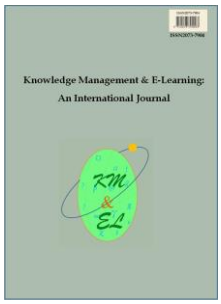
Knowledge Management & E-Learning, Vol.14, No.3. Sep 2022

Learner perceptions and effectiveness of using a massively multiplayer online role-playing game to improve EFL communicative competence

Ufuk Bakan
Izmir Katip Celebi University, Turkiye
Turgay Han
Ordu University, Turkiye
Uğur Bakan
Izmir Katip Celebi University, Turkiye



Knowledge Management & E-Learning: An International Journal (KM&EL)
ISSN 2073-7904

Recommended citation:
Bakan, U., Han, T., & Bakan, U. (2022). Learner perceptions and effectiveness of using a massively multiplayer online role-playing game to improve EFL communicative competence. *Knowledge Management & E-Learning, 14*(3), 286–303. https://doi.org/10.34105/j.kmel.2022.14.016

Knowledge Management & E-Learning, 14(3), 286–303

Learner perceptions and effectiveness of using a massively multiplayer online role-playing game to improve EFL communicative competence

Ufuk Bakan*

Faculty of Art and Design
Izmir Katip Celebi University, Turkiye
E-mail: ufuk.bakan@ikcu.edu.tr

Turgay Han

Faculty of Science and Letters
Ordu University, Turkiye
E-mail: turgayhan@ordu.edu.tr

Uğur Bakan*

Faculty of Art and Design
Izmir Katip Celebi University, Turkiye
E-mail: ugur.bakan@ikcu.edu.tr

*Corresponding author

Abstract: Although previous studies have investigated the effect of digital games on learning foreign languages, no research has examined how effective they are on learners' perceptions regarding foreign language communicative competence development. The purpose of this study is to investigate how the use of a Massive Multiplayer Online Role-Playing Game (MMORPG) by English-as-a-foreign-language (EFL) learners affects their communicative competence and perceptions. A case study was adopted as a research method in this study. The participants were undergraduate students from a state university in Turkey. A questionnaire and open-ended questions were administered online to collect the participants' attitudes toward gaming as an EFL tool and their learning games experience. The findings showed that the participants had a positive experience as they could practice daily used vocabulary and phrases while speaking or chatting with other EFL speakers in the games. Further, they thought that these games provided plentiful opportunities to promote EFL learning through speaking and writing, and new vocabulary use. Finally, a large majority of the participants preferred to communicate with players from different countries. The results of this study implicate that MMORPG can be an effective support tool for EFL learners.

Keywords: Massively multiplayer online role-playing games; Digital games; Game-based learning; EFL learning; Communicative skills

Biographical notes: Ufuk Bakan is an Assistant Professor in the Visual Communication Design Department of Izmir Katip Çelebi University. He earned a Ph.D. from the Institute of Social Sciences at Ege University, a Master's at the Institute of Social Science and a Bachelor's degree in Radio-TV

and Cinema, both at Atatürk University. His research interests include 3D modeling, Architectural Modeling, 3D Environment, Visual Effects, Motion Graphics, and 2D-3D Game Design and Development. Dr. Bakan teaches graduate and undergraduate level courses in Contemporary Applications in Visual Arts, Design and Visual Culture, History of Animation, and 3D Modeling Techniques.

Turgay HAN is an Associate Professor at the Department of English Language and Literature, Faculty of Letters of Ordu University. His areas of the research center on language learning, L2 measurement, and assessment issues. Further, he is interested in individual differences in Language learning, and the use of sophisticated frameworks in his research expertise such as generalizability (G-) theory and item response theory (IRT).

Uğur Bakan is an Associate Professor in the Department of Visual Communication Design, Faculty of Art and Design at Izmir Kâtip Çelebi University, Turkey, where he teaches courses in Interactive Media, and Game Design, Visual Communication, and Design Culture. He has more than 15 years of professional experience as a graphics, web, and print designer. He received his Ph.D. degree in the Department of Journalism, Ege University, Turkey. Game studies, alternative journalism, digital media systems, social media, graphics design, cultural studies, and visual communication are among the areas of his academic interest. He has presented generative art and design research and artwork internationally.

1. Introduction

The use of computers and the Internet as well as games and entertainment tools has affected language education in recent years. Along with the effect of digitalization, educational institutions have transformed the virtual environment into a supportive model or an education model independent of the physical environment. While these environments create virtual worlds where people can have fun during the day, they also allow language learners to practice in a foreign language outside the classroom.

Especially, massively multiplayer online role-playing games (MMORPGs) can provide second language (L2) learners to expose an ample linguistical and cognitive virtual environment and these learners can have a rich L2 input and scaffolded interaction opportunities in the L2 (Sylvén & Sundqvist, 2012; Schimmenti et al., 2017; Tomlinson & Masuhara, 2009; Yaşar, 2018). Scaffolding can be found embedded in the conversations in the games. While scaffolding, learners are attentive closely to the conversational partner, to the repetitive words for indicating understanding, and to the requests through open-ended questions and comments to encourage speaking, interpreting, or expanding comments (Horwitz, 2020, p. 33). In this sense, conversation theories advocate that speaking in an L2 can be achieved by participating in conversations (Horwitz, 2020, p.33). Therefore, MMORPGs create available settings for learning to speak a new language and processing scaffolding among the conversation participants. Further, the link between L2 learning and digital games can be based on sociocultural theory referring to socially mediated activity and Vygotsky's (1978) Zone of Proximal Development concept referring to the novice-expert interplay in knowledge construction (Rama et al., 2012).

In recent years, developing applications, and digital games have shaped language education and teaching as well as many disciplines. Language programs are implemented in a way that facilitates the internalization, storage, and use of a foreign language learned in everyday life. Interestingly, compared to language learning activities such as listening to music or watching TV or films, digital gaming along with reading and using the Internet can be more conducive to L2 learning (Sundqvist, 2009). Further, L2 learners can benefit from gaming experiences while using L2 in other contexts, even if non-gaming situations are closely related to the in-game contents (Scholz & Schulze, 2017). Therefore, the widespread use of digital technologies has a significant role in creating a non-restricted setting for new language learning.

Digital games-based English language learning has been investigated by several studies. They have suggested that digital games may have effects on the language and identity development of foreign or second language (L2) students (Rankin et al., 2006; Shahriarpour & Kafi, 2014; Liaw, 1998) because these games make the students active and boost their attention. These games motivate L2 students to participate in the learning activity and enable them to learn on their own. Digital games affect not only L2 students' learning strategies, but also their L2 learning process because these games can provide differentiation, cross-cultural communication, and learners' autonomy (Acquah & Katz, 2020; Xie, Wang, & Hooshyar, 2021). In addition, L2 students can find a lot of learning materials on their own because these games can be used as self-guided and self-access tools (Utku & Dolgunsöz, 2018; Chapelle, 2001). Along with creating an environment where players can have fun, they also have effects on the development of communication, critical thinking, creativity, problem-solving, and leadership behaviors (Yee, 2003; Bonk & Dennen, 2005; Childress & Braswell, 2006; Galarneau & Zibit, 2007).

Computer games are increasingly accepted among people due to their realistic virtual environment, sound and image features, and roles they assign to players (Brand, Knight, & Majewski, 2003; Carnagey & Anderson, 2004). With the increase in connection speeds, cable, and wireless internet access to every point, MMORPG and Multiplayer Online Battle Arena (MOBA) have increased interest to make new friends and spend free time. These games are three-dimensional fantastic games in which players struggle and collaborate with each other and the fictionalized characters within the game. In the MMORPG, players do not only interact with the game software but also with millions of players in a virtual world and they frequently interact verbally or in writing with them (Steinkuehler, 2003; Gentile, 2009).

MMORPG and MOBA, which have been the most preferred games by players in recent years, are played by millions of people online. These games are three-dimensional fantasy games in which players struggle and collaborate with each other and the in-game fictionalized characters (Barnett & Coulson, 2010). Although there are many types of MMORPG games, the most well-known games in this genre are World of Warcraft, Guild Wars 2, Final Fantasy XIV, Elder Scrolls Online Black Desert Online, and Eve Online. After logging in, players of this type often begin to explore the imaginary space of the game including certain groups or tribes. Increased interest in this medium has made game-based learning important. MOBA is built on performing specific tasks and destroying each other's superiors through teams with basic functioning. Computer games have a wide range of applications, not only for the entertainment of people in the entertainment sector but also in business areas where personnel training is carried out, in simulation applications where military training is provided, and in all areas of education or the health sector (Gee, 2005; Newman, 2004). MMORPG is beneficial for many areas, especially L2 learning because they increase L2 students' learning capacities and provide them with better learning environments.

2. Literature review

2.1. Applying MMORPGs in language learning

Applying MMORPGs to language learning can provide several advantages. First, it can foster self-learning through increasing academic success by establishing a partnership between the teacher and the student in the field of teaching technologies, especially for children lacking technological and educational opportunities (Guglielmino, 2008). Many games have been developed to better motivate English learners and facilitate their language learning (Zou, Xie, & Wang, 2018, p. 429). In addition, such games can also increase the interest in knowledge by making things that the individual does not find attractive and dislikes to learn attractively (Wright, Betteridge, & Buckby, 2005, p. l). Further, these games facilitate students' L2 learning and enable interaction to provide environments that enable active learning. Subsequently, they can improve their L2 skills. Non-native English users have the opportunity to improve their L2 skills and proficiency levels by practicing with native speakers. The argument is that MMORPG plays an important role in the development of speaking skills among learners in English, and reinforces language acquisition (Rankin et al., 2006). Finally, the games foster social learning. As Squire (2006) argues, "... the most intense social learning is found in massively multiplayer games, where players interact with thousands of other players in real-time over the Internet" (p.23). In a multiplayer role-playing game, players can defeat their enemies and achieve determined goals by conducting momentary communication properly. Thanks to this instant interaction, users can add new words to their vocabulary and improve grammar knowledge.

2.2. MMORPGs in learning English-as-a-foreign-language (EFL)

Several studies have investigated the effects of MMORPG on L2 skill development and perceptions. Although the application of games for learning provides many advantages, few studies provide empirical evidence to support the effectiveness of game-based learning (Wang & Chen, 2012, p. 64; Karagiorgas & Niemann, 2017). In a study conducted by Peterson (2012), the effects of MMORPG on students' language skills and social skills were examined. The results showed that games provide students to gain various linguistic skills such as speaking, listening, reading, and writing (Hawisher & Moran, 1993). Peterson (2010) examined whether MMORPG has effects on the development of social relations, vocabulary learning, task-based language teaching, and communication competence in language education. In another study by Suh, Kim, and Kim (2010), differences in language learning acquisition were examined in classrooms where face-to-face education and the games MMORPG type were applied as learning tools (Peters & Vissers, 2004). In addition to supporting materials and activities, it has been observed that students interested in MMORPG have higher test results than the students having face-to-face education in the fields of listening, reading, and writing. In a similar study, the contribution of MMORPG to students' L2 learning was measured (Kongmee et al., 2011). It was concluded that MMORPG contributed to the development of language skills as it creates a safe, interesting, and non-critical environment for students. More recently, Sundqvist and Wikström (2015) conducted a study to reveal the direct relationship between vocabulary learning and out-of-school gameplay among 80 Swedish EFL students. The data required for this study were collected through questionnaires, language logs, and word tests. It was found that there was a direct relationship between the frequency of playing games and word learning. In another study conducted by Zheng, Bischoff, and Gilliland (2015), how vocabulary learning takes place

between a Japanese undergraduate student and a native English user was investigated. This research provides an alternative explanation of how players embodied in their avatars are appropriate for semiotic resources imbued in World of Warcraft. In another study on vocabulary learning, 107 ESL students studying in Denmark participated to reveal the relationships between the frequency of playing games outside the school and English vocabulary learning (Jensen, 2017). The results of the study showed that there was a positive relationship between out-of-school gameplay frequency and vocabulary learning.

The effect of playing MMORPG on social interactions using L2 has also been investigated. In a study conducted by Rama et al. (2012), the opportunities provided by MMORPG type World of Warcraft for language development and socialization were examined. Data were collected through rough participant observations and mutual correspondence while playing the game. Findings showed that the socialization environment provided by game environments was significantly effective in L2 learning when examined from a sociocultural perspective. In a study by Sylvén and Sundqvists (2012), the link between gaming as an extramural practice and L2 development was investigated. Eighty-six young Swedish learners aged 11-12 participated in the study. Data were collected through a questionnaire, a diary, and three proficiency tests. They played 7 popular digital games as out-of-school activities. The results indicated that playing digital games can contribute to L2 proficiency because such games provide abundant target language items that can enhance L2 proficiency (Sylvén & Sundqvist, 2012).

In sum, research indicates that there is a link between digital gaming and L2 learning, and; therefore, DigiTimes can offer language learning contexts of various kinds. However, to our best knowledge, no study has investigated how the MMORPG affects the learners' L2 learning attitudes and perceptions regarding their L2 communicative competence while playing the games. Further, nearly no studies have investigated L2 learners' attitudes regarding the MMORPG in L2 learning in the Turkish context. This paper aims to fill this gap. The guiding research question is how the use of Massive Multiplayer Online Role-Playing Games (MMORPG) affects English-as-a-foreign-language (EFL) learners' communicative competence perceptions.

3. Research questions

Research questions guiding this study focused on gaming's learning features preferred by the undergraduate level of L2 students playing MMORPG games. The following research questions were addressed within the context of the present study:

Question 1: Are there any significant differences between male and female learners in terms of (a) the number of years of experience and the number of hours spent per week on playing games; (b) the ways to play games (alone or with others); and (c) the strategies used to learn EFL while playing games?

Question 2: What do the learners believe regarding learning by playing games (e.g., how they can learn from games)?

4. Method

A mixed-research design was adopted as a research design in this study. A case study method was selected because it offered the opportunity to be very descriptive and holistic

(Glesne, 2011) and its examination of one or more specific situations and focuses on activities as they occur in the real world (Yin, 2009). It is required to determine the design of the in-depth analysis of complex structures with many relationships and variables. It is a method that is used to gather systematic information and in-depth analysis of how a limited system works and how it works (Merriam, 2009; Chmiliar, 2010). This case study explored how and why the MMORPG was used for L2 learning. Both qualitative and quantitative instruments were used to collect the data from participants. A survey was administered online via Google form and was available for one week. The data collected from the profile form indicated that nearly 88% of 67 participants were MMORPG players.

4.1. Participants

This study was carried out among undergraduate students in the English Language and Literature Department at a state university in Turkey. The study was conducted in the spring semester of 2020. In the present study, a purposive sampling technique was used. Purposeful sampling technique is a type of non-probability sampling that is used especially in qualitative research for literature identification and selection process the cases for the most effective use of limited resources (Patton, 2002). Only volunteer students participated in the study. They were informed that they could withdraw from the study at any point by informing the principal investigator via email or in person. The number of participants in this study is 67 (e.g., 58.2% female and 41.8% male). Their ages range between 18-20 years old (e.g., 22.4%) and 21-30 (e.g., 76.1%) years old. All participants are assumed to have B1+ and similar language proficiency levels, thence the medium of instruction is English. Participants were chosen from English Language and Literature department with various backgrounds regarding video game experience. All participants were asked to fill out a questionnaire concerning their L2 learning background before engaging in the whole process.

4.2. Measures and instruments

4.2.1. Questionnaire instrument

The form contained seven questions related to participants' backgrounds in English learning and playing video games. The survey was combined with quantitative data through open-ended and closed-ended questions and qualitative questions. The following three instruments were used in the study: (a) demographic information (4 items), (b) gaming experience and attitude toward gaming as an L2 tool (6 items), and (c) learning games experience (5 items). The quantitative data were obtained from the survey distributed among the participating students and the scores of student writing samples. The qualitative data were collected from the student's responses to the open-ended questions on the survey questionnaire. The coded data were entered into a Microsoft Excel spreadsheet. The gathered data were assigned numerical values and processed using the IBM SPSS Statistics version to conduct descriptive statistics.

4.3.1. Open-ended questions

The participants were also asked about the games they played to get a better understanding of their experience with learning English and playing games. The participants answered the open-ended questions individually. The interview was

conducted in English because it was thought that the participants can express thoughts to express freely in English. The open-ended questions were adapted from Law's (2016) study. The instruments used in the study are outlined in Table 1.

Table 1
Instruments used in the study

Questionnaire for Profiles of the participants	Open-ended Questions for Opinions
How many years have you been playing video games?	Do you learn any English by playing video games? In what ways do you learn English through those games?
About how many hours a week do you play video games?	Which parts of games are most helpful for your English learning? Why?
Do you play video games alone or with others?	In the past, when you've played video games, did you ever communicate with someone you were playing with (or against), using written or spoken English? If so, tell me about it.
Which are your favorite games?	If you answered yes to the question I just asked, can you tell me whom you were playing with (or against)? Where were these people from? What were their native languages?
Why do you play video games?	If you did communicate in English while playing video games, can you tell me why you use English?
What best describes you as a gamer?	
What best describes you as a gamer?	Do you think that people could play video games like this to improve their English? If so, tell me more about your opinion of this.
I turned the game settings to English	
I used a headset with a mic to speak to native English speakers	
I used the chat box to text native English speakers	
I joined an alliance to get help from native English speakers	
I read the community boards to learn more about the game	
	If you think people might play video games to help them improve their English,
	what kind of games do you think would be most helpful? Why?

4.3. Data analysis

First, the quantitative data analysis was conducted. Descriptive statistical results were presented to describe the profiles of the participants while inferential statistics were conducted to examine variables by gender. Next, qualitative data analysis was performed to examine participant beliefs and strategies regarding EFL learning by playing games.

The qualitative data obtained through student responses to the semi-structured questions were analyzed based on the Grounded Theory (Glaser & Strauss, 1967). First, the researchers of this study developed codes and categories based on the emerging patterns instead of specific and predetermined codes by making frequent comparisons (Miles & Huberman, 1994). In this sense, similarities or differences in the participants'

views on gameplay in their past experiences with video games were examined. Next, the authors of the study compiled the responses to each semi-structured question. Following that, the emerging qualitative data was examined several times to create a general sense through checking similarities and differences. Further, the repetitious codes were grouped under a category by comparing constantly them to previous data. Finally, the reliability of this data analysis was examined by an external examiner who had experience in analyzing qualitative data through specifying codes and categories out of the same data. A formula was used to calculate the level of consistency between the two coders. The number of agreements was divided by the sum of the number of agreements and the number of disagreements, then multiplied by 100. A high consistency (90%) was found between the coders in the coding of the data. The alignment of the research questions with the data source, data analysis, and purpose of the analysis is outlined in Table 2.

Table 2
Alignment of the research questions with the data source, data analysis, and purpose of the analysis

Research Questions	Data Source	Data Analysis	Purpose of the Analysis
Are there any significant differences between males and females in terms of - hours spent and experience in playing games, - playing games alone or with others, - strategies used to learn EFL while playing games?	Questionnaire	Descriptive and inferential statistics	To examine EFL learning strategies employed by the participants and their profiles by gender
What do Turkish EFL learners believe? What do they learn by playing games? How can games teach them?	Open-ended questions	Coding and classifying approach	To examine the beliefs about language learning through playing video games.

5. Results

5.1. Research Question 1: Are there any significant differences between male and female learners in terms of (a) the number of years of experience and the number of hours per week spent on playing games; (b) the ways to play games (alone or with others); and (c) the strategies used to learn EFL while playing games?

The profiles of the participants are shown in Table 3. Many of the attendees (61.2%) stated that they had been playing games for more than three years. Relatively a small number of the participants (28.4%) had been playing games for less than a year.

Table 4 shows that there was a significant difference between males and females in terms of the number of years of experience playing games. Males (M = 4.43, SD = .79) had spent more years playing games than females (M = 2.26, SD = 1.517, p = .0). The males had nearly two times longer years of experience in playing games.

Table 3
Number of years of experience playing video games

How many years have you been playing video games?	Gender		Total
	Male	Female	
< 1 Year	0	19	19
1-3 Years	1	6	7
4-6 Years	2	5	7
7-10 Years	9	3	12
> 10 Years	16	6	22
Total	28	39	67

Table 4
The difference in the number of years of experience between males and females

Gender	N	M	SD	*t*	*df*	*p*
Male	28	4.43	.790	6.923	65	.000
Female	39	2.26	1.517			

Descriptive statistics were conducted on students' game-play time per week (see Table 5). More than half of the participants spend at least an hour a week playing games (58.2%).

Table 5
Number of hours spent playing video games per week

Number of hours per week	Gender		Total
	Male	Female	
< 1 hour	2	26	28
1-3 hours	2	3	5
3-5 hours	1	4	5
> 5 hours	23	6	29
Total	28	39	67

As shown in Table 6, there was a significant difference in the number of hours spent playing games per week between females (M = 1.74, SD = 1.163) and males (M = 3.61, SD = 0.916), indicating that males nearly spend two times more hours in playing games.

Table 6
The difference in the number of hours spent on playing games between males and females

	Gender	N	M	SD	*t*	*df*	*p*
Number of hours spent on playing games per week	Male	28	3.61	.916	7,046	65	.000
	Female	39	1.74	1.163			

The participants were asked if they played video games alone or with others. The responses show that nearly half of them played alone (49.3%) while they also prefer to play with others (52.2%) and in a team (44.8%), as shown in Table 7.

Table 7
The way to play video games (alone or with others)

Do you play video games alone or with others?	Gender		Total
	Male	Female	
Alone	9	10	19
Alone, Team	1	2	3
Alone, With Others	1	1	2
Alone, With Others, Team	6	3	9
Team	4	7	11
With Others	5	11	16
With Others, Team	2	5	7
Total	28	39	67

As shown in Table 8, although females (M = 4.23, SD = 2.53) had a higher mean score than males (M = 3.64, SD = 2.147), there was no significant difference between males and females in terms of playing games alone or with others ($p > .05$), indicating that males and females have similar preferences regarding playing games alone or with others.

Table 8
Playing games alone or with others by gender

	Gender	N	M	SD	*t*	*df*	*p*
Playing games alone or with others	Male	28	3.64	2.147	-1.074	65	.287
	Female	39	4.23	2.253			

Table 9 shows that the participants describe themselves very differently. However, the most frequently described themselves as "winner: enjoy the competition with other players". Following that, they also frequently described themselves as "explorer" and "socializer". And, less frequently they described themselves as "achiever".

Table 9
Describing themselves as gamers

What best describes you as a gamer?	Gender		Total
	Male	Female	
Achiever: enjoy the completion of the game None of the above	3	3	6
Explorer: enjoy the discovery of new things in the game	8	8	16
Other	0	3	3
Socializer: enjoy the communication with other players	5	11	16
Winner: enjoy the competition with other players	12	14	26
Total	28	39	67

5.1.1. Learning strategies

Regarding the learning strategy used by students when playing video games, most participants claimed that they learned practical daily used vocabulary and phrases thanks to interacting with other players either through speaking or chatting. They especially mentioned the value of interaction with native or foreign language learners of English. The two most preferred game types are identified as MMORPG and FPS games which are played online with other players either as a team or as an individual.

Table 10 shows the frequently used learning strategies when playing video games. Similar to what one of the participants stated "I always play FPS games, so you have to use your mic to communicate with your teammates because it is very important to win the game or its round", coordinating actions and deciding on the next objective requires highly tuned minute orientations to other players' speech or messages and character movements in the game. As presented in Table 10, changing the game language into English is used by a considerable number of participants (69.5%) as a learning strategy, even one of the attendees expressed the impact of game-play language on her learning experience: "Listening to the speech of the main characters in story games is the most helpful thing that improves my English".

Table 10
In the past which learning strategy did you use when playing video games?

Strategies	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
	N	%	N	%	N	%	N	%	N	%
Using a headset with Mia microphone to native English speakers	13	19.4	17	25.4	16	23.9	14	20.9	7	10.4
Using Chat Box to text native English speakers	16	23.9	27	40.3	14	20.9	3	5.14	7	10.4
Turning Game Settings to English	19	28.4	29	43.3	14	20.9	1	1.5	4	6.0
Reading Community Boards to learn more about the game	14	20.9	25	37.3	20	29.9	5	7.5	3	4.5
Joining alliance to get help from native speakers	6	9	14	20.9	25	37.3	16	23.9	6	9

Considering similar answers of the respondents like; "Searching the meanings of unknown words and write it down in my vocabulary book", game-play language can be regarded as a valuable resource to raise awareness and learner autonomy, as well. The participants stated that they have learned a large number of words and phrases through game stories and directives. Participants change the game-play language into English while they are playing games either to be able to complete the game and understand the story behind it or to learn the language itself. Last but not least, another strategy utilized for language learning was mentioned by the attendees as "Reading Community Boards". These days accessing websites is far easier than it was in the past thanks to developing technology. Accordingly, game communities can reach huge populations, and players in these communities interact through websites created for the games (e.g., Reddit). They share their gaming experiences and sometimes consult with other players about a particular part of a game or hero. Besides, they can learn about the upcoming competitive tournaments organized through a game, moreover; they may learn firsthand information about the next updates. Applying for these community boards may require relatively higher language knowledge than the previously referred strategies; however, some of the

participants (57.6%) mentioned it as a useful way of learning the language. For example, an attendee expressed: "I have been playing video games since I was 5 or 6. I like to explore new worlds, characters, and stories. My listening, speaking, and reading improved by video games I played and searched in forums". Similar to changing the game language to English, reading game forums as a strategy may also be a sign of learner autonomy. Lastly, the least preferred strategy was identified as joining player guilds. The majority of participants preferred to play within a team or with other gameplay (67.8%) compared to (32.2%) who preferred alone gameplay.

On the other hand, when compared to incorporating alliances to get help, speaking and chatting are identified as highly selected strategies utilized by participants; besides attendees mostly choose to play games alone and with others. The combination of the findings provides reasonable explanations for why joining guilds is the lowest rate of preference. Although most of the participants are in favor of either oral or written communication, they don't find joining guilds so practical and useful way of learning a language and the game itself. Thus far, the examined data provide strong evidence for the efficacy of games on language learning. Another important strategy that emerged in this review is changing the game language to English. Participants who have autonomy, adjust the language to English and try to comprehend the story of the game and game objectives. In this way, they take the responsibility for their learning thereby having an individualized learning experience.

5.1.2. Communication in English

Participants are initially asked whether they communicate with the other players using spoken or written English in the course of game-playing to find an answer to this research question. A large majority of the attendees (n = 40) expressed that they communicate with the other players. About 67.5 of the respondents (27 out of 40) who communicate with the other players expressed that they mostly prefer speaking with the other gamers. As a follow-up, participants are asked "Where were the other gamers from? What were their native languages?". In response to these questions, they mentioned a substantial number of different countries such as Russia, Poland, the USA, India, France, and so on. Next, interviewers are asked, "Why did you choose to use English?". In response to this question, many of the participants (n = 32) stated that English is an international language; moreover, some of them (n = 11) expressed that they want to learn and improve their language skills. Besides, a few of them (n = 7) told that it was due to the language of the game. Taken together, the responses to these questions would appear to indicate that the motivation behind using English in the course of game playing can be either intrinsic or it can be a result of the participants' beliefs. In other words, some of the participants express that they want to develop their language skills and master daily language use: "I used English to communicate with others, to enhance my speaking skill, and also to learn something new about the colloquial language". Those who used English while playing games have intrinsic motivation; that is, it was their choice to use English and they believed that they would promote their language skills. On the other hand, one of the respondents explained the reason for using English like; "Because English is the universal language, and the majority of the people in the world can speak English." Drawing on these similar responses, it is possible to claim that the general belief of the attendees is that English is a common language among people around the world.

5.2. Research Question 2: What do the learners believe regarding learning by playing games (e.g., how they can learn from games)?

Participants were asked whether they think games can help develop language skills. Almost all of the participants (N = 52) claimed that games provide plentiful opportunities to promote language learning. As a follow-up, interviewers are asked "What part of English people can learn from games and how can games teach them? The most frequently mentioned skills were speaking and writing. Also, a good many respondents stressed about chances of vocabulary learning.

To begin with, online games such as MMORPG and FPS have a dynamic interface; that is, a single move may affect the course of the game-play and outcome. Thus, collaboration and synchronization of actions are key factors to win a round or pass an episode of a game. The reflexive nature of such games makes interaction so crucial that otherwise may lead to inconvenient results in terms of gameplay. This is how those interactive and complex digital game environments create abundant space where gamers can use spoken and written language. Besides, they are exposed to a substantial amount of relatively comprehensible input provided by the other gamers and the game itself.

Secondly, the game industry has been enhanced so dramatically that even the movie industry has begun to exploit the stories created for games and turn them into TV series (e.g., The Witcher). Accordingly, story-based games provide gamers with a movie-like experience; moreover, there are a large number of different genres such as war, zombies, car racing, love, mafia, sports, history, and so on. In line with this, some of the participants (N = 53) claimed that playing games expand their vocabulary knowledge and motivate them to learn more; thus, they can have a better grasp of the game and the story. For example, one of the participants commented: "if you are playing a story-based game, you need to understand the story and make a choice, so in order to do these, you need to think, learn and focus". Taken together, it can be suggested that players are exposed to abundant words and expressions through the cinematic climate of the games; in addition, those lexical items may be of great relevance in the understanding and completion of the game. Fostering intrinsic motivation of players, games lead them to search for words or expressions and promote vocabulary acquisition as a consequence. The digital realistic environments not only help players expand their vocabulary knowledge but also improve their listening skills as one of the participants stated: "Listening to the speech of main characters in story games is the most helpful thing that approves my English". The conversation between game characters plays a crucial role in the accomplishment of game objectives. In summary, it has been shown from this review that many of the participants believe that people can enhance their language skills by playing games. Likewise, the digital nature of games has plentiful resources for language learning that can be made use of by players.

6. Discussion

The quantitative results showed that although males had nearly two times longer years of experience in playing games, males and females have similar preferences regarding playing games alone or with others. Further, the results indicated that changing the game language to English is used by a considerable number of participants (69.5%) as a learning strategy.

The results obtained from this qualitative part suggested that the participants liked learning practical daily used vocabulary and phrases and speaking or chatting with L2

speakers while playing the games. They could also have opportunities to communicate with the other players from different countries. Further, they also believe that playing games could provide several opportunities to improve their language abilities. In this sense, games can be a new learning support tool for L2 learners. In line with the case in the education field, traditional learning methods have been replaced by teaching applications in which information communication technologies (ICT) are used, where learning takes place in a rapidly developing, environmentally, timely and space-independent manner. Digital games are often used in education both to help reflect real environments and to give feedback to students when necessary. Online games provide players to have virtual environments where they can have fun, freely experience using different identities, speak different languages, and at the same time establish new social interactions. This approach is to teach the courses directly to the students with programs or activities organized outside the curricula. Most L2 students have some difficulty remembering most of the vocabulary required to ensure fluency. Vocabulary learning is often seen as a boring activity; however, video games help improve word and communication skills by creating an environment where the players can express themselves easily, free from stress. The results of previous studies showed that students understand and remember the meanings of new words that English-only game interface and vocabulary associated with the tasks (Rankin et al., 2009; Peterson, 2010; Sundqvist & Wikström, 2015; Zheng, Bischoff, & Gilliland, 2015). Furthermore, this study revealed that player-created content and gameplay reveal trailers in MMORPG may be used for remembering vocabulary acquisition and other skills. In this respect, students are suggested to play games providing them to practice L2 vocabulary and keep their L2 motivations at a high level. Some studies found that gender is a determining factor in vocabulary learning while the studies by Sundqvist and Wikström (2015) and Jensen (2017) have contradictory results on playing games.

7. Conclusions

This study is limited in several ways. First, although this study used both quantitative and qualitative data collection tools, more reliable results can be obtained with in-depth interviews or one-to-one engagement with individual participants, or concurrent data collection tools such as think-aloud verbal protocols. Further, participants with different L2 proficiency levels can yield more interesting results. Finally, a quasi-experimental study can give more reliable results. In light of the limitations, the following conclusions can be drawn: first, participants are in favor of interacting with other gamers through their gameplays; moreover, they believe games not only improve their speaking and writing skills but also help them expand their vocabulary knowledge, especially daily-used phrases. Second, game interfaces promote effective environments where players can perform their fundamental language skills in diverse situations without feeling anxious, and strengthen their affective reactions such as motivation and interest. Therefore, most of the participants think that their language skills improve more when they play in a team or against a person. Third, communication with native English speakers throughout the game provides a great opportunity for L2 learners to measure their language proficiency. Such game functions as text and voice chat providing real-time feedback while the learners are focusing on a specific text. Those functions also provide to resolve communication problems for students. One of the most important functions of the language is to transfer the knowledge of many cultures. Learning L2 allows not only learning the rules of that language, but also learning the behaviors, values, norms, beliefs, and attitudes of the societies where the language is spoken. Finally, the results of the

present study suggest that English, which is the universal language in MMORPG, is used for speaking and writing practice in communities whose native language is not English. This result is aligned with previous research (Thorne, 2008). These games provide plenty of interaction opportunities for the players, and the game itself may be considered a resource for L2 learning. In other words, the story, hero responses, and puzzles need to be solved to move forward, and character interfaces and settings may all affect the direction of the game; thus, any player has to understand and play considering them properly. Nevertheless, the descriptive statistical analysis of this study suggested that these elements in a game are turned into L2 learning artifacts by participants. The safe environment of games helps learners have less anxiety and low affective filtering; thus, a learner can experience language and test their hypothesis in the target language without worrying about making mistakes, which is fundamental to acquisition. Further, the interactive gameplay environments let player test their language skills fairly and in a different way from instructional classroom designs and let them use these games as self-guided and self-access tools because they play them whenever they want.

Author Statement

The authors declare that there is no conflict of interest.

ORCID

Ufuk Bakan https://orcid.org/0000-0001-7302-9398

Turgay Han https://orcid.org/0000-0002-9196-0618

Uğur Bakan https://orcid.org/0000-0003-0117-3731

References

Acquah, E. O., & Katz, H. T. (2020). Digital game-based L2 learning outcomes for primary through high-school students: A systematic literature review. *Computers & Education, 143*: 103667. https://doi.org/10.1016/j.compedu.2019.103667

Barnett, J., & Coulson, M. (2010). Virtually real: A psychological perspective on massively multiplayer online games. *Review of General Psychology, 14*(2), 167–179. https://doi.org/10.1037/a0019442

Brand, J. E., Knight, S. J., & Majewski, J. (2003). *The diverse worlds of computer games: A content analysis of spaces, populations, styles and narratives.* Paper presented at Digital Games Research Conference. The Netherlands.

Bonk, C., & Dennen, V. (2005). *Massive multiplayer online gaming: A research framework for military training and education* (Technical Report No. 2005-1). Washington, DC: US Department of Defense (DUSD/R): Advanced Distributed Learning (ADL) Initiative.

Carnagey, N. L., & Anderson, C. A. (2004). Violent video game exposure and aggression: A literature review. *Minerva Psichiatrica, 45*(1), 1–18.

Chapelle, C. A. (2001). *Computer applications in second language acquisition*. Cambridge University Press.

Childress, M. D., & Braswell, R. (2006). Using massively multiplayer online role-playing games for online learning. *Distance Education, 27*(2), 187–196. https://doi.org/10.1080/01587910600789522

Chmiliar, l. (2010). Multiple-case designs. In A. J. Mills, G. Durepos, & E. Wiebe (Eds.), *Encyclopedia of Case Study Research* (pp. 582–583). SAGE Publications.

Galarneau, L., & Zibit, M. (2007). Online games for 21st-century skills. In D. Gipson, C. Aldrich, & M. Prensky (Eds.), *Games and Simulations in Online Learning: Research and Development Frameworks* (pp. 59–88). Idea Group.

Gee, J. P. (2005). Learning by design: Good video games as learning machines. *E-Learning and Digital Media, 2*(1), 5–16. https://doi.org/10.2304/elea.2005.2.1.5

Gentile, D. (2009). Pathological video-game use among youth ages 8 to 18. *Psychological Science. 20*(5), 594–602. https://doi.org/10.1111/j.1467-9280.2009.02340.x

Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Mill Valley, CA: Sociology Press.

Glesne, C. (2011). *Becoming qualitative researchers: An introduction* (4th ed.). Boston, MA: Pearson.

Guglielmino, L. M. (2008). Why self-directed learning. *International Journal of Self-Directed Learning, 5*, 1–14.

Hawisher, G., & Moran, C. (1993). Electronic mail and the writing instructor. *College English, 55*(6), 627–643. https://doi.org/10.2307/378699

Horwitz, E. K. (2020). *Becoming a language teacher: A practical guide to second language learning and teaching*. Melbourne, VIC: Castledown.

Jensen, S. H. (2017). Gaming as an English language learning resource among young children in Denmark. *CALICO Journal, 34*, 1–19.

Karagiorgas, D. N., & Niemann, S. (2017). Gamification and game-based learning. *Journal of Educational Technology Systems, 45*(4), 499–519. https://doi.org/10.1177/0047239516665105

Kongmee, L., Strachan, R., Pickard, A., & Montgomery, C. (2011). Moving between virtual and real worlds: Second language learning through massKely multiplayer online role-playing games (MMORPGs). In *Proceedings of the 3rd Computer Science and Electronic Engineering Conference (CEEC)*. IEEE. https://doi.org/10.1109/ceec.2011.5995817

Liaw, M.-L. (1998). Using electronic mail for English as a Foreign Language instruction. *System, 26*(3), 335–351. https://doi.org/10.1016/s0346-251x(98)00025-6

Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation* (2nd ed.). San Francisco, CA: Jossey-Bass.

Miles, M, B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded Sourcebook* (2nd ed.). Thousand Oaks, CA: Sage Publications.

Newman, J. (2004). *Videogames.* Routledge.

Patton, M. Q. (2002). *Qualitative research & evaluation methods*. Thousand Oaks, CA: Sage Publications.

Peterson, M. (2010). Massively multiplayer online role-playing games as arenas for second language learning. *Computer Assisted Language Learning, 23*(5), 429–439, https://doi.org/10.1080/09588221.2010.520673

Peterson, M. (2012). Learner interaction in a massively multiplayer online role-playing game (MMORPG): A sociocultural discourse analysis. *ReCALL, 24*(3), 361–380. https://doi.org/10.1017/S0958344012000195

Peters, V. A. M., & Vissers, G. A. N. (2004). A simple classification model for debriefing simulation games. *Simulation & Gaming, 35*(1), 70–84. https://doi.org/10.1177/1046878103253719

Rama, P. S., Black, R. W., van Es, E., & Warschauer, M. (2012). Affordances for second language learning in World of Warcraft. *ReCALL, 24*(3), 322–338. https://doi.org/10.1017/S0958344012000171

Rankin, Y. A., Gold, R., & Gooch, B. (2006). Playing for keeps: Gaming as a language learning tool. In *Proceedings of the International Conference on Computer Graphics and Interactive Techniques: ACM SIGGRAPH 2006 Educators Program*. ACM. https://doi.org/10.1145/1179295.1179340

Rankin, Y. A., Morrison, D., McNeal, M., Gooch, B., & Shute, M. W. (2009). Time will tell: In-game social interactions that facilitate second language acquisition. In *Proceedings of the 4th International Conference on Foundations of Digital Games* (pp. 161–168). ACM. https://doi.org/10.1145/1536513.1536546

Schimmenti, A., Infanti, A., Badoud, D., Laloyaux, J., & Billieux, J. (2017). Schizotypal personality traits and problematic use of massively-multiplayer online role-playing games (MMORPGs). *Computers in Human Behavior*, *74*, 286–293. https://doi.org/10.1016/j.chb.2017.04.048

Scholz, K., & Schulze, M. (2017). Digital-gaming trajectories and second language development. *Language Learning & Technology*, *21*(1), 99–119. https://dx.doi.org/10125/44597

Shahriarpour, N., & Kafi, Z. (2014). On the effect of playing digital games on Iranian intermediate EFL learners' motivation toward learning English vocabularies. *Social and Behavioral Sciences*, *98*, 1738–1743. https://doi.org/10.1016/j.sbspro.2014.03.601

Squire, K. (2006). From content to context: Videogames as designed experience. *Educational Researcher, 35*(8), 19–29. https://doi.org/10.3102/0013189X035008019

Steinkuehler, C. A. (2003). *Massively multiplayer online video games as a constellation of literacy practice*. Paper presented at the 2003 International Conference on Literacy. Ghent, Belgium.

Suh, S., Kim, S. W., & Kim, N. J. (2010). Effectiveness of MMORPG-based instruction in elementary English education in Korea. *Journal of Computer Assisted Learning, 26*(5), 370–378. https://doi.org/10.1111/j.1365-2729.2010.00353.x

Sundqvist, P. (2009). *Extramural English matters: Out-of-school English and its impact on Swedish ninth graders' oral proficiency and vocabulary*. Doctoral dissertation, Faculty of Arts and Education, Karlstad University, Seden.

Sundqvist, P., & Wikström, P. (2015). Out-of-school digital gameplay and in-school L2 English vocabulary outcomes. *System*, *51*, 65–76. https://doi.org/10.1016/j.system.2015.04.001

Sylvén, L. K., & Sundqvist, P. (2012). Gaming as extramural English L2 learning and L2 proficiency among young learners. *Recall*, *24*(3), 302–321. https://doi.org/10.1017/S095834401200016X

Thorne, S. L. (2008). Transcultural communication in open Internet environments and massively multiplayer online games. In S. S. Magnan (Ed.), *Mediating Discourse Online* (pp. 305–327). Amsterdam, NL: John Benjamins Publishing Company.

Tomlinson, B., & Masuhara, H. (2009). Playing to learn: A review of physical games in second language acquisition. *Simulation & Gaming*, *40*(5), 645–668. https://doi.org/10.1177/1046878109339969

Utku, Ö., & Dolgunsöz, E. (2018). Teaching EFL vocabulary to young digital natives through Online Games: A study with Turkish 5th grade EFL learners. *International Online Journal of Education and Teaching (IOJET), 5*(1), 115–130.

Vygotsky, L. S. (1978). *Mind in society: Development of higher psychological processes*. Harvard University Press.

Wang, L. C., Chen, M. P. (2012). The effects of learning style and gender consciousness on novices' learning from playing educational games. *Knowledge Management & E-Learning*, *4*(1), 63–77. https://doi.org/10.34105/j.kmel.2012.04.006

Wright, A., Betteridge, D., & Buckby, M. (2005). *Games for language learning* (3rd ed.). Cambridge University Press.

Xie, J., Wang, M., & Hooshyar, D. (2021). Student, parent, and teacher perceptions towards digital educational games: How they differ and influence each other. *Knowledge Management & E-Learning, 13*(2), 142–160. https://doi.org/10.34105/j.kmel.2021.13.008

Yaşar, S. (2018). The role of massively multiplayer online role-playing games in extramural second language learning: A literature review. *Journal of Educational Technology & Online Learning, 1*(3), 1–10. https://doi.org/10.31681/jetol.436100

Yee, N. (2003). *Learning leadership skills*. The Daedalus Project. Retrieved from http://www.nickyee.com/daedalus/archieves/000338.php

Yin, R. (2009). Case Study Research: Design and Methods (4th ed.). Los Angeles: Sage.

Zheng, D., Bischoff, M., & Gilliland, B. (2015). Vocabulary learning in massively multiplayer online games: context and action before words. *Educational Technology Research and Development, 63*(5), 771–790. https://doi.org/10.1007/s11423-015-9387-4

Zou, D., Xie, H., & Wang, F. L. (2018). Future trends and research issues of technology-enhanced language learning: A technological perspective. *Knowledge Management & E-Learning, 10*(4), 426–440. https://doi.org/10.34105/j.kmel.2018.10.026