference between the pre-test scores and the post-test scores of the participants on the writing tests and the fact that FPS players had limited opportunities to practice their writing skills compared to MMORPG and MOBA players, EFL learners that have problems practicing and improving their writing skills can be encouraged to play MMORPGs. Due to the fact that FPS games are mostly round-based, quick communication commands are generally preferred by players. However, MMORPGs are not round-

based and players have the opportunity to long conversations with other players for writing. Besides this, teachers can have one-on-one interviews with learners to provide feedback for their writing practice and development experiences to increase the benefit they get from playing multiplayer online computer games and developing their target language skills. Additionally, EFL learners that play FPS games can be given extra tasks to compensate for the limited in-game opportunities to practice their writing skills. For instance, these learners can be encouraged to communicate with their friends by using the game interface via writing messages in the game interface before starting to play the game.

5.4 The Effects of Multiplayer Online Computer Games on the Development of Target Language Listening Skills

According to the quantitative findings of the study, the research question 2c, "Does multiplayer online computer gaming for developing EFL skills result in a significant development of target language skills based on listening?" was answered positively. The findings revealed that there was a significant increase from the pre-test scores to the post-test scores of the participants on the listening test. Similar to the quantitative findings, the qualitative findings revealed that the majority of the participants, especially MMORPG players and FPS players, had the feeling that they practiced and improved their listening skills. MOBA players did not report that they practiced and improved their listening skills, however, they did not report that they had limited opportunities to practice their listening skills either. As a result, according to the qualitative findings of the study, the majority of the participants stated that they practiced and improved their listening skills during the gaming period. Both quantitative and qualitative findings of the study corroborate the findings of Suh et al. (2010) and Kongmee et al. (2012), who stated the positive effects of multiplayer online computer games on the development of target language listening skills.

5.4.1 Implications for Multiplayer Online Computer Gaming and Target Language Listening Skills Development

Considering the findings in the literature and the findings of the present study, it can be stated that multiplayer online computer games provide opportunities for EFL learners to practice and improve their listening skills. Within the scope of the present study, changing the gaming habits of the participants resulted in a significant development of target language listening skills development and a positive attitude towards playing multiplayer online computer games and developing target language skills. The findings of the present study can provide implications regarding multiplayer online gaming and EFL listening skills development to researchers, teachers and students.

The present study revealed statistical significance of the effects of multiplayer online computer games on EFL listening skills development. Further research studies can be conducted with more participants to increase the effectiveness of the evaluation. In addition, participants from different multiplayer online computer gaming platforms can be involved in studies to have a wider understanding of multiplayer online computer games and target language skills development. The qualitative findings revealed that MMORPG and FPS players had positive opinions towards practicing and improving their listening skills via multiplayer online computer games. On the other hand, MOBA players neither had positive nor negative opinions. A further research study can be carried out to investigate whether playing FPS games have a significant effect on the development of EFL listening skills. Different research methodologies and methods can be employed to investigate the effects of multiplayer online computer games on listening skill development from different perspectives.

Apart from the theoretical implications on listening skills development, the present study can also provide implications for teachers and EFL learners. Teachers can help EFL learners who play multiplayer online computer games practice and improve their listening skills by encouraging them to play multiplayer online computer games that give them the opportunity to practice their listening skills, especially MMORPGs and

FPS games, by changing their game-playing habits. These students can be encouraged to play in international servers to communicate with native and other non-native speakers in English, use the game interface in English to listen to the announcements, news and videos in the game interface, have regular interviews with the teacher to share their problems in terms of listening and try to find solutions to these problems with the teacher. As mentioned earlier, MOBA players neither showed positive nor negative opinions towards practicing listening skills by playing multiplayer online computer games. These EFL learners can be encouraged to be involved in other activities such as watching the videos in game interfaces, watch and listen famous players streaming in English and e-sports tournaments broadcasting in English to practice their listening skills.

5.5 The Effects of Multiplayer Online Computer Games on the Development of Target Language Speaking Skills

The findings of the study revealed that the research question 2d, "Does multiplayer online computer gaming for developing EFL skills result in a significant development of target language skills based on speaking?" was answered positively. The pairwise comparisons revealed that there was a significant increase in the scores of the participants on the speaking test. Therefore, it was found that there was a significant development of the speaking skills as a result of the gaming period. The quantitative findings corroborated the findings of Kongmee et al. (2012), Zheng et al. (2012), Newgarden and Zheng (2016), who pointed out the effects of multiplayer online computer games on the speaking development of EFL learners through communication activities.

Regarding the qualitative findings, FPS players thought that they practiced and improved their speaking skills while MMORPG and MOBA players thought that they had limited opportunities to practice speaking skills. These limited opportunities that restricted the speaking practice and development MMORPG and MOBA players

might have been one of the reasons that led to the underpowered significance of the speaking development on the test scores.

5.5.1 Implications for Multiplayer Online Computer Gaming and Target Language Speaking Skills Development

As mentioned earlier, the study indicated a significant increase in the performances of the participants in terms of the development of target language speaking skills. Considering the fact that the pairwise comparisons provided a significant increase and the fact that FPS players thought that they practiced and improved their speaking skills, multiplayer online computer games have a potential to provide speaking opportunities for EFL learners, especially for FPS players. In this respect, the findings of the study can provide implications for researchers, teachers and students.

Regarding the implications for researchers, further research studies can be conducted with more participants for a better analysis of multiplayer online computer games and target language skills development. In addition to this, further research studies can be conducted with FPS players to investigate the effects of multiplayer online computer games on the speaking development of EFL learners through a computer game genre that, according to the opinions of the participants, provides several opportunities for language learners to practice and improve their speaking skills. Additionally, further research studies can be conducted with MMORPG or MOBA players to investigate whether these game genres provide speaking development opportunities for EFL learners or not.

Regarding the practical implications for EFL teachers and learners, multiplayer online computer games might provide opportunities for EFL learners to practice their speaking skills. There was a significant development in terms of target language speaking skills and the qualitative findings uncovered positive opinions of FPS players towards practicing speaking skills via multiplayer online computer games. EFL learners who have problems at practicing speaking can be guided to play multiplayer

online computer games to practice their speaking skills. On the other hand, considering the fact that MMORPG and MOBA had limited opportunities to practice their speaking skills compared to FPS players, extra activities need to be created for them to practice their speaking skills.

5.6 Conclusion

This study was carried out in an effort to investigate the consequences of playing multiplayer online computer games with the purpose of developing EFL skills. In order to achieve this goal, sequential mixed-methods design was utilized. Quantitative and qualitative data was collected by 13 EFL learners who were students at a private university in Konya, Turkey. These learners had regular multiplayer online gaming habits. The participants were asked to play multiplayer online computer games for four weeks. In this gaming period, they were encouraged to change their gaming habits with the objective to increase practicing target language skills by applying simple changes such as changing game servers from national servers to international ones and using their game interfaces in English rather than in Turkish. The study analyzed the effectiveness of this gaming period quantitatively by applying a pre-test before the starting of the gaming period and after the post-test following the ending of the gaming period. In addition to this, the study inquired into the opinions of the participants towards the gaming period via a semi-structured interview at the end of the gaming period. The findings of the study uncovered that the gaming period resulted in a significant overall development of target language skills and a significant development in the listening skills and the speaking skills of the participants. The findings did not reveal individual significant development of target language reading and writing skills. Additionally, the findings revealed the *benefits* and *challenges* of the gaming period based on *the overall gaming experiences of the participants*, *teacher guidance during the gaming period*, *using an upper-limit during the gaming period*, *development of target language skills* and *additional comments*. Taking the findings and the limitations into consideration, the study suggested implications for researchers, teachers and EFL learners.

5.7 Limitations and Further Research

The study had specific limitations and most of these limitations have been stated under some heading in the discussion section. First of all, the study investigated the effectiveness of the gaming period and this gaming period lasted for four weeks. Considering the qualitative findings, in which some of the participants expressed the challenge of having a limited time period to improve their target language skills, it can be stated that the gaming period might not have provided enough time for some of the participants to improve their target language skills significantly. Further research studies can be carried out by increasing the time limit of the gaming period to evaluate the effectiveness of multiplayer online gaming and developing target language skills more effectively. Secondly, the study involved 13 participants. Further research studies can provide a better evaluation of the gaming period both quantitatively and qualitatively by involving more participants. However, as mentioned earlier, the amount of time that will be required to provide feedback to the participants during the gaming period should be taken into consideration. In addition to this, the present study involved three main multiplayer online computer game genres based on the gaming preferences of the participants; MMORPG, (including an MMOG), MOBA and FPS games. Further research studies can be conducted by involving participants who play multiplayer online computer games from different genres such as multiplayer online real-time strategy, sandbox and sports games. By doing this, more information can be gathered regarding the effects of other multiplayer online gaming genres on the overall development of target language skills and individual skills. Moreover, other data collection methodologies and methods can be employed to enrich the data and provide a better evaluation of the effectiveness of playing multiplayer online computer games to improve target language skills. The present study employed a mixed-methods research design in which quantitative data was collected through Cambridge PET sample tests and qualitative data was collected through a semi-structured interview. Further research studies can involve different quantitative and qualitative data collection methods and techniques.

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APPENDICES

APPENDIX A: INFORMED CONSENT FORM

The Use of Multiplayer Online Computer Games in Developing EFL Skills
Consent Form

The purpose of this study is to investigate the effects of using multiplayer online computer games on the development of foreign language skills. The participants of the study will be asked to participate in two English proficiency exams and share their ideas on using multiplayer online computer games via interviews. The data of this study will be kept confidential. Taking part in this study is totally on a voluntary basis. The participants can skip any questions that they don't want to answer or they can withdraw any time they want. In case of any further questions or problems, the participants can always contact the researcher and the advisor any time.

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Statement of consent: I have read the information above, and have received answers to any questions I asked. I consent to take part in the study.

Name and Surname:

Signature:

Date:

APPENDIX B: INTERVIEW QUESTIONS IN TURKISH

1. Çok oyunculu çevrimiçi bilgisayar oyunlarını yabancı dil becerilerini geliştirmek amacıyla oynamış olduğunuz bu süreç ile ilgili genel değerlendirmeleriniz nelerdir?

2. Süreç başında araştırmacı tarafından yapılan yönlendirmelerin ve bu süreçte araştırmacıya danıştığınız noktaların İngilizce becerileriniz üzerinde oluşturduğu etkiler hakkındaki düşünceleriniz nelerdir?

3. Süreç boyunca bilgisayar oyunlarının oynanma süresi konusunda bir üst limit koyulmuş olmasının, bilgisayar oyunlarının olumsuz etkilerini engelleme konusunda etkililiği hakkındaki düşünceleriniz nelerdir?

4. Süreç öncesinde ve sonrasında gerçekleştirilmiş olan ön sınav sonuçlarınız ile son sınav sonuçlarınız arasındaki puan farklarınız hakkındaki düşünceleriniz nelerdir? Sürecin iki sınav arasındaki olası puan değişiklikleri üzerindeki etkileri hakkındaki düşünceleriniz nelerdir?

5. Süreç ile ilgili paylaşmak istediğiniz varsa diğer düşüncelerinizi belirtiniz.

APPENDIX C: INTERVIEW QUESTIONS IN ENGLISH

1. What are your general opinions regarding this gaming period, in which you played multiplayer online computer games to improve your target language skills?

2. What are your opinions about the effects of the guidance provided by the researcher at the beginning of the gaming period and during the gaming period on the development of your English skills?

3. What are your opinions regarding the effectiveness of the upper limit of playing hours that was applied throughout the gaming period in preventing the negative effects of computer games?

4. What are your opinions about the potential differences between your performances on the pre-test and the post-test that were carried out before and after the gaming period? What are your opinions regarding the effects of the gaming period on the potential score differences on these tests?

5. Please state your other opinions regarding the period if you have any.

Pg.	Data	Translation
72	Çevrimiçi bilgisayar oyunlarının İngilizce becerilerini olumlu yönde etkilediğini düşünüyorum çünkü şahsım adına birçok kelime ve birçok telaffuzu bu noktada çevrimiçi bilgisayar oyunlarından öğrendim… (Katılımcı 4, MOBA oyuncusu)	I believe that multiplayer online computer games have a positive impact on English skills because I myself have learned a lot of words and a lot of pronunciations from computer games at this point… (Participant 4, MOBA player).
72	Öncelikle oyunlar kesinlikle bence yardımcı oluyor. Çünkü, oyun oynamak çünkü insanlara genel olarak zevk veren hoşuna giden bir şey. İnsanlar hani sevdiği bir şeyi yaparken hoşlandığı bir şeyi yaparken yanında bilgiler öğrenebiliyorlar yani. Çok basit bir şey yani atıyorum age of empires oynarsınız mitoloji oynarsınız ve bir anda yunan tanrılarını bilirsiniz. Günlük hayatta aklınızda bulunur bunları bilirsiniz. Oyunlarda aynı şekilde İngilizce terimler öğreniyoruz kelimeler öğreniyoruz çünkü ihtiyacımız var oyunu oynayabilmemiz için onları öğrenmemiz gerekiyor. Sonrasında günlük hayatımızda işimize yarayabiliyor gayet güzel bir	First of all, I believe that computer games are definitely helpful because playing computer games is something that entertains people and it is something that they like. While people are doing something that they like and something that they enjoy, they can also acquire some knowledge. Something very simple, for example, you play Age of Empires or Mythology and suddenly you know about the Greek gods. They stay on your mind in daily life and you know about them. In computer games, similarly, we learn English terms and words because we need them. We need to learn them in order to play the game. Then, they can be useful to us in daily life in a good way. That's why, they are definitely beneficial, I mean, they make a

	şekilde. Onun için kesinlikle yararlı yani bu gerçekten fark ediyor, dil gelişimi (Katılımcı 8, FPS oyuncusu).	difference terms of language development (Participant 8, FPS player).
72	… Ben çok kullanıyorum, yani, bu online oyunların gerçekten faydalı olduğunu düşünüyorum İngilizceyi geliştirmek için. Kesinlikle faydası var (Katılımcı 9, MOBA oyuncusu).	… I use them a lot, I mean, I think that these computer games are definitely beneficial to improve English. They are definitely useful (Participant 9, MOBA player).
72	Bu sürecin İngilizce öğrenimine faydası olduğunu düşünüyorum. Çünkü oyun içerisinde sürekli İngilizce kullanıyoruz, yönlendirmeler ve görevler İngilizce tanımlanıyor… (Katılımcı 10, MMORPG oyuncusu).	I believe that this period is beneficial in terms of learning English because we always use English in the game and the instructions and quests are described in English… (Participant 10, MMORPG player).
73	… Ki sonradan insanın oynadıkça oynayası geliyor yani ister istemez bilinç altına işliyor o İngilizce kelimeler falan (Katılımcı 7, MMORPG oyuncusu).	… The more you play, the more you want to play and whether you want it or not, those English words etc. are imbedded on your mind (Participant 7, MMORPG player).
73	… Oyunlarda aynı şekilde İngilizce terimler öğreniyoruz kelimeler öğreniyoruz çünkü ihtiyacımız var oyunu oynayabilmemiz için onları öğrenmemiz gerekiyor… (Katılımcı 8, FPS oyuncusu).	… In computer games, similarly, we learn English terms and words because we need them. We need to learn them in order to play the game… (Participant 8, FPS player).

73	… İngiliz server'larında örneğin İngilizlerle İngilizce konuşuyorsun. Onları anlamaya çalışıyorsun, bir şey demeye çalışıp diyemediğinde giriyorsun Google'a bakıyorsun yani yeni kelimeler öğreniyorsun böylece… (Katılımcı 9, MOBA oyuncusu).	… For example, in English servers, you speak English to English people. You try to understand them, when you try to say something but you can't, you check Google and thus you learn new words (Paticipant 9, MOBA player).
73	… Oyun içerisinde sürekli İngilizce kullanıyoruz, yönlendirmeler ve görevler İngilizce tanımlanıyor. Bunları gerçekleştirmek için kelimelere bakmamız gerekiyor. Özellikle kelime haznesinde çok büyük bir zenginlik kazandırıyor… (Katılımcı 10, MMORPG oyuncusu).	… We always use English in the game, the instructions and the quests are described in English. In order to fulfill them, we need to look up the words. It especially provides a great enhancement in vocabulary… (Participant 10, MMORPG player).
73	… Oyunu oynadığım süreçte bana kelime yönünden çok faydalı olduğunu düşünüyorum. Çünkü ben yeni öğrendiğim kelimeleri kelime defterime not ettim. Oyuncuların chat kısmındaki konuşmalarını takip ettim. Orada neler konuştuklarına hangi kelimeleri kullandıklarına dikkat ettim. O yönden bana faydası oldu (Katılımcı 11, MMORPG oyuncusu).	… I think it was really helpful for me in terms of vocabulary while I was playing because I noted down the new words I learned to my vocabulary notebook. I kept track of the conversations of players on chat section. I paid attention to what they talked about and which words they used. In that way, it was beneficial to me (Participant 11, MMORPG player).

74	… Sadece yazışma üzerinden devam ediyoruz. Oyunun da çok fazla kullanıcısı olmadığı için çok fazla kişiye de hitap edemiyorsun. Ama belirli kişilerle konuşma imkanı buldum yazışarak… (Katılımcı 5, MMOG oyuncusu).	… We go on only by writing. Due to the fact that the game doesn't have many players, you can't address many people. But I had the chance to talk to specific people via writing… (Participant 5, MMOG player).
74	Bence çok olumlu yönde ilerleme kaydedebiliriz. Çünkü oradaki konuşmalarda okumaya veya listening'e yönelik daha güzel ve olumlu sonuçlar olabileceğini düşünüyorum… (Katılımcı 7, MMORPG oyuncusu).	I think we can progress in a positive way because I think that there can be more positive results in terms of reading and listening in the conversations there… (Participant 7, MMORPG player).
74	… bu çok oyunculu çevrimiçi bilgisayar oyunları, şimdi hem konuşma sistemi var, mikrofona basıyorsun konuşuyorsun. İngiliz server'larında örneğin İngilizlerle İngilizce konuşuyorsun… (Katılımcı 9, MOBA oyuncusu).	… in these multiplayer online computer games, there is a speaking system, you press the microphone and speak. In English servers, for example, you speak English with English people… (Participant 9, MOBA player).
74	İyiydi. Şey, zaten İngilizce kullanmayı seviyordum, dersi İngilizce yapmayı. Yardımcı oluyor zaten, İngilizce konuşmaya çalışınca faydası oldu (Katılımcı 12, FPS oyuncusu).	It was good. I mean, I already liked using English, having the lesson in English. They already help, it was beneficial when I tried to speak English (Participant 12, FPS player).
74	… İlk başladığımda oyunda zorluklar oldu benim için yani oradaki karakter bile bana sinirlendi bir süre sonra. Çünkü	… At first, there were some challenges for me, I mean, after some time even the character there got angry with me because I couldn't understand and I

	anlamıyordum ve ne yapacağımı bilemedim, hareket bile edemedim… (Katılımcı 3, MMORPG oyuncusu).	didn't know what to do. I couldn't even move… (Participant 3, MMORPG player).
75	Benim çok fazla meşgul olmamdan dolayı süreç benim için kısa oldu… (Katılımcı 6, MMORPG oyuncusu).	Due to the fact that I was quite busy, the period was short for me… (Participant 6, MMORPG player).
75	… Yani herhangi bir görev yok. Okumanı geliştirecek herhangi bir şey yok yani… (Katılımcı 1, FPS oyuncusu).	… I mean there aren't any quests, there isn't anything to improve your reading… (Participant 1, FPS player).
75	… Çünkü kullanıldıkça gelişen bir dil olduğu için İngilizce, speaking ve listening yapamadığım için sadece reading ve writing üzerine beceri geliştirme imkanım olmuştur diye düşünüyorum (Katılımcı 5, MMOG oyuncusu).	… Because of the fact that English is a language that improves as it is used and due to the fact that I couldn't practice speaking and listening, I believe that I only had the chance to improve my reading and writing skills (Participant 5, MMOG player).
75	… Çünkü ben kendi oynadığım oyunda reading ve writing yaparak geliştirdiğimi düşündüğüme göre herhalde speaking ve listenin yapan bir insan yani sonuçta bu dili kullanan bir insandan birşeyler duyup dinleyeceği için yani sadece duyup dinlemesi bile konuşma becerisi katar (Katılımcı 5, MMOG oyuncusu).	… Since I believe that I improved my reading and writing in the computer game that I played, probably a person who practices speaking and listening, because he or she will hear and listen to some things from a person who uses this language, even only hearing and listening will provide the ability to speak (Participant 5, MMOG player).

77	… Çünkü ben oyunu Türkiye serverında oynuyordum daha öncesinde. Bu süreçte İngiltere serverına geçtim. Türk serverında yabancı oyuncu bulma ihtimali yok bu yüzden İngilizce konuşma imkanım da yoktu kimseyle… Bu yüzden İngilizcemin biraz daha geliştiğini düşünüyorum (Katılımcı 5, MMOG ou	… I was playing the game on Turkish server before. During this period, I switched to the English server. In the Turkish server, there is not a possibility of finding a foreign player, that's why I didn't have the chance to speak English with anybody … Thus, I think that my English improved a bit more (Participant 5, MMOG player).
77	… İlk başta araştırmacı yönlendirmeseydi, bilinçsiz bir oynama süreci olacaktı. Ne yapacağınızı bilmiyorsunuz amaçsız bir şekilde oynamak ki onun çok faydalı olacağını düşünmüyorum zaten. Ama araştırmacının yönlendirmesiyle ve takıldığınız noktalarda size yardımcı olmasıyla tabi ki olumlu yönleri olmuştur. Bunun da ilerlemeyi daha fazla hızlandıracağını düşünüyorum. Umarım hızlandırmıştır (Katılımcı 7, MMORPG oyuncusu).	… At first, if the researcher hadn't guided, it would have been an unconscious playing process. You don't know what to do, playing without an aim, I don't think that it will be quite beneficial. But with the guidance of the researcher and with the help that the researcher provided on the points that you were stuck with, of course there were positive aspects. I think that this will increase the improvement. I hope it did (Participant 7, MMORPG player).
77	Tabi yabancı bir oyunu Türklerle oynamak pek bir gelişim sağlamayacaktır size ama hani yabancı insanlarla, farklı ülkelerden farklı dillerde insanlarla oynamak, tabi doğal olarak ortak	Of course, playing a computer game with Turks won't provide a huge development to you, but, playing with foreigners speaking different languages, naturally the common language is English, benefits a lot. I

		dil İngilizce ve tabi ki de fazlasıyla yararlı oluyor. Hani, İngilizlerle yabancılarla oynamak, onlarla iletişim kurmak için İngilizceye ihtiyacınız var, bazen oyunda kullandığınız terimleri kullanıyorsunuz. Onların üzerine bazı şeyler eklemeniz gerekiyor. Yeni şeyler öğreniyorsunuz. Belki onlardan bir şeyler öğreniyorsunuz. Onun için kesinlikle bu yönlendirmeler gayet işe yaradı (Katılımcı 8, FPS oyuncusu).	mean, playing with the English and foreigners, you need English to communicate with them, sometimes you use the terms that you use in the game. You have to add something to them. You learn something new. Maybe you learn something from them. That's why this guidance was quite helpful (Participant 8, FPS player).
78	Bunların daha faydalı olabileceğini düşünüyorum. Şimdi İngilizce oyunları oynamak isteyen kişi o oyundan zevk alıyorsa, bazı oyunlar oluyor ki Türkçe olmuyor, İngilizce'si sırf oluyor, İngilizcesini oynamak zorunda kalıyor. Böylece ne oluyor, İngilizce ara yüzde mesela bir tane rol oyunu örneğin. Adamın illaki öğrenmesi lazım o kelimeleri. Bilmediği kelimeler çıkıyor. Rol yapma oyunlarında mesela ne oluyor, kılıç yerden buluyor. o kılıcın belirli özellikleri var orada İngilizce yazıyor. Yani	I think these can be more beneficial. If the person who plays computer games in English enjoys that game, some games aren't in Turkish but only in English, he or she has to play in English. Therefore, what happens, in English interface, for example a role-playing game, that person has to learn those words in any case. Unknown words appear. For example, what happens in role-playing games, he or she finds a sword on the ground. That sword has specific features written in English. I mean, I believe that it helps (Participant 9, MOBA player).

	geliştirdiğine inanıyorum (Katılımcı 9, MOBA oyuncusu).	
78	Ya açıkçası araştırmacı ile birebir göz temasın olmadığı sürece bir şey sormak istemiyor insan çünkü o bekleme süresi uzun olduğu için ve o süreyi internette kısaltabileceğini, sormak istediğin o basit şeyi internette bulabileceğini bildiğin için araştırmacıya çok danışmıyor… (Katılımcı 2, MOBA oyuncusu).	Actually, I don't want to ask something unless I make eye contact with the researcher because the waiting time is long and I can find the simple thing that you want to ask on the Internet and thus shorten that waiting time, I don't consult the researcher much… (Participant 2, MOBA player).
78	Ben zaten oyunlardan öğreneceğimi öğrendim gibi. Orada bir gramer yarışması falan yapılmadığı için belirli bir süre sonra bu noktada ilerlemiyorsun. Ancak seviyesi biraz daha düşük olanlar için illaki faydası olur (Katılımcı 13, MOBA oyuncusu).	I think I have learned what I am supposed to learn from computer games. Due to the fact that there is no gaming contest, after some time, you can't proceed. However, I think that it helps lower proficiency learners for sure (Participant 13, MOBA player).
80	Engeller çünkü zaten hani oyunda hani bazı bölümler olduğu için bir süre sonra şeye geliyor diğer şeyde yani bölümde ne var. Hani nasıl bir görev verilecek merak ediliyor. Engellenmesi iyi bir şey çünkü öğrenci için bağımlılık yaparsa ondan başka bir şey düşünemez hale gelebiliyoruz. O yüzden engellenmesi bir öğrenci için veya illa bir öğrenci olmasına gerek yok	It prevents, because there are some chapters in the game, after a while, it comes to this point, what is there in the next chapter? What type of quest will be given is wondered. Prevention is something good because if it causes addiction for the student, we may become thinking about it all the time. That's why, prevention is important not only for a student but also for a normal

	normal bir insan için de önemli (Katılımcı 3, MMORPG oyuncusu).	person (Participant 3, MMORPG player).
80	Bence engeller. Ben oyun bağımlısı bir insan değilim çok da oynamıyorum. Sadece haftada belirli sürelerde. Zaten oyun sürekli oynanabilecek bir oyun da değil. Sıkıyor bir süreden sonra. Ama oyun bağımlısı insanlar var. Bu insanalara bir üst limit belirlemek bence çok doğru bir davranış olur. Çünkü hani var benim arkadaşlarım arasında diyalogumuzun bittiği insanlar var oyunlar yüzünden. Bu yüzden üst limit alt limit güzel çünkü hem insanları oynamaya teşvik eder çünkü insanların oyun da oynaması gerekiyor gerçekten sonuçta ama üst limitin olması da onu kısıtlamak gerektiği anlamına gelir (Katılımcı 5, MMOG oyuncusu).	I think it prevents. I'm not a gaming-addicted person, I don't play much. Only in certain periods in a week. Besides, the game isn't a game that can be played constantly. After some time, it bores me. But there are gaming-addicted people. I think it is a proper act to set an upper limit for these people because there are some people among my friends that I no longer communicate due to games. That's why an upper limit and a lower limit are good because it both encourages people to play, since they need to play actually, and the presence of an upper limit means that needs to be limited (Participant 5, MMOG player).
80	Tabi ki de engeller. Zaten günümüz problemlerinden biri gençlerin oyunlara bağımlı olması. Böyle bir üst limit koymak ve bu limiti kontrol edebilmek gayet önemli bir şey. Çünkü günlük hayatımızı ve sosyal hayatımızı da etkiler. Üst limit gerçekten kontrol de	Of course, it prevents. One of the problems of today's youth is gaming addiction. Putting such an upper limit and controlling it is quite important because it will also influence our daily life and social life. An upper limit, especially if we can control it, is

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	edebilirsek gayet bizim için de mantıklı bir şey (Katılımcı 8, FPS player).	something very logical for us (Participant 8, FPS player).
81	Ya, o, bize pek, çok işlemez, yani bize dediğim yaşça böyle 20 üzeri 18 üzeri kişilere. Ya oyunun ortasındasın, en zevkli yeri, arkadaşlarınla gülüp eğleniyorsun. Benim sürem bitti deyip çıkamazsın yani. Yani o yüzden üst limit bize çok değil. Zaten zararlı olabilecek derecede oynamıyoruz. Ayırıyoruz bir şeyleri, iyiyi kötüyü. O yüzden bize çok mantıklı değil. Ama küçük yaştaki çocuklar için üst limit koyulması lazım çünkü çocuklar sanal ortamla gerçek hayatı ayrıştıramıyor bazen. Ailelerinin onlara göstermesi öğretmesi lazım. Onlara üst limit mantıklı ama bizim için olmaz (Katılımcı 2, MOBA oyuncusu).	It isn't very effective for us, I mean, for people over 18 or 20. You are at the middle of a game, the most enjoyable part, you're laughing and having fun with your friends. You can't say my time is up and leave. I mean, due to that, an upper limit isn't for us. Besides, we don't play it at a harmful level. We can differentiate things, the good and the bad. That's why it isn't very logical to us. However, for kids at lower ages, an upper limit must be set because sometimes children cannot differentiate real life and virtual environments. Their families should show them and teach them. The upper limit is logical for them but not for us (Participant 2, MOBA player).
81	Zaten yaptığımız yaş aralığı zaten olgun bir yaş aralığı. Yani eskiden çok fazla bağımlılık yaratabilen oyunlar vardı da. Eğer bağımlı olan bir insan olsaydı sürecin çok fazla etki edebileceğini düşünmüyorum yani her türlü bağımlılık yapardı da. Bu tarz bu yaş aralığındaki kişilerde çok fazla bağımlılık	The age range is already a grown-up age range. In the past, there were some games could cause a lot of addiction. If there was an addicted person, I don't think that the process could provide much effect, I mean, it could have caused addiction anyway. I don't think it can cause addiction for people at such

	yapabileceğini düşünmüyorum (Katılımcı 6, MMORPG oyuncusu).	an age range (Participant 6, MMORPG player).
81	… Bence olumsuz olarak şu şekilde olur, İngilizcen daha yavaş gelişir. İllaki, çünkü oyuna ne kadar emek harcarsan ne kadar daha çok İngilizce kelimeler görürsen o kadar daha hızlı şekilde İngilizcen gelişir. Öyle düşünüyorum. Ayrıca bağımlı yapacağını sanmıyorum. Yani kişiden kişiye değişiyor. Bağımlı olan kişiler var olmayan kişiler var (Katılımcı 9, MOBA oyuncusu).	… I think it can be harmful in this way, your English improves more slowly because the more you put an effort, the more English words you see, the faster your English improves. I think so. Besides, I don't think it can cause addiction. I mean, it varies from person to person. There are addicted people and there are non-addicted people (Participant 9, MOBA player).
83	… Çünkü zaten oradaki görevleri yaptığımız için genelde reading ve listening'e yönelik pratikler olduğu için onların daha çok gelişmiş olacağını düşünüyorum (Katılımcı 7, MMORPG oyuncusu).	… Since we complete the quests there and generally there are reading-oriented and listening oriented practices, I think that that they improved more (Participant 7, MMORPG player).
83	Kendi açımdan konuşacak olursam kesinlikle hani listening ve speaking'imin geliştiğini düşünüyorum. Çünkü sesli iletişim üzerinde duran oyunlar oynadım ve hani doğal olarak hani aksanları, konuşma şekilleri bunlar daha ön plana çıktı öğrenme açısından… (Katılımcı 8, FPS oyuncusu).	According to my point of view, I definitely think that my listening and speaking improved because I played games that focused on oral communication and naturally accents and speaking styles came into prominence in terms of learning… (Participant 8, FPS player).

83	Bence, daha çok ağırlıklı olarak anlama kapasitesi gelişir. Çünkü İngilizce oyunlarda sürekli İngilizce kelimeler oluyor. Bilmediğin kelimeler karşına çıkıyor. İster istemez bunları araştırıyorsun ve öğreniyorsun anlamlarını. Bunları sürekli oynadığın için sürekli gördüğün için bir süre sonra artık kafada kalıyor, öğrenmiş oluyorsun, ezberlemiş oluyorsun kelimeleri. Sınavda da bazen orada gördüğün kelimeye bakıyorsun sınavda da çıkıyor. Daha iyi anlıyorsun yani (Katılımcı 9, MOBA oyuncusu).	In my opinion, comprehension capacity increases the most because there are always English words in computer games. You encounter unknown words. Whether you want it or not, you search them and you learn their meanings. Since you always play them and see them, after a period of time, they remain on your mind, you learn them and you memorize them. In the exam, you look at the words you saw there and they also come up in the exam. I mean, you understand better (Participant 9, MOBA player).
82	Aslında speaking ve writing'de çok fazla ilerleme olduğunu düşünmüyorum. Ama ben reading de çok yapmadım. Gerçi açıklamaları yaparken reading yapıyoruz ama genelde oradaki konuşmaları daha çok dinlemeyle yaptığım için listening bölümünde daha iyi bir performans çıkacağını düşünüyorum (Katılımcı 7, MMORPG oyuncusu).	Actually, I don't think that there was a lot of improvement in speaking and writing. But I didn't do reading much either. In fact, we do reading while reading the instructions but generally due to the fact that I did those conversations there more via listening, I think that there will be a better performance in listening part (Participant 7, MMORPG player).
84	… Örneğin CS:GO'da yazmanıza gerek yoktur. Karşı takımla iletişim kurmak için yazarsınız anca. Onun dışında hep sesli	… For example, in CSGO, you don't need to write. You only write to communicate with your opponent. Except that, you always have oral

	iletişim kuracaksınız. Onun için hani yazmaya ihtiyaç duymazsınız. writing'inizde bir gelişim göremezsiniz… (Katılımcı 8, FPS oyuncusu).	communication. That's why you don't need to write. You can't make progress in your writing … (Participant 8, FPS player).
84	… Listening noktasında herhalde faydalanmamız daha azdır. Yazıyoruz genellikle tanımadığımız insanlara İngilizce olarak. Speaking de aynı şekilde fazla konuşmuyoruz… (Katılımcı 13, MOBA oyuncusu).	… In terms of listening, I think our utilization is less. We generally write to the people we don't know in English. Similarly, we don't speak much…. (Participant 13, MOBA player).
85	Gelişirdi, zaten şöyle bir şey var, listening'i geliştirme veya konuşmayı geliştirme için karşılıklı konuşmak gerek. Hani diyoruz ya İngiltere'ye veya başka bir yere gitsek zorunlu olduğumuz için mecbur konuşmak zorundayız ve gelişecek. Yani öyle bir şey olabilirdi ve o ortam oluşabilirdi ve bu yüzden gelişirdi (Katılımcı 3, MMORPG oyuncusu).	I think they would improve, I mean, in order to improve listening and speaking, you need dual conversation. We say, if we go to England or to another place, they will improve because we will need to speak because we have to. I mean, something like that could have happened and that environment could have appeared and that's why they would improve (Participant 3, MMORPG player).
85	… Ama role-playde mesela sürekli bir şeyler okumanız gerekiyor size belirli questler veriyor. Questleri okumanız gerekiyor. Onun için de hani reading'iniz gelişiyor. Aynı şekilde çoğu MMORPG'de sesli iletişim yok. Bunun için de insanlarla ticaret sistemi olsun	… For example in RPG, you always have to read something, it gives specific quests to you. You need to read the quests. That's why your reading improves. Similarly, most MMORPGs don't have voice communication. That's why, for example in trading system, you have to communicate via

	falan bunlarda yazarak writing ile iletişim kurmanız gerekiyor. Onun için de doğal olarak hani writing gelişiyor (Katılımcı 8, FPS oyuncusu).	writing. Therefore, naturally, writing improves (Participant 8, FPS player).
85	Bence çıkardı. Mesela stratejik savaş oyunları mesela Civilization gibi oyunlar oynasaydım orada biraz daha konuşacağımız daha çok konular olurdu mesela neyi inşa edeceksin hangi teknolojiyi üreteceksin gibi şeyler olunca konuşacağın ve yazacağın şeyler daha çok. Ama LoL gibi bir oyunda "oraya git", "bekle", "geliyorum", "oyunu bitir" gibi şeylerden başka bir şey konuşmadığımız için gelişme de ona göre az olacaktır diye düşünüyorum (Katılımcı 13, MOBA oyuncusu).	I think it would have appeared. For example, strategic war games, for instance if I had played computer games like Civilization, there would have been more topics to talk about, to exemplify, what you will construct, which technology you will produce, you have more things to talk and write about. But in a game like LoL, improvement would be less because you don't talk about anything except "go", "wait", "I'm coming", "finish the game" (Participant 13, MOBA player).
87	… Böyle bir konuşma ortamını normal hayatta belki sosyal medyada bulabilirim ancak bunun dışında zor (Katılımcı 1, FPS oyuncusu).	… I can find such a communication environment in real life maybe on social media except that, it is very hard (Participant 1, FPS player).
87	Ben çocukluğumdan beri oyun oynarım. Çocukluğumdan beri bir İngilizce bilgim varsa yeteri kadar, kesinlikle oynadığım oyunlardan kaynaklı. Küçükken çocuksunuz hani oyun oynamayı seviyorsunuz.	I have been playing computer games since I was a kid. If I have adequate English knowledge, it is definitely thanks to the computer games I have played since childhood. When you are little, you like playing games. You

	İlgi duyuyorsunuz. Hani onları İngilizce oynamak ve anlamak istiyorsunuz. Bunun için de hani kelimeleri öğreniyorsunuz ediyorsunuz ve bunları severek yaptığınız için de aklınızda kalıyor bunlar, zorla bir şey olmadığı için kendi isteğinizle yaptığınız için. Bunun için de kesinlikle oyunların İngilizce'ye dil gelişimine yararı var yani (Katılımcı 8, FPS oyuncusu).	have an interest in them. I mean, you want to play them and you want to understand them. To do this, you learn words and due to the fact that you like doing it and it is not something compulsory but with your own will, they remain on your mind. That's why computer games are definitely beneficial for English language development (Participant 8, FPS player).
87	Süreç benim için verimli geçtiğini düşünüyorum. Yani oyun içerisinde insan sadece oyun için değil de birşeyler kazanmak için yani oyun oynamak için değil de biraz İngilizce becerilerimi artırmak için girdim ben kendi açımdan. O yüzden benim için daha verimli olmuştur diğer insanlara göre… (Katılımcı 5, MMOG oyuncusu).	I think that this period was beneficial for me. I mean, I myself played not only to play computer games but also to improve my English skills to a certain extent. That's why I think it was more beneficial for me compared to others… (Participant 5, MMOG player).
87	Bu süreçte İngilizcemi elimden geldiğince geliştirmeye çalıştım. Yabancılarla muhabbet ettim. Yabancılarla muhabbet ederken daha kolay anlayabiliyorum. Onlarla daha kolay iletişim kurabiliyorum… (Katılımcı 1, FPS oyuncusu).	I did my best to improve my English in this period. I talked to foreigners. I can understand better while talking to foreigners. I can communicate with them more easily… (Participant 1, FPS player).

87	Bence güzel bir araştırmaydı ve etkiliydi. Normalinden daha fazla konuşmuş oldum oyun sırasında (Katılımcı 13, MOBA oyuncusu).	I think it was a good and effective study. I talked more than normal while playing (Participant 13, MOBA player).
88	… Ben mesela multiplayer oyun az oynuyorum, daha çok single player story oynuyorum. Ama bu süreçte kabul edilmedi… (Katılımcı 2, MOBA oyuncusu).	… For example, I don't play multiplayer online games much, I mostly play single player story games. But these games weren't accepted in this period… (Participant 2 MOBA player).
88	… Bu süreç İngilizce becerisini artırmak için yeterli mi diye sorarsanız. Yani bu süreç bir yere kadar yeterli. Ama onun üstüne insanların gerçekten düşmesi gerekir… (Katılımcı 5, MMOG oyuncusu).	… If you ask me whether this period is enough for improving English skills, I mean, this period is effective to a certain extent. But people need to be persistent on it… (Participant 5, MMOG player).

APPENDIX E: SAMPLE CODINGS BY THE RESEARCHER

A part of the data coded by the researcher:

Raw Data	Codes	Theme/Category
Participant 8:		
Q1: <u>Öncelikle oyunlar kesinlikle bence yardımcı oluyor. Çünkü, oyun oynamak çünkü insanlara genel olarak zevk veren hoşuna giden bir şey. İnsanlar hani sevdiği bir şeyi yaparken hoşlandığı bir şeyi yaparken yanında bilgiler öğrenebiliyorlar yani.</u> Çok basit bir şey yani atıyorum age of empires oynarsınız mitoloji oynarsınız ve bir anda yunan tanrılarını bilirsiniz. <u>Günlük hayatta aklınızda bulunur bunları bilirsiniz. Oyunlarda aynı şekilde İngilizce terimler öğreniyoruz kelimeler öğreniyoruz çünkü ihtiyacımız var oyunu oynayabilmemiz için onları öğrenmemiz gerekiyor.</u> Sonrasında günlük hayatımızda işimize yarayabiliyor gayet güzel bir şekilde. <u>Onun için kesinlikle yararlı yani bu gerçekten fark ediyor, dil gelişimi.</u>	Learning and having fun Vocabulary development Improvement in English	Overall gaming experiences of the participants / Benefits Overall gaming experiences of the participants / Benefits Overall gaming experiences of the participants / Benefits
Q2: <u>Şimdi tabi yabancı bir oyunu Türklerle oynamak pek bir gelişim sağlamayacaktır size ama hani yabancı insanlarla, farklı ülkelerden farklı dillerde insanlarla oynamak, tabi doğal olarak ortak dil İngilizce ve tabi ki</u>		

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de fazlasıyla yararlı oluyor. Hani, İngilizlerle yabancılarla oynamak, onlarla iletişim kurmak için İngilizceye ihtiyacınız var, bazen oyunda kullandığınız terimleri kullanıyorsunuz. Onların üzerine bazı şeyler eklemeniz gerekiyor. Yeni şeyler öğreniyorsunuz. Belki onlardan bir şeyler öğreniyorsunuz. Onun için kesinlikle bu yönlendirmeler gayet işe yaradı.	Effects of changing servers	Teacher guidance during the gaming period / Benefits
Q3: Tabi ki de kaldırır. Zaten günümüz problemlerinden biri gençlerin oyunlara bağımlı olması. Böyle bir üst limit koymak ve bu limiti kontrol edebilmek gayet önemli bir şey. Çünkü günlük hayatımızı ve sosyal hayatımızı da etkiler. Üst limit gerçekten kontrol de edebilirsek gayet bizim için de mantıklı bir şey.	Preventing addiction	Using an upper limit during the gaming period / Benefits
Q4: Kendi açımdan konuşacak olursam kesinlikle hani listening ve speaking'imin geliştiğini düşünüyorum. Çünkü sesli iletişim üzerinde duran oyunlar oynadım ve hani doğal olarak hani aksanları, konuşma şekilleri bunlar daha ön plana çıktı öğrenme açısından. Ondan sonra mesela speaking'im hiç yoktu diyebilirim. Oyunlar sayesinde kendimi geliştirebildiğimi düşünüyorum. Bu iki sınav arasında da bu ikisi kesinlikle ve kesinlikle gelişti. Writing hani birazcık hafızaya dayalı olduğunu düşünüyorum. Writing'im illaki	Better performance in speaking. Better performance in listening.	Development of target language skills / Benefits

gelişmiştir tabi ki de ancak benim açımdan, yani benim kendimde fark edebildiğim, bu ikisi, listening ve speaking, kesinlikle gelişmiştir. Q4.1: (Farklı bir oyunda) Kesinlikle gelişim sağlardım. Tabi ki öyle, kesinlikle gelişim sağlardım. <u>Örneğin CS:GO'da yazmanıza gerek yoktur.</u> Karşı takımla iletişim kurmak için yazarsınız anca. Onun dışında hep sesli iletişim kuracaksınız. Onun için hani yazmaya ihtiyaç duymazsınız. Writing'inizde bir gelişim göremezsiniz. Ama role-playde mesela sürekli bir şeyler okumanız gerekiyor size belirli questler veriyor. Questleri okumanız gerekiyor. Onun için de hani reading'iniz gelişiyor. Aynı şekilde çoğu MMORPG'de sesli iletişim yok. Bunun için de insanlarla ticaret sistemi olsun falan bunlarda yazarak writing ile iletişim kurmanız gerekiyor. Onun için de doğal olarak hani writing gelişiyor. Q5: <u>Ben çocukluğumdan beri oyun oynarım. Çocukluğumdan beri bir İngilizce bilgim varsa yeteri kadar, kesinlikle oynadığım oyunlardan kaynaklı. Küçükken çocuksunuz hani oyun oynamayı seviyorsunuz. İlgi duyuyorsunuz. Hani onları İngilizce oynamak ve anlamak istiyorsunuz. Bunun için de hani kelimeleri öğreniyorsunuz ediyorsunuz ve</u>	Lack of writing practice Improvement in English	Development of target language skills / Challenges Additional comments / Benefits

bunları severek yaptığınız için de aklınızda kalıyor bunlar, zorla bir şey olmadığı için kendi isteğinizle yaptığınız için. Bunun için de kesinlikle oyunların İngilizce'ye dil gelişimine yararı var yani.	Learning and having fun	Additional comments / Benefits
Raw Data Translated in English	**Code**	**Theme/Category**
Participant 8: Q1: First of all, I believe that computer games are definitely helpful because playing computer games is something that entertains people and it is something that they like. <u>While people are doing something that they like and something that they enjoy, they can also acquire some knowledge.</u> Something very simple, for example, you play Age of Empires or Mythology and suddenly you know about the Greek gods. <u>They stay on your mind in daily life and you know about them. In computer games, similarly, we learn English terms and words because we need them. We need to learn them in order to play the game.</u> Then, they can be useful to us in daily life in a good way. <u>That's why, they are definitely beneficial, I mean, they make a difference in terms of language development.</u> Q2. <u>Of course, playing a computer game with Turks won't provide a huge development to you, but, playing with foreigners speaking</u>	Learning and having fun Vocabulary development Improvement in English	Overall gaming experiences of the participants / Benefits Overall gaming experiences of the participants / Benefits Overall gaming experiences of the participants / Benefits.

different languages, naturally the common language is English, benefits a lot. I mean, playing with the English and foreigners, you need English to communicate with them, sometimes you use the terms that you use in the game. You have to add something to them. You learn something new. Maybe you learn something from them. That's why this guidance was quite helpful.	Effects of changing servers	Teacher guidance during the gaming period / Benefits
Q3. Of course, it prevents. One of the problems of today's youth is gaming addiction. Putting such an upper limit and controlling it is quite important because it will also influence our daily life and social life. An upper limit, especially if we can control it, is something very logical for us.	Preventing addiction	Using an upper limit during the gaming period / Benefits
Q4: According to my point of view, I definitely think that my listening and speaking improved because I played games that focused on oral communication and naturally accents and speaking styles came into prominence in terms of learning. For instance, I can say that I had no speaking skills. I belive that I was able to improve myself thanks to computer games. Between these two exams, I definitely think that these two skills improved. I think that writing depends on the memory to a certain extent. My writing probably developed but according	Better performance in speaking. Better performance in listening.	Development of target language skills / Benefits

to my point of view, I mean as far as I can understand, these two, listening and speaking, definitely improved.		
Q4.1: (In another game) Definitely I would have improved myself. Of course, I would have improved myself for sure. <u>For example, in CSGO, you don't need to write.</u> You only write to communicate with your opponent. Except that, you always have oral communication. That's why you don't need to write. You can't make progress in your writing. For example, in RPG, you always have to read something, it gives specific quests to you. You need to read the quests. That's why your reading improves. Similarly, most MMORPGs don't have voice communication. That's why, for example in trading system, you have to communicate via writing. Therefore, naturally, writing improves.	Lack of writing practice	Development of target language skills / Challenges
Q5: <u>I have been playing computer games since I was a kid. If I have adequate English knowledge, it is definitely thanks to the computer games I have played since childhood. When you are little, you like playing games. You have an interest in them. I mean, you want to play them and you want to understand them. To do this, you learn words and due to the fact that you like doing</u>	Improvement in English	Additional comments / Benefits

it and it is not something compulsory but with your own will, they remain on your mind. That's why computer games are definitely beneficial for English language development.	Learning and having fun	Additional comments / Benefits

APPENDIX F: SAMPLE CODINGS BY ANOTHER RESEARCHER

Raw Data	Codes	Theme/Category
Participant 8: Q1: Öncelikle oyunlar kesinlikle bence yardımcı oluyor. Çünkü, oyun oynamak çünkü insanlara genel olarak zevk veren hoşuna giden bir şey. <u>İnsanlar hani sevdiği bir şeyi yaparken hoşlandığı bir şeyi yaparken yanında bilgiler öğrenebiliyorlar yani.</u> Çok basit bir şey yani atıyorum age of empires oynarsınız mitoloji oynarsınız ve bir anda yunan tanrılarını bilirsiniz. Günlük hayatta aklınızda bulunur bunları bilirsiniz. <u>Oyunlarda aynı şekilde İngilizce terimler öğreniyoruz kelimeler öğreniyoruz çünkü ihtiyacımız var oyunu oynayabilmemiz için onları öğrenmemiz gerekiyor.</u> <u>Sonrasında günlük hayatımızda işimize yarayabiliyor gayet güzel bir şekilde.</u> Onun için kesinlikle yararlı yani bu gerçekten fark ediyor, dil gelişimi. Q2: <u>Şimdi tabi yabancı bir oyunu Türklerle oynamak pek bir gelişim sağlamayacaktır size ama hani yabancı insanlarla, farklı ülkelerden farklı dillerde insanlarla oynamak, tabi doğal olarak ortak dil İngilizce ve tabi ki de fazlasıyla yararlı oluyor. Hani, İngilizlerle yabancılarla</u>	Having fun and learning information Vocabulary learning Learning English for daily life Learning from foreigners by playing games	General experiences of the participants / Advantages General experiences of the participants / Advantages General experiences of the participants / Advantages Teacher Guidance / Advantages

oynamak, onlarla iletişim kurmak için İngilizceye ihtiyacınız var, bazen oyunda kullandığınız terimleri kullanıyorsunuz. Onların üzerine bazı şeyler eklemeniz gerekiyor. Yeni şeyler öğreniyorsunuz. Belki onlardan bir şeyler öğreniyorsunuz. Onun için kesinlikle bu yönlendirmeler gayet işe yaradı.		
Q3: Tabi ki de kaldırır. Zaten günümüz problemlerinden biri gençlerin oyunlara bağımlı olması. Böyle bir üst limit koymak ve bu limiti kontrol edebilmek gayet önemli bir şey. Çünkü günlük hayatımızı ve sosyal hayatımızı da etkiler. Üst limit gerçekten kontrol de edebilirsek gayet bizim için de mantıklı bir şey.	The importance of limiting gaming hours	Putting a limit to playing computer games / Advantages
Q4: Kendi açımdan konuşacak olursam kesinlikle hani listening ve speaking'imin geliştiğini düşünüyorum. Çünkü sesli iletişim üzerinde duran oyunlar oynadım ve hani doğal olarak hani aksanları, konuşma şekilleri bunlar daha ön plana çıktı öğrenme açısından. Ondan sonra mesela speaking'im hiç yoktu diyebilirim. Oyunlar sayesinde kendimi geliştirebildiğimi düşünüyorum. Bu iki sınav arasında da bu ikisi kesinlikle ve kesinlikle gelişti. Writing hani birazcık hafızaya dayalı olduğunu düşünüyorum. Writing'im illaki gelişmiştir tabi ki de ancak	Better performance in speaking and listening	Improving target language skills / Advantages

benim açımdan, yani benim kendimde fark edebildiğim, bu ikisi, listening ve speaking, kesinlikle gelişmiştir.		
Q4.1: (Farklı bir oyunda) <u>Kesinlikle gelişim sağlardım. Tabi ki öyle, kesinlikle gelişim sağlardım. Örneğin CS:GO'da yazmanıza gerek yoktur. Karşı takımla iletişim kurmak için yazarsınız anca. Onun dışında hep sesli iletişim kuracaksınız. Onun için hani yazmaya ihtiyaç duymazsınız. Writing'inizde bir gelişim göremezsiniz.</u> Ama role-playde mesela sürekli bir şeyler okumanız gerekiyor size belirli questler veriyor. Questleri okumanız gerekiyor. Onun için de hani reading'iniz gelişiyor. Aynı şekilde çoğu MMORPG'de sesli iletişim yok. Bunun için de insanlarla ticaret sistemi olsun falan bunlarda yazarak writing ile iletişim kurmanız gerekiyor. Onun için de doğal olarak hani writing gelişiyor.	Lack of writing practice	Improving target language skills / Disadvantages
Q5: <u>Ben çocukluğumdan beri oyun oynarım. Çocukluğumdan beri bir İngilizce bilgim varsa yeteri kadar, kesinlikle oynadığım oyunlardan kaynaklı. Küçükken çocuksunuz hani oyun oynamayı seviyorsunuz. İlgi duyuyorsunuz. Hani onları İngilizce oynamak ve anlamak istiyorsunuz. Bunun için de hani kelimeleri öğreniyorsunuz ediyorsunuz ve bunları severek yaptığınız</u>	Learning English through games	Additional ideas / Benefits

için de aklınızda kalıyor bunlar, zorla bir şey olmadığı için kendi isteğinizle yaptığınız için. Bunun için de kesinlikle oyunların İngilizce'ye dil gelişimine yararı var yani.	Having fun and learning new words	Additional ideas / Benefits
Raw Data Translated in English	**Code**	**Theme/Category**
Participant 8: Q1: First of all, I believe that computer games are definitely helpful because playing computer games is something that entertains people and it is something that they like. While people are doing something that they like and something that they enjoy, they can also acquire some knowledge. Something very simple, for example, you play Age of Empires or Mythology and suddenly you know about the Greek gods. They stay on your mind in daily life and you know about them. In computer games, similarly, we learn English terms and words because we need them. We need to learn them in order to play the game. Then, they can be useful to us in daily life in a good way. That's why, they are definitely beneficial, I mean, they make a difference in terms of language development.	Having fun and learning information Vocabulary learning Learning English for daily life	General experiences of the participants / Advantages General experiences of the participants / Advantages General experiences of the participants / Advantages

Q2. <u>Of course, playing a computer game with Turks won't provide a huge development to you, but, playing with foreigners speaking different languages, naturally the common language is English, benefits a lot. I mean, playing with the English and foreigners, you need English to communicate with them, sometimes you use the terms that you use in the game. You have to add something to them. You learn something new. Maybe you learn something from them. That's why this guidance was quite helpful.</u>	Learning from foreigners by playing games	Teacher Guidance / Advantages
Q3. <u>Of course, it prevents. One of the problems of today's youth is gaming addiction. Putting such an upper limit and controlling it is quite important because it will also influence our daily life and social life. An upper limit, especially if we can control it, is something very logical for us.</u>	The importance of limiting gaming hours	Putting a limit to playing computer games / Advantages
Q4: <u>According to my point of view, I definitely think that my listening and speaking improved because I played games that focused on oral communication and naturally accents and speaking styles came into prominence in terms of learning. For instance, I can say that I had no speaking skills. I belive that I was able to improve myself thanks to computer games. Between</u>	Better performance in speaking and listening	Improving target language skills / Advantages

these two exams, I definitely think that these two skills improved. I think that writing depends on the memory to a certain extent. My writing probably developed but according to my point of view, I mean as far as I can understand, these two, listening and speaking, definitely improved.		
Q4.1: (In another game) Definitely I would have improved myself. Of course, I would have improved myself for sure. For example, in CSGO, you don't need to write. You only write to communicate with your opponent. Except that, you always have oral communication. That's why you don't need to write. You can't make progress in your writing. For example, in RPG, you always have to read something, it gives specific quests to you. You need to read the quests. That's why your reading improves. Similarly, most MMORPGs don't have voice communication. That's why, for example in trading system, you have to communicate via writing. Therefore, naturally, writing improves.	Lack of writing practice	Improving target language skills / Disadvantages
Q5: I have been playing computer games since I was a kid. If I have adequate English knowledge, it is definitely thanks to the computer games I have played since childhood. When you are little, you like	Learning English through games	Additional ideas / Benefits

<u>playing games. You have an interest in them. I mean, you want to play them and you want to understand them. To do this, you learn words and due to the fact that you like doing it and it is not something compulsory but with your own will, they remain on your mind.</u> That's why computer games are definitely beneficial for English language development.	Having fun and learning new words	Additional ideas / Benefits

ÇOK OYUNCULU ÇEVRİMİÇİ BİLGİSAYAR OYUNLARININ YABANCI DİL
OLARAK İNGİLİZCE BECERİLERİNİN GELİŞTİRİLMESİNDE KULLANIMI

Bilgi ve iletişim teknolojileri insanların hayatlarını daha kolay ve daha eğlenceli bir
hale getirerek 20. Yüzyılın sonuna doğru büyük önem kazanmışlardır. Bu teknolojiler
içerisinde en önemlilerden birisi bilgisayardır. Bilgisayarların önemi ortaya
çıktıklarından beri artmaktadır. Forrester Research (2007) tarafından yayınlanan bir
rapora göre 2007 yılında dünyada bir milyar bilgisayar vardı ve bu sayı 2015 yılının
sonuna doğru iki milyar olacaktı. Rosoff (2011) tarafından yayınlanan bir çalışmada
ise 2011 yılında dünyada 1.25 bilgisayar vardı. Sağladıkları kolaylıklardan ötürü
bilgisayarlar iş, bilim, eğitim ve tıp gibi birçok alanda kullanılmış ve bu alanlarda
bilgisayarların kullanımı ile ilgili sayısız çalışma gerçekleştirilmiştir. Bilgisayarların
sağladığı imkanlar içerisinde eğlence de önemli bir rol oynamıştır ve bilgisayar
oyunları yıllar boyunca milyonlarca insanın ilgisini çekmiştir. Spilgames (2013)
tarafından yayınlanan bir rapora göre 2013 yılında dünyada 1.3 milyar bilgisayar
oyuncusu ve 700 milyon çevrimiçi bilgisayar oyuncusu bulunmaktaydı. Bu 700
milyon oyuncunun 46%'sını bayan oyuncular oluştururken %54'ünü ise bay oyuncular
oluşturmaktaydı. Rapor ayrıca Türkiye'deki çevrimiçi nüfusun %70'inin çevrimiçi
bilgisayar oyunları oynadığını ortaya koymuştur. Bu figürlerden yola çıkarak
bilgisayar oyunlarının toplum içerisinde ne kadar yaygın olduğu ile ilgili bir fikir
edinmek mümkündür.

Bu yaygınlığın da etkisiyle bilgisayar oyunları çeşitli alanlarda çalışmalara konu
olmuştur. Bilgisayar oyunlarının kullanımı konusunda çok fazla ilgi görmüş
alanlardan birisi de eğitimdir. Bilgisayar oyunları tıp eğitimi (Kirsch, 1963), ekonomi
eğitimi (Robinson, 1974), fizik eğitimi (Bork 1975), tarih eğitimi (Campion, 1995) ve

edebiyat eğitimi (Rettberg, 2004) gibi çeşitli alanlarda araştırmalarda kullanılmıştır. Benzer şekilde bilgisayar oyunları yabancı dil eğitimi alanında da çeşitli araştırmalara konu olmuştur. Çeşitli yabancı dil konularının öğretimi ve bu öğretimlerin etkililiğinin araştırılması için bilgisayar oyunları yabancı dil eğitimine uyarlanmış (Coleman, 1990; Taylor, 1990; Coleman, 2002) veya bu amaç doğrultusunda özel bilgisayar oyunları ve yazılımlar geliştirilmiştir (Li & Topolewski, 2002; Sorensen & Meyer, 2007; Ranalli, 2008). Bilgisayar oyunları yabancı dilde kelime öğrenimi (Rankin, Morrison & Shute, 2009; Peterson, 2010; Sylvén & Sundqvist, 2012; Lo & Kuo, 2013; Huang & Yang, 2014), yabancı dil becerilerinin geliştirilmesi (Peterson, 2010; Suh, Kim & Kim, 2010; Zheng, Newgarden & Young, 2012) ve daha verimli katılım ve etkileşim (Peterson, 2010; Kongmee, Strachan, Pickard & Montgomery, 2012; Peterson, 2012) gibi konularla yabancı dil öğrenimi ve öğretimi alanında incelemelere tabi tutulmuştur.

Çok oyunculu çevrimiçi bilgisayar oyunlarının daha yaygın hale gelmesiyle bu oyunlar da yabacı dil öğrenimi ve öğretimi açısından çeşitli araştırmalara konu olmuştur. Bu araştırmaların çoğu çok oyunculu çevrimiçi bilgisayar oyunlarının yabancı dil öğreniminde kelime öğrenimi ve okuma, dinleme, yazma, konuşma becerilerinin geliştirilmesi açısından faydalı olduğunu ortaya koymuşlardır (Rankin, Morrison & Shute, 2009; Rankin, Morrison, McNeal, Gooch & Shute, 2009; Suh vd. 2009; Peterson, 2010; Kongmee vd., 2012; Zheng, vd., 2012; Rama vd., 2012; Sylvén & Sundqvist, 2012; Thorne vd., 2012); Lo & Kuo, 2013; Huang & Yang, 2014; Zheng, Bischoff & Gilliland, 2015; Hwang & Wang, 2016; Jennifer vd., 2016; Newgarden & Zheng, 2016; Quintín, Sanz & Zangara, 2016).

Rankin, Morrison ve Shute (2009), Rankin, Morrison, McNeal, Gooch ve Shute (2009), Peterson (2010), Kongmee vd. (2012), Sylvén ve Sundqvist (2012), Lo ve Kuo (2013), Sundqvist (2013), Huang ve Yang (2014), Zheng vd. (2015) tarafından gerçekleştirilen çalışmalara göre çok oyunculu çevrimiçi bilgisayar oyunlarının kelime öğrenimi açısından yüksek motivasyon, daha fazla katılım ve bilgi seviyesinde yükselme gibi çeşitli faydaları olduğu ortaya konmuştur. Benzer şekilde Suh vd.

(2010), Peterson (2012), Godwin-Jones (2014), Kongmee vd. (2012), Zheng vd. (2012), Newgarden ve Zheng (2016) tarafından gerçekleştirilen çalışmalarda çok oyunculu çevrimiçi bilgisayar oyunlarının yabancı dil öğreniminde ve öğretiminde okuma, dinleme, yazma ve konuşma üzerine faydaları ortaya konmuştur.

Her ne kadar literatürde bilgisayar oyunlarının ve çok oyunculu bilgisayar oyunlarının yabancı dil öğrenimine olan olumlu etkileri konusunda neredeyse bir konsensüs olsa da, bilgisayar oyunları eğitim öğretim alanında sadece avantajları ile yer edinmemiştir. Grüsser, Thalemann ve Griffiths (2006), Wan ve Chiou (2006), Lu ve Wang (2008), Sun, Ma, Bao, Chen ve Zhang (2008), Skoric, Teo ve Neo (2009), Hsu, Wen ve Wu, (2009) tarafından gerçekleştirilen çalışmalarda bilgisayar oyunlarının yanlış şekilde kullanılması sonucunda agresif davranışlar, akademik başarıda düşüş, fiziksel ve psikolojik olarak olumsuz davranışların gibi bir takım negatif sonuçlara sebep olabileceği de ortaya konmuştur. Literatürdeki çalışmalar göz önüne alındığında bilgisayar oyunlarının yabancı dil öğreniminde performansı artırmak ve pratik olanakları sağlamak açısından kullanılabileceği görülmektedir. Ancak yine literatürdeki çalışmalar incelendiğinde bunu yaparken bilgisayar oyunlarının yanlış yönde kullanılmaması ve birtakım olumsuz sonuçların ortaya çıkmaması konusunda öğrencilerin bilinçli bir şekilde yönlendirilip kontrol edilerek mümkün olan tüm çabanın sarf edilmesi gerektiği görülmektedir.

Bilgisayar oyunlarının yabancı dil öğrenimi ve yabancı dil becerilerinin gelişimi üzerine etkileri konusunda gerçekleştirilmiş olan literatürdeki çalışmalar incelendiğinde bilgisayar oyunlarının hem yabancı dil bilgisinin artırılması hem de yabancı dil becerilerinin daha fazla pratik edilip geliştirilmesi konusunda olumlu etkilere sahip oldukları anlaşılmaktadır. Mevcut çalışmalar hem nicel hem de nitel veriler sağlayarak literatüre önemli miktarda katkıda bulunmuşlardır. Ancak literatürde halen bilgisayar oyunları ve yabancı dil öğreniminin incelenmesi konusunda dünya çapında geçerliliği ve güvenirliği kanıtlanmış, tüm dil becerilerini kapsamlı olarak test eden bir yabancı dil yeterlilik testi aracılığıyla analiz edilmesi konusunda ilave verilere ihtiyaç duyulmaktadır.

Mevcut çalışma yabancı dil becerilerinin geliştirilmesi için dört haftalık çok oyunculu çevrimiçi bilgisayar oyunu oynama sürecinin yabancı dil becerilerinin gelişimine etkisini içerisinde sırasıyla nicel ve nitel verinin kullanıldığı bir sıralı karma desen kullanarak incelemiştir. Çalışma A2, B1, B2 seviyelerinde İngilizce yeterlilik seviyesi sağlayan, dünya çapında bir geçerliliğe sahip olan Cambridge ölçeğinde dil yeterlilik bilgisi veren, tüm dil becerilerini ölçen bir İngilizce yeterlilik sınavı olan Cambridge Preliminary English Test aracılığıyla çok oyunculu çevrimiçi bilgisayar oyunlarının yabancı dil becerilerinin gelişimine olan etkisini nicel olarak ölçerek literatüre katkıda bulunmayı hedeflemiştir. Ayrıca çalışmada yarı yapılandırılmış bir görüşme aracılığıyla üniversite öğrencisi olan İngilizce öğrencilerinin çok oyunculu çevrimiçi bilgisayar oyunlarının yabancı dil becerilerinin gelişiminde kullanımı hususunda görüşlerinin öğrenilmesi ile gerçekleştirilen sınavlar aracılığıyla edinilen nicel bulguların nitel bulgular vasıtasıyla daha ileri düzeyde anlamlandırılması amaçlanmıştır. Çalışmada şu araştırma sorularına cevap aranmıştır:

1. Yabancı dil olarak İngilizce becerilerinin geliştirilmesi için çok oyunculu çevrimiçi bilgisayar oyunlarının oynanması genel olarak hedef dil becerilerinin önemli bir gelişimi ile sonuçlanır mı?

2. Yabancı dil olarak İngilizce becerilerinin geliştirilmesi için çok oyunculu çevrimiçi bilgisayar oyunlarının oynanması aşağıdaki becerilere dayalı olarak önemli bir gelişim ile sonuçlanır mı?
   a. Okuma
   b. Dinleme
   c. Yazma
   d. Konuşma

3. Yabancı dil olarak İngilizce öğrencilerinin çok oyunculu çevrimiçi bilgisayar oyunlarının yabancı dil becerilerinin geliştirilmesinde kullanılması hakkında görüleri nelerdir?

Araştırma Konya, Türkiye'de konumlu bir özel üniversitede gerçekleştirilmiştir. Araştırmaya üçü bayan 10'u bay olmak üzere 13 katılımcı katılmıştır. Bu katılımcılar gönüllülük esasları çerçevesinde araştırmacı tarafından eposta aracılığıyla yapılan duyuru sonucunda araştırmaya katılmak istemişlerdir. Katılımcılar elektrik-elektronik mühendisliği (N=1), hukuk fakültesi (N=1), sosyoloji (N=1), uluslararası ticaret (N=3), mekatronik mühendisliği (N=1), hemşirelik (N=2), odyoloji (N=1), çocuk gelişimi (N=1), lojistik yönetimi (N=1) ve iletişim (N=1) bölümlerinde halihazırda eğitim görmekte olan 19-24 yaşlarında üniversite öğrencileridir. Katılımcılar üniversite eğitimleri süresince en az orta seviye öncesi İngilizce derslerini tamamlamışlardır. Cambridge PET aracılığıyla gerçekleştirilen öntest sonuçlarına göre katılımcıların 11'i A2 düzeyinde, biri A2 altı düzeyde, biri de B1 düzeyinde İngilizce yetkinlik seviyesine sahiptir. Katılımcılarla ilgili bu genel bilgiler birebir görüşmeler aracılığıyla toplanmış ve kaydedilmiştir.

Arka plan bilgisinin toplanmasından sonra, yine birebir görüşmeler aracılığıyla katılımcıların oyun oynama arka planları ile ilgili bilgi toplanmıştır. Bu görüşmede katılımcılara haftalık oyun oynama saatleri ve oynadıkları oyunlarla ilgili sorular sorulmuştur. Bu görüşme sonucunda katılımcıların haftada dört saat (N=1), beş saat (N=2), altı saat (N=1), yedi saat (N=1), sekiz saat (N=2), 10 saat (N=2), 11 saat (N=1), 13 saat (N=1) ve 15 saat (N=1) sürelerle CS:GO, LoL, Runescape, Seafight, PubG gibi çok oyunculu çevrimiçi bilgisayar oyunları oynadıkları bilgisine ulaşılmıştır. Çalışmanın otantik yapısının bozulmaması adına katılımcıların haftalık oyun saatlerinde bağımlılık belirtileri ve oynanan oyun içeriklerinde katılımcıların yaşlarına göre herhangi bir uygunsuzluk durumu olmadığı sürece herhangi bir değişiklik yapılmamıştır. Literatürdeki çalışmalar ve oyun içerikleri ile ilgili yapılan incelemeler sonucunda katılımcıların haftalık oyun saatleri ve oynadıkları oyunlar ile ilgili herhangi bir sorun olmadığı sonucuna ulaşılmıştır.

Birinci ve ikinci araştırma sorularının cevaplarını incelemek üzere biri süreç öncesinde diğeri ise süreç sonrasında gerçekleştirilen iki örnek Cambridge PET sınavı aracılığıyla nicel veri toplanmıştır. Üçüncü araştırma sorusunun cevabına ulaşmak

amacıyla ise çalışma sonrasında beş soru içeren yarı yapılandırılmış bir görüşme aracılığıyla nitel veri toplanmıştır. Nicel veriler tekrarlayan ölçümlerde varyans analizi aracılığıyla, nitel veriler ise Braun ve Clarke'ın (2006) ana hatları göz önünde bulundurularak tematik analiz aracılığıyla analiz edilmiştir.

Nicel verinin toplanması için kullanılan Cambridge PET sınavı A2, B1 ve B2 seviyelerinde İngilizce yeterlilik bilgisi sağlayan, okuma, dinleme, yazma ve konuşma bölümlerinden oluşan bir sınavdır. Çalışma kapsamında iki örnek Cambridge PET sınavı, cevap anahtarları ve puanlandırma yönergeleri Cambridge English kurumunun izniyle kullanılmıştır. Sınav araştırmanın gerçekleştirildiği yabancı diller yüksekokulunda ölçme ve değerlendirme departmanında görev yapan aştırmadan bağımsız iki İngilizce öğretim görevlisi tarafından gerçekleştirilmiş ve puanlandırılmıştır. Sınavın uygulanmasında ve puanlandırmasında sınav yönergeleri temel alınmıştır. Sınav sonuçları tekrarlayan ölçümlerde varyans analizi aracılığıyla incelenmiştir.

Nitel verinin toplanması için kullanılan yarı yapılandırılmış görüşme toplamda beş sorudan oluşmaktadır. Bu sorular sırasıyla yabancı dil olarak İngilizce öğrencilerinin yabancı dil becerilerinin geliştirilmesinde çok oyunculu çevrimiçi bilgisayar oyunlarının kullanılması hakkındaki görüşlerini öğrencilerin genel görüşleri, süreç içerisinde araştırmacı/öğretmen tarafından sağlanan yönlendirmelerin verimliliği, süreç boyunca haftalık oyun saatleri konusunda bir üst limit kullanmanın bilgisayar oyunlarının olası olumsuz etkilerini azaltma konusundaki etkililiği, süreç içerisinde yabancı dil becerilerinin geliştirilmesi ve bu sürecin öğrencilerin girdiği testlerdeki puanlarına etkisi ve öğrencilerin süreçle ilgili ekstra düşünceleri hakkındaki düşüncelerini öğrenmeyi hedeflemektedir. Görüşme bulguları Braun ve Clark (2006) tarafından belirlenen yönergeler doğrultusunda tematik analiz aracılığıyla incelenmiştir.

Çalışmanın veri toplama prosedürü öğrencilerin mevcut çalışma ile ilgili eposta haberdar edilmesi ile başlamıştır. Çalışmaya ilgi duyan öğrenciler yine eposta

aracılığıyla veya araştırmacı ile birebir görüşecek çalışmanın detayları ile ilgili ilave bilgi edinmişlerdir. Sonrasında çalışmaya katılmayı isteyen öğrencilerden çalışmayla ilgili çalışma boyunca elde edinilen bilgilerin gizli tutulacağı, çalışma süresince istedikleri an çalışmadan ayrılma haklarının saklı olacağı ve çalışma süresince herhangi bir konuda istedikleri anda araştırmacıdan veya danışmandan çalışma ile ilgili bilgi edinebilecekleri konusunda bilgiler içeren bir rıza formunu imzalamaları istenmiştir. Sonrasında çalışmaya katılacak öğrencilerden birebir görüşmeler aracılığıyla genel demografik bilgiler ve oyun oynama arka planları ile ilgili bilgiler toplanmıştır. Bu görüşmenin sonrasında ise yine birebir görüşmeler aracılığıyla çalışmanın genel işleyişi açıklanmıştır. Bu görüşme içerisinde öğrencilere çalışma süresince takip edebilecekleri oyun arayüzünü İngilizce olarak kullanmak, yerel sunucular yerine yabancı sunucularda oyunu oynamak, oyun esnasında yanında bir sözlük bulundurmak, oyun esnasında İngilizce dil becerilerinin pratiği noktasında karşılaştıkları herhangi bir sorunu eposta aracılığıyla veya birebir görüşmeler aracılığıyla araştırmacıya iletip destek istemek gibi çeşitli tavsiyelerde bulunulmuştur. Bunu takiben öntest gerçekleştirilmiştir ve sonrasında dört haftalık oyun süreci başlamıştır. Katılımcılar bu dört haftalık süre boyunca İngilizce dil becerilerini geliştirmek amacıyla çok oyunculu çevrimiçi bilgisayar oyunlarını oynamışlar ve oyun süreci boyunca düzenli olarak araştırmacı ile iletişimde kalarak birebir görüşmeler veya epostalar aracılığıyla oyun esnasında problem yaşadıkları noktalarla ilgili araştırmacıdan birebir dönüt almışlardır. Ayrıca oyun sürelerinin kontrol edilebilmesi amacıyla katılımcılardan bu dört haftalık süreç boyunca her oyuna girdiklerinde oyun tekrarı veya ekran görüntüsü iletmeleri istenmiştir. Dört haftalık süreç sonrasında son test ve yarı yapılandırılmış görüşme gerçekleştirilmiştir. Son olarak ise elde edinilen nicel ve nitel veriler analiz edilip raporlanmıştır.

Çalışmanın bulguları ilk olarak çok oyunculu çevrimiçi bilgisayar oyunlarının yabancı dil olarak İngilizce becerileri üzerindeki genel etkisini inceleyen birinci araştırma sorusu üzerinden analiz edilmiştir. Bu kapsamda öntest ve sontest sonuçları öntest ve sontest olmak üzere iki seviye içeren test zamanı ve okuma, yazma, dinleme ve konuşma olmak üzere dört seviye içeren test türü olmak üzere iki faktör oluşturularak

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bir tekrarlayan ölçümlerde varyans analizi ile incelenmiştir. Test zamanı faktörü genel olarak öntest ve sontest arasında önemli bir fark olup olmadığını anlamak için, test türü faktörü ise her test türünün öntest ve sontest olmak üzere kendi içerisinde önemli bir fark olup olmadığını anlamak için oluşturulmuştur. Öncelikle test sonuçları normal dağılım ve küresellik varsayımları açısından değerlendirilmiştir. Kolmogorov-Smirnov normal dağılım testine göre öntest ve sontest olmak üzere okuma, yazma, dinleme ve konuşma test sonuçlarının normal dağılıma sahip olduğu sonucuna ulaşılmıştır ($p > .05$). Mauchly küresellik testine göre ise test türü faktörü açısından küresellik varsayımının sağlandığı gözlenmiştir ($p = .372$). Test zamanı faktörünün ise iki seviyeye sahip olduğu için küresellik varsayımı açısından herhangi bir sorun teşkil etmediği görülmüştür. Tekrarlayan ölçümlerde varyans analizinin sonucunda katılımcıların tüm testlerde betimsel bir artış kaydettiği ve öntestten sonteste önemli bir puan artışı olduğu sonucuna ulaşılmıştır ($F(1,12) = 17.76$, $p = 0.001$).

Öntest ve sontest sonuçlarının genel olarak tüm becerilerde önemli bir fark gösterip göstermediğinin analiz edilmesinden sonra, ikinci araştırma sorusunun cevaplarını elde etmek amacıyla, her bir beceri öntest ve sontest olmak üzere kendi içerisinde ikili karşılaştırmalar aracılığıyla kıyaslanmıştır. Bu kıyaslama sonucunda öntest okuma sonuçları (49.45) ve sontest okuma sonuçları (50.52) arasında önemli bir fark olmadığı ($p = .819$) ve benzer şekilde katılımcıların öntest yazma (60.33) ve sontest yazma (65.89) sonuçları arasında önemli bir fark olmadığı sonucuna ulaşılmıştır. ($p = .201$). Bunun aksine katılımcıların öntest dinleme (39.69) ve sontest dinleme (53.69) sonuçları arasında önemli bir fark olduğu ($p = .005$) ve öntest konuşma (68.07) ve sontest konuşma (72.69) sonuçları arasında önemli bir fark olduğu sonucuna ulaşılmıştır ($p = .020$).

Son olarak üçüncü araştırma sorusunun cevaplarını bulmak amacıyla yarı yapılandırılmış görüşmenin bulguları Braun ve Clarke (2006) tarafından belirtilen yönergeler dikkate alınarak tematik analiz aracılığıyla incelenmiştir. Sonuçlar çok oyunculu çevrimiçi bilgisayar oyunlarının yabancı dil becerilerinin geliştirilmesi hususunda katılımcıların genel deneyimleri, oyun sürecinde öğretmen rehberliği,

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haftalık oyun saatlerinde üst limit kullanılması, hedef dil becerilerinin gelişimi ve katılımcıların ekstra görüşleri şeklinde beş farklı temayı ve bu temalar kapsamında faydalar ve zorluklar olmak üzere her bir tema için iki ayrı kategoriyi ortaya çıkarmıştır.

Elde edilen bulgular ışığında birinci araştırma sorusu "Yabancı dil olarak İngilizce becerilerinin geliştirilmesi için çok oyunculu çevrimiçi bilgisayar oyunlarının oynanması genel olarak hedef dil becerilerinin önemli bir gelişimi ile sonuçlanır mı?" olumlu olarak cevaplanmıştır. Hem nicel bulgular hem de nitel bulgular göz önünde bulundurulduğunda, çok oyunculu çevrimiçi bilgisayar oyunlarının yabancı dil becerilerinin pratik edilmesi ve geliştirilmesi için oynanması sürecinin ön testten son teste hedef dil becerilerinde bütünsel olarak önemli bir İngilizce yeterlilik gelişimi sağladığı görülmüştür. Çalışmada elde edilen bulgular hem dil becerilerinin geliştirilmesi hem de hedef dil bilgisinin artırılması noktasında sonuçlar sunan Peterson (2012), Godwin-Jones (2014), Rankin, Morrison ve Shute (2009), Rankin, Morrison, McNeal, Gooch ve Shute (2009), Peterson (2010), Kongmee vd. (2012), Sylven ve Sundqvist (2012), Lo ve Kuo (2013), Sundqvist (2013), Huang ve Yang (2014), Zheng vd. (2015) gibi araştırmacıların bulgularını destekler niteliktedir. Çalışma öğretmen desteği ve kontrolü ile yabancı dil becerilerinin kapsamlı olarak geliştirilmesi amacıyla çok oyunculu çevrimiçi bilgisayar oyunlarının kullanılması noktasında teorik ve pratik çıkarımlar sağlamaktadır. Teorik çıkarımlar bulguların geçerliliğini, güvenilirliğini ve gücünü artırmak için daha fazla katılımcı ile, daha fazla veri toplama tekniği kullanılarak daha uzun zaman dilimleri içerisinde ileri çalışmaların gerçekleştirilmesi gibi noktalar içermektedir. Pratik çıkarımlar ise İngilizce öğretmenlerinin halihazırda çok oyunculu çevrimiçi bilgisayar oyunları oynayan öğrencilere oyunlar aracılığıyla dil becerilerinin geliştirilmesini artırmak için oyun alışkanlıklarında basit birtakım değişiklikler tavsiye ederek, onlara oyunlar aracılığıyla yabancı dil becerilerini geliştirme noktasında düzenli dönüt sağlayarak ve olası olumsuz etkileri asgari düzeye indirmek amacıyla oyun içeriklerini ve öğrencilerin oyunlardaki davranışlarını oyun tekrarları aracılığıyla gözlemleyerek çok

oyunculu çevrimiçi bilgisayar oyunları aracılığıyla yabancı dil becerileri gelişiminin daha verimli bir hale getirilebileceği hususu üzerinde durmaktadır.

Araştırmanın nicel bulguları ikinci araştırma sorusunun a maddesinin "Yabancı dil olarak İngilizce becerilerinin geliştirilmesi için çok oyunculu çevrimiçi bilgisayar oyunlarının oynanması okuma becerisine dayalı olarak önemli bir gelişim ile sonuçlanır mı?" ve b maddesinin "Yabancı dil olarak İngilizce becerilerinin geliştirilmesi için çok oyunculu çevrimiçi bilgisayar oyunlarının oynanması yazma becerisine dayalı olarak önemli bir gelişim ile sonuçlanır mı?" olumsuz olarak cevaplandığını ortaya koymuştur. Bu sonuçlar Suh vd. (2010) tarafından öne sürülen bulguları doğrulamamaktadır. Çalışmanın nitel sonuçları ise araştırma sorusu açısından hem olumlu hem de olumsuz cevaplar öne sürmektedir. Nitel bulgulara göre MMORPG ve MOBA oyuncuları okuma becerilerini pratik ettiklerini ve geliştirdiklerini düşünürken FPS oyuncuları ise okuma becerilerini geliştirme noktasında sınırlı imkanlara sahip olduklarını belirtmiştir. Yine nitel bulgulara göre MMORPG oyuncularını yazma becerilerini geliştirdiklerini düşünürken MOBA ve FPS oyuncuları arasında bu düşünce hakim değildir. Bu bulgulardan yola çıkarak çalışma teorik ve uygulama odaklı çıkarımlar öne sürmektedir. Teorik açıdan çalışma farklı oyun türlerinin yabancı dilde okuma becerilerinin ve yazma becerilerinin geliştirilmesi üzerine etkilerinin daha iyi incelenebilmesi için sonraki çalışmalarda farklı oyun türlerinin ayrı ayrı ele alınabileceği ve oyun sürecinin daha uzun tutulabileceği gibi noktalar üzerinde durmaktadır. Uygulama ağırlıklı çıkarımlar açısından ise çalışma okuma becerilerini geliştirmek isteyen çok oyunculu çevrimiçi bilgisayar oyunları oynayan İngilizce öğrencilerinin çalışma kapsamında katılımcılara sunulan tavsiyeler ve uygulamalar göz önünde bulundurularak MMORPG ve MOBA türü oyunları oynamaya yönlendirilebileceği ve aynı yazma becerilerini geliştirmek isteyen öğrencilerin de yine tavsiyeler göz önünde bulundurularak MMORPG türü oyunları oynamaya yönlendirilebileceği üzerinde durmaktadır.

Araştırmanın nicel sonuçları ikinci araştırma sorusunun c maddesinin "Yabancı dil olarak İngilizce becerilerinin geliştirilmesi için çok oyunculu çevrimiçi bilgisayar

oyunlarının oynanması dineleme becerisine dayalı olarak önemli bir gelişim ile sonuçlanır mı?" ve d maddesinin "Yabancı dil olarak İngilizce becerilerinin geliştirilmesi için çok oyunculu çevrimiçi bilgisayar oyunlarının oynanması konuşma becerisine dayalı olarak önemli bir gelişim ile sonuçlanır mı?" olumlu şekilde cevaplandığını ortaya çıkarmıştır. Bu sonuçlar Suh vd. (2010), Kongmee vd. (2012), Zheng vd. (2012), Newgarden ve Zheng (2016) gibi araştırmacıların bulgularını doğrulamaktadır. Çalışmanın nitel sonuçları ise çok oyunculu çevrimiçi bilgisayar oyunları aracılığıyla yabancı dilde dinleme ve konuşma becerilerinin geliştirilmesi açısından oyun türüne dayalı olarak olumlu ve olumsuz sonuçları gözler önüne sermektedir. Dinleme becerileri açısından MMORPG ve FPS oyuncuları önemli bir gelişim sağladıklarını düşünürken MOBA oyuncuları arasında bu düşünce hakim değildir. Konuşma becerileri açısından ise FPS oyuncuları önemli bir gelişim sağladıklarını düşünürken, MMORPG ve FPS oyuncuları bu konuda sınırlı imkanlara sahip olduklarını belirtmişlerdir. Bu bulgular göz önünde bulundurularak çalışma kuramsal ve uygulama yönünden çıkarımlar sağlamaktadır. Kuramsal açıdan çalışma bulguların önemli bir fark ortaya koyduğu çok oyunculu çevrimiçi bilgisayar oyunlarının yabancı dil becerilerini geliştirmek amacıyla oynanması konusunda daha etkili analizler elde edilebilmesi için daha fazla katılımcılı çalışmalar, oyun türlerinin ayrı ayrı incelenmesi ve daha farklı veri toplama yöntemlerinin kullanılması gibi konuların üzerinde durmaktadır. Uygulama yönünden ise çalışma, mevcut yönergeler göz önünde bulundurularak çok oyunculu çevrimiçi bilgisayar oyunları oynayan İngilizce öğrencilerinin oyunları dil öğrenimi ve dil becerilerinin gelişiminin artırılması için tavsiyeler sağlanması, düzenli görüşmeler aracılığıyla öğrencilerin öğrenim tecrübeleri noktasında dönüt sağlanması ve öğrencilerin oyun tecrübelerinin incelenip kontrol edilmesi sonucunda alınan verimin artırılabileceğini vurgulamaktadır. Ayrıca çalışma dinleme becerilerini geliştirmek isteyen çok oyunculu çevrimiçi bilgisayar oyunlarını oynayan İngilizce öğrencilerinin MMORPG ve FPS türü oyunlara yönlendirilebileceğini ve konuşma becerilerini geliştirmek isteyen oyuncu öğrencilerin FPS türü oyunlara yönlendirilebileceğini öne sürmektedir.

Sonuç olarak mevcut çalışma çok oyunculu çevrimiçi bilgisayar oyunlarının yabancı dil becerilerinin geliştirilmesi amacıyla bir İngilizce öğretmeni rehberliğinde ve kontrolünde oynandığı dört haftalık bir sürecin yabancı dil becerilerinin gelişimine olan etkilerini nicel ve nitel açıdan incelemek üzere gerçekleştirilmiştir. Nicel inceleme bir öntest bir de sontest olmak üzere iki örnek Cambridge PET sınavı aracılığıyla toplanıp tekrarlayan ölçümlerde varyans analizi aracılığıyla analiz edilmiş, nitel veri ise bir yarı-yapılandırılmış görüşme aracılığıyla toplanıp Braun ve Clarke (2006) tarafından sunulan yönergeler aracılığıyla tematik analiz yoluyla analiz edilmiştir. Çalışmanın nicel bulguları sürecin yabancı dil becerilerinde sergilenen performansta genel bir artış olduğunu ve ayrı olarak dinleme ve konuşma becerilerinde önemli bir gelişme sağlandığını ortaya çıkarmış, okuma ve yazma becerilerinde ise ayrı olarak önemli bir artış sağlanmadığını göstermiştir. Çalışmanın nitel bulguları ise katılımcıların genel deneyimleri, oyun sürecinde öğretmen rehberliği, haftalık oyun saatlerinde üst limit kullanılması, hedef dil becerilerinin gelişimi ve katılımcıların ekstra görüşleri konularında sürecin faydalarını ve zorluklarını ortaya çıkarmıştır. Çalışma bulgular ışığında kuramsal ağırlıklı ve uygulama ağırlıklı çıkarımlar öne sürmüştür.

APPENDIX H: TEZ FOTOKOPİSİ İZİN FORMU

ENSTİTÜ

Fen Bilimleri Enstitüsü: ☐

Sosyal Bilimler Enstitüsü: ☑

Uygulamalı Matematik Enstitüsü: ☐

Enformatik Enstitüsü: ☐

Deniz Bilimleri Enstitüsü: ☐

YAZARIN:

Soyadı : ALTINBAŞ

Adı : Mehmet Emre

Bölümü : İngiliz Dili Öğretimi

TEZİN ADI: (İngilizce) THE USE OF MULTIPLAYER ONLINE COMPUTER GAMES IN DEVELOPING EFL SKILLS

TEZİN TÜRÜ: Yüksek Lisans ☑ Doktora ☐

1. Tezimin tamamından kaynak göstermek şartıyla fotokopi alınabilir. ☐

2. Tezimin içindekiler sayfası, özet, indeks sayfalarından ve/veya bir bölümünden kaynak gösterilmek şartıyla fotokopi alınabilir. ☐

3. Tezimden bir bir (1) yıl süreyle fotokopi alınamaz. ☑

TEZİN KÜTÜPHANEYE TESLİM TARİHİ:

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