Incidental vocabulary acquisition and gamer perceptions of learning in massive online multiplayer role-playing games

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Incidental Vocabulary Acquisition and Gamer Perceptions of Learning in Massive Online Multiplayer Role-playing Games

A Thesis Submitted to

The Department of Applied Linguistics

In Partial Fulfillment of the Requirements for

The Degree of Master of Arts

By

Gilan Hamdi Hussein

Under the supervision of Dr. Amira Agameya

May 2019
The American University in Cairo
School of Humanities and Social Sciences

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Submitted to the Department of Applied Linguistics

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In partial fulfillment of the requirements for
The degree of Master of Arts in Teaching English to Speakers of Other Languages

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Abstract

The present study aims to investigate incidental vocabulary acquisition in massive online multiplayer role-playing games in a non-instructional setting. The purpose of this study is to explore the perceptions of young adult Egyptian online video-gamers of their vocabulary acquisition through gameplay. Furthermore, the study aims to discover some of the learning and interaction strategies that these gamers employ in their online discussions and to analyze their potential in promoting vocabulary acquisition. Findings from the analysis of the data gathered from an online questionnaire, semi-structured interviews with some of the participants, and ongoing observations of gamers’ online interactions on game-related discussion forums confirmed the merit of online video-games in encouraging incidental acquisition of vocabulary items in the game. The majority of participants were in consensus regarding their perceptions of their L2 vocabulary acquisition through game involvement. Instances of dual coding, elaborations, error corrections, and questioning provided evidence of some learning strategies and interaction strategies utilized by gamers of online role-playing video-games in learning L2 vocabulary items.

**Keywords:** Vocabulary acquisition – incidental vocabulary acquisition – online games – MMO – MMORPG – PUBG – video gamers - Egyptian video gamers – online games in the Middle East – gamer perceptions – learning strategies – online interactions
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Chapter 1

Introduction

1.1. Background

Computer mediated communication (CMC) refers to human communication via computers that allows sharing written information, pictures, videos and audio data where limitations of place and time are minimized. The element of time creates a distinction between synchronous CMC, where individuals communicate with each other in real time; whereas asynchronous CMC refers to the mode of communication via computers where participants are not necessarily online at the same time. Synchronous CMC offers different modes of communication, including text-based online chat, audio, and video conferencing; while asynchronous CMC includes email, discussion forums, and mailing lists. The relationship between CMC and CALL (Computer Assisted Language Learning) is frequently regarded contrastively; in early CALL programs, computers were given the role of tutor in human–computer language interactions. However, CMC, describes ‘computer Learning (CALL) as a tool’, where the role of the computer is essentially altered to ‘provide alternative contexts for social interaction; to facilitate access to existing discourse communities and the creation of new ones’ (Warschauer & Kern, 2000). Academic research in diverse disciplines has examined communication via computers and has confirmed the significance of this medium of communication and its impact on education (Simpson, 2002), psychological well-being (Caplan, 2003), and human interaction (Ramirez, Zhang, McGrew, & Lin, 2007).

The popularity of video games among youth has encouraged teachers as well as researchers to further explore the impact of gaming on children and adolescents. However, most of these
studies mainly focused on confirming the potential harmful effects of video games because of evident physical harm resulting from spending extended hours of uninterrupted playing (e.g. Anderson & Griffiths, 2004; Ritterfeld & Weber, 2006). It is generally assumed by members of society that involvement in video games may proliferate children’s as well as young adult’s aggressive behavior and may decrease socially-accepted behavior. Findings of research that has experimented with video gamers from both genders in various settings support this assumption (Anderson & Bushman, 2001). However, Daphne Bavelier (2010) — a leading cognitive researcher — refuted this general belief where her scientific investigation into the matter showed counterintuitive findings on the effects of video games on learning and brain plasticity. Bavelier and others confirmed that video games enhance a gamer’s perception, attention, cognition, and even vision when played in rational dosages (Dye & Bavelier, 2010; Green & Bavelier, 2012). Besides being fundamentally entertaining, video games offer young people a realm where they can converse with others in virtual groups, where leadership skills, meaningful learning, teamwork, expert-novice support, and other interpersonal skills are encouraged and developed (Schrader & McCreery, 2008; Steinkuehler, 2007; Gee, 2003).

I.2. Research gap, problem and rationale

Research studies on the merits of using video games to promote L2 vocabulary acquisition have rendered interesting findings. One study, for example, found positive impact of videogames on learner affect and vocabulary retention, and learners’ ability to recall new in-game vocabulary was supported (Hitosugi, Schmidt, & Hayashi, 2014). The impact of involvement in simulation games, furthermore, has been found to promote long-term retention of target
language vocabulary (Franciosi, Yagi, Tomoshige, & Ye, 2016). A study by Maior (2016) targeting incidental vocabulary acquisition, for example, found that initial receptive knowledge of new vocabulary items from playing the MMORPG World of Warcraft can occur incidentally in a relatively brief period (2-4 hours), and that acquisition was found to be highly encouraged by in-game abundance of word frequency exposure, visual representations of individuals, in-game monsters, and locations (Maior, 2016). However, most of these studies investigated L2 learning at large; a limited number of studies targeted vocabulary acquisition in particular (Saragi, Nation, & Meister, 1978; Schrader & McCreery, 2008; Steinkuehler, 2010; Zheng, Bischoff, & Gilliland, 2015). In addition, researchers mostly examined video-games in an L2 educational program, where the setting can be quite formal and acquisition far from incidental (Zheng, Bischoff, & Gilliland, 2015). This is unlike the present study which aimed to explore incidental vocabulary acquisition in a non-academic setting. Another methodological gap in the literature is that previous studies on this topic mainly recruited young and teenage participants; in one survey conducted in the U.S. in 2018, it was revealed that adult gamers (ranging between 18 and 35) represented the highest percentage of 4,000 respondents (29%), compared to respondents under 18 (28%) and above 36 (20%) (Figure 1) which encourages the purpose of the current study.
Additionally, all studies available on this topic were conducted in the U.S., Europe, or the Far East (Peterson, 2010; Eklund, 2011; Steinkuehler, 2010; Chen, 2015). A very limited number of studies in the literature targeted gamers in the Middle East, which provides another gap for the need for this research. It is worth mentioning that the number of video-gamers in the Middle East has registered a significant rise in recent years. A statistical study of consumer revenues generated by global games industry showed that the Turkish video game market was the largest in the MENA region in 2017, with a revenue of approximately 774 million U.S. dollars, followed by Saudi Arabia's gaming revenue that reached 647 million U.S. dollars, UAE (281.61 million dollars), Israel (123.56 million dollars), Iraq (77.73 million dollars), and Lebanon (49.91 million dollars).

I.3. Rationale for the study

This study aims to contribute to the inquiry into the potentials of video games for promoting second language vocabulary acquisition. This inquiry will be limited to the massive multiplayer online role-playing games (MMORPG) genre for its multiplayer mode and multilingual dependency, which allow gamers multiple opportunities for interaction during playing. Many MMORPGs, such as World of Warcraft, Second Life, Blade and Soul, Guild Wars, and PUBG
have thousands of participants from diverse age groups, social and linguistic backgrounds. What unifies all these people is the need to use English to communicate during playing. These gamers generally play MMORPG for the benefit of having stress-free social interactions and in most cases, they do not affiliate their involvement in MMORPGs with their language learning advancement. In other words, the gamers are not consciously aware of the language learning side benefit of playing. Nevertheless, their linguistic ability may be — involuntarily — influenced by numerous linguistic elements in the games they are engaged in, such as game orientation and story line, instant messaging with other gamers, and game instructions and quest logs. This research aims to investigate young adult, Egyptian gamers’ perceptions of second language learning at large and vocabulary acquisition in specific in MMORPGs by means of an online survey, and by conducting informal interviews with a few Egyptian MMORPG gamers. In addition, an analysis of gamers’ L2 interactions (i.e. with particular focus on discourse functions and learning strategies) in game time and discussion forums is another goal of the present study.

I.4. Research questions:
In order to investigate the effect of involvement and interaction in MMORPG on incidental vocabulary acquisition the present study aims to answer the following research questions:

1. What are young adult gamers’ perceptions of vocabulary acquisition in MMORPGs?
2. What vocabulary learning strategies are evident in their game-related interactions?
3. What discourse strategies of interaction are employed in their game-related discussions?
I.5. Definitions of constructs

I.5.1. Gamer’s perceptions

Gamer’s perception refers to the way gamers evaluate their experience, including learning in general and vocabulary acquisition in particular while involved in an MMORPG; it is their own perception of how the game has facilitated or encouraged their vocabulary intake, whether they are fully aware (or oblivious) of such acquisition, and to what they attribute this acquisition if any. Evidence from literature emphasize the possibility to discover gamers’ perceptions from discourse produced online because of the space of freedom given to individuals interacting online. Hauffaker and Calvert (2005) found that adolescent bloggers utilized their weblogs to echo their personal feelings and standpoints. This was exemplified by observing how personal information like name, gender, emoticons, and semantics were disclosed by the participants when they blogged. Previous studies have emphasized the merit of employing web-based surveys for collection of sensitive and personal data directly from participants which is mostly encouraged by the greater anonymity that online surveys offer (Chang & Krosnick, 2010). Thus, it can be concluded that online domains usually provide an encouraging setting for disclosure of individual self-perception and self-discovery.

I.5.2. Gamer interaction

Gamer interaction refers to two main features: (a) discourse strategies, and (b) learning strategies (the two features are to be discussed in detail hereafter). This is presented in the exchange of discourse among gamers by means of text-based and voice chats, and participation in game competitions that require goal-oriented collaboration such as discussions, planning, and team playing (Chen, 2015). Interactions between gamers can be observed in instant messaging in game time, or in requests/offers of feedback in game discussion forum.
I.5.3. (A) Discourse strategies of interaction

In this study, gamer interaction is to be investigated in relation to its potential for promoting vocabulary acquisition; interaction has been found to facilitate learning (Schmidt, 1990), and to stimulate negotiation of meaning (Pica, 1994); it also encourages the generation of extensive input (Krashen, 1985)—all being necessary ingredients of second language acquisition. Observation of gamer’s utilization of discourse can provide insight into the nature of their interaction; specifically discourse functions here refer to instances of questions, greetings, requests for clarification, self-corrections, and confirmation checks (Reinders and Wattana, 2011) as examples of interaction between gamers in the target language. This resonates with the definition of discourse functions as, “categories of behavior in electronic discourse, such as requests, responses, apologies, greetings, complaints, and reprimands”, (Sotillo, 2000). For the corpus-based searches, expressions of greetings at the beginning of game matches or to initiate a discussion on the game forum, requests for clarification regarding a game conquest or achievement, instances of self-corrections and confirmation checks will be the search target once the corpus has been built. The presence/absence of significant frequencies of these discourse functions will confirm/disprove the effectiveness of this type of interaction in L2 on vocabulary acquisition.

I.5.3. (B) learning strategies as instances of interaction

According to Rebecca Oxford (1990), learning strategies are the active measures taken by language learners to improve their own learning. Practices of dual coding, elaborations and spaced practice are some of the learning strategies this study would attempt to trace. The essence of dual coding (combining words with visual representations) is quite abundant in
MMORPG; this strategy enhances learning by enabling learners to create visual representations of the new words and concepts they are learning (Paivio, 1990). Elaboration, which is describing ideas in detail and not merely recalling them, is another potential learning strategy that encourages learning (Weinstein, 1982) and both often arise in game forum discussions. Spaced practice, as well, has been noted to improve learner’s ability to retrieve what they have learned since allowing a space of time to “forget” the information enables learners to “relearn” those ideas (Weinstein et al., 2010). This is often the case with adult MMO gamers who usually develop gaming habits that can fit in their work/education schedule that forces them to spend repeated intervals of time away from the game. Patterns of these strategies will be explored mostly in relation to the game discussion forum. The significance of these strategies is that they combine between both the direct language learning strategies (such as remembering and retrieving) and the indirect learning strategies such as affective strategies (as is the case with regulating their emotions, and feeling relaxed and entertained) and social strategies such as learning with and from others (Oxford, 1990).

I.6.Delimitations

This study aimed to add to the existing literature exploring the significance of MMORPGs in language learning by investigating the perceptions of a scarcely explored age group of participants (young adult gamers). Moreover, the study targeted Egyptian nationals only and therefore their assumed first language is colloquial Arabic. With regards to the second language, it is assumed to be English since it is the basic second language taught in all schools in Egypt (private, public, or international). Although issues relating to gamers’ gender, identity, and communication skills are of great significance with regards to the nature of this research, and perhaps might arise in the course of this investigation, these aspects would not be investigated.
1.7. List of abbreviations

CMC: Computer mediated communication

MMORPG: Massive multi-player online role-playing game

MMO: Massive multiplayer online game

WoW: World of Warcraft (a leading MMORPG game)

Avatar: an icon or figure representing a person in a video game, Internet forum, etc.

FF: Food Force (video game)

SLA: Second language acquisition

PUBG: Player’s unknown battleground – a top chart MMORPG game

FPS: First Person shooter (game genre)

Second Life: an MMORPG game

The Sims: an MMORPG game
Incidental vocabulary acquisition has enjoyed a great deal of attention by scholars in linguistic and educational disciplines with the rise of modern communication media. Defined by most linguists as an efficient method of learning vocabulary from context, incidental vocabulary acquisition is achieved when learners have no intention of learning vocabulary (Day, Omura, & Hiramatsu, 1991; Jenkins, Stein, & Wysocki, 1984; Nagy, Herman, & Anderson, 1985; Saragi, Nation, & Meister, 1978). From an interactionist viewpoint (Vygotsky, 1978), online video games provide proper setting for social interaction which has been found to play an influential role in learning and acquisition.

This chapter reviews literature related to learning English vocabulary in non-instructional settings through involvement in an online video game. The first part of the chapter provides background on massive multi-player online role-playing games, which is the target genre of video games that this study aims to investigate. The second part focuses on the role of MMORPGs in second language acquisition and informal learning. The third section is dedicated to vocabulary learning. Initially, studies that address using video games for vocabulary learning in general are explored and then the section concludes by reviewing research that investigate incidental vocabulary acquisition in specific. The last section discusses the gap in literature of research that explore the merit of unconventional and entertaining learning approaches in adult learning that the current paper aims to support.
Review structure

Investigations of the merits of MMORPGs in linguistic development increased proportionally with the growing, multidisciplinary interest in exploring CMC in search for instances of human interactions. Relevant literature can be categorized thematically; the first category is the most general as it encompasses studies investigating the role of MMORPG in SLA at large; the second category is more focused since it includes research exploring the potentials of MMORG in informal language learning; the final category – the most specific- reviews studies that address a specific linguistic experience, that is vocabulary acquisition in MMORPG. Numerous studies have found positive results for using MMORPG for language learning like the learner-based CALL project by Rankin, Morrison, McNeal, Gooch, and Shute (2009). In this study, discourse segments produced by ESL learners playing Ever Quest II were analyzed and pre- and post-tests of vocabulary were performed. The project included advanced learners of English from China and native speakers of English. The sample was divided into three sets: a set of only Chinese ESL gamers, a set of both Chinese ESL and native English-speaking gamers, and a set of Chinese ESL learners who were conventionally instructed the targeted vocabulary in a classroom. The findings demonstrated that the ESL learners’ group who played the game in collaboration with native English speakers achieved superior knowledge of in-game vocabulary to those who played the game individually and even more than those who were instructed to learn this vocabulary in classroom conventionally. Significantly, gamers engaged in a wide range of target language production which involved collaborative dialogue as they proceeded in the game. Such findings concur with Peterson ‘s (2012), whose research confirms that playing MMORPG encourages target language production, fluency, and the development of discourse functions related to team-playing as an instance of social interaction. The findings also suggested
that MMORPGs environment provide participants with a relaxed, naturalistic learning and communication settings. In another project that investigated the acquisition of vocabulary through involvement in MMORPG, Sundqvist and Sylvén (2012) demonstrated that World of Warcraft encouraged and simplified the acquisition of English vocabulary by high school students from Sweden.

II.1. Historical background on computer games

Although the 1960s and 1970s witnessed the rise of video games by the development of the first game console — The Game Box — by Ralph Baer (1966), and the most popular game console — The Atari — by Nolan Bushnell and Ted Dabney (1972), the actual birth of video games was in the 1950s with the rising demand for research on artificial intelligence, computer-programmed trainings and instructions, and demonstration programs following World War II (Guetzkow, 1959). Alan Turing and David Champernowne (1950) developed one of the earliest computer games - the Chess. In the 1970s, computer games appeared online with the development of the ARPANET (Advanced Research Projects Agency Network) — an earlier version of today’s internet - that was commissioned by the U.S. Department of Defense for research purposes. In 1978, the first online computer game was developed - MUD (multi-user dungeon/domain) and ultimately it was connected to the ARPANET by Roy Trubshaw and Richard Bartle at the University of Essex, UK. The game enjoyed several locations for gamers to navigate and chat with other gamers and a combat system could be activated. Top-charted game consoles like PlayStation (Sony, 1994), the XBOX (Microsoft, 2001) and Wii (Nintendo, 2006) provided gamers with an upgrade -online interface- which significantly enhanced gameplay experience. Henceforward, video games have been transformed into interactive media that offered gamers
both entertainment and communication. From a linguistic standpoint, online video games provide gold mines for language research and discourse analysis; such universal phenomenon has altered human interaction which inspired social scientists and linguists to investigate it (Aarts, Östman & Verschueren, 2011).

II.2. Massive Multiplayer Online Role-playing Games

Massive multiplayer online role-playing games (MMORPG) represent a genre of video games that has been scarcely investigated despite being abundant in social interactions and linguistic practices. Hennig (2013) defined MMORPG as “a ludic, narrative as well as a social room.” In this genre of online games, gamers construct their graphic figures (avatars or virtual characters), modify them and play the "parts" that are given for each character. In addition, gamers of this genre (who have topped 10 billion members in just one top of the chart MMO in 2016 World of Warcraft commonly known as WoW) have formed a linguistic community of practice in which certain linguistic codes are utilized and comprehended by all individuals; by employing a cluster of acronyms and abbreviations, gamers inspire communication, and save time, and by that they set an instances of a community of practice which reflects the various scopes of communication and social interaction (Lave & Wenger, 1991).

II.3. MMORPG and SLA

Prensky (2001) noticed a resemblance between several features in MMORPGs and language teaching environment. These fundamental features in MMOs such as rules, objectives, result and feedback, challenges (combats), interaction; and the illustration of a
theme are very analogous to the features of a successful (task-based) language teaching environment (Thomas and Reinders, 2011), and hence are exceedingly pertinent to second language acquisition (SLA). Additionally, researchers in SLA who adopt the social constructivism approach emphasize the belief that learning occurs optimally by performing collaborative tasks (Vygotsky, 1978). In this regard, Peterson (2010a) confirms that MMORPGs are subsidiary settings by means of offering numerous occasions for peer support, community involvement, and collaborative social interaction where learners are actively involved in actual interaction in the SL with various interlocutors during the game. Peterson (2010a) contends that MMORPGs are essential settings for language learning from a sociocultural and psycholinguistic viewpoint. From the standpoint of psycholinguistics, there are two forms of interactions that could encourage SLA (Peterson, 2010a). The first is negotiation of meaning, which means using repair strategies for resolving problems in communication. Such strategies entail asking for explanation and inspecting comprehension (Long, 1991). The second mode of interaction demands focus on form and giving/receiving corrective feedback on part of learners. From such psycholinguistic standpoint, the in-real-time language interactions in MMORPGs are considered beneficial for cognitive restructuring that is required for successful language learning. From a sociocultural viewpoint, the social dimension of interaction promotes second language learning by means of collaboration (Firth and Wagner, 1997; Lantolf and Thorne, 2006).

Researchers adopting the social constructivism approach argue that learning occurs successfully by performing collaborative tasks (Vygotsky, 1978). Hence, MMORPGs would be perfect settings as they offer multiple opportunities for community membership, peer assistance, and collaborative social interaction. Additionally, advocates of game-enhanced
learning suggest that the entertaining, learner-centered quality of virtual worlds stimulates motivation (Gee, 2003; Gee, 2007). Motivation is regarded as a significant factor for successful learning of target language (Dörnyei, 2001). In games, learners are inherently motivated to enhance and employ their English to achieve progress in their games (Gee, 2007). Furthermore, MMOs provide an environment for ideal learning, which demands a level of input that is higher than current learner’s competence level to a certain degree according to Krashen (1985)’s input hypothesis; in this game genre, a learner is required to perform certain tasks that are usually considered as challenging for their present skill, and in the meantime they have the opportunity to request assistance from more advanced and higher skilled peer-gamers. Gee (2003, 2007) emphasized the merit of MMORPGs for offering an arena where gamers can practice a target language through discussions of the educational prospects in videos games; he acknowledged numerous learning principles that are evident in MMORPG; some of these principles parallel the theory in second language acquisition on the significance of active interaction in and exposure to the second language (Long, 1981; Swain, 2000; Sundqvist & Sylvén, 2012).

II.4. MMORPG’s role in informal learning

Although gamers play video games chiefly for entertainment, linguistic investigations found evidence that these are involved in incidental or informal learning. Research studies on informal learning have questioned how informal practices impact learning. Language learners gain more knowledge outside formal educational settings, like schools, in subjects of their choice and for which they are acutely motivated regardless of their sociocultural background (Gee, 2003; 2004). The hypothesis of the educational philosopher Dewey (1938) – in his
article “Education and Democracy in The World of Today” ( Dewey, 2011 , pp. 96-100) - suggests that learning occurs in an individual’s experience in informal settings; this hypothesis has been reinforced by Smith (2002), who supposed that institutions and interactions are what shape an individual, and earlier by Fox (1997), who contended that during informal practice, individuals accumulate much of what they learn.

Informal learning designates the intrinsic, natural learning that occurs outside formal educational settings (Livingstone, 2007). Informal learning is not structured or preplanned by a teacher, but it is rather attained from individually selected and voluntary, random practices. In this mode of learning, the learner is in control of the learning, which could occur intentionally or unintentionally (Marsick & Watkins, 2001). Marsick and Watkins (2001) suggest that informal learning happens anywhere and anytime in which a learner senses a need or is motivated to learn. Both formal and informal learning are interrelated and not representative of two opposite poles (Folkestad, 2006); informal learning can emphasize formal learning, and vice versa, for the purpose of promoting learning, motivation, and cognitive development - found in informal mode- are required (de Freitas, 2004; de Freitas & Levene, 2004). This can be evident in the new trend of language teachers utilizing games to support curricular objectives.

Sylvén and Sundqvist (2012) found a positive correlation between online gaming and informal L2 learning, especially through the reading of in-game texts. Despite the over-all belief that informal learning does not comprise teaching, Gee and Hayes (2010) contended that teaching is evident in the online gaming world. Teaching in MMORPGs is present in gameplay tutorials, fan web pages, fan fiction comics, and game-related discussion forums. Furthermore, players develop their critical thinking and learning skills by engaging in debates about subjects,
like moral and ethical issues, race and gender-bias concerns (Gee and Hayes, 2010). This argument foregrounds Vygotsky (1978)’s concept of the zone of proximal development which suggests that the learner develops faster with the assistance of a more skilled “other,” (a teacher, an experienced peer, or a resource) than they could possibly develop alone. From this standpoint, gamers involved in MMORPG may play the role of a teacher and provide support to inexperienced learners.

II.5. MMORPG and vocabulary acquisition

Research studies on vocabulary learning strategies targeted traditional settings and discourse venues like classroom and real-world learning situations most of which, according to Gu (2005), overlook real communication opportunities. Empirical research in this area reveals that learners’ use of vocabulary learning strategies is affected by real-world second language contexts (Kojic-Sabo & Lightbown, 1999; Leeke & Shaw, 1990; Locastro et al., 1994; Nyikos & Fan, 2007). In one study, simulation games that are less complex than 3D graphic supported games were examined for their potential of promoting target language acquisition (Franciosi, Yagi, Tomoshige, & Ye, 2016). The researchers examined classes of EFL learners at a Japanese university. A treatment group used an online vocabulary learning application (Quizlet) along with a basic simulation game (3rd World Farmer), whereas the control group used the vocabulary learning application only. Findings revealed that the treatment group outperformed the control group on a delayed post-test that was administered 11 weeks later. Another study examined the effect of a UN-sponsored videogame named Food Force (FF) on learner affect and vocabulary learning and retention in a Japanese as a second language class; FF was integrated into a current curriculum and then two studies were completed. In the first
study, new vocabulary items were included in practice sheets. The second study, on the other hand, presented the video game’s vocabulary explicitly and comprised a test with an assigned grade. In the two studies, learners took pre-, post- and delayed tests on FF-specific vocabulary and an end-of-unit affect survey. Moreover, the second study comprised textbook vocabulary tests and interviews; the findings of this research indicate a positive effect on learner affect and a preference for game-mediated activities over conventional exercises. Furthermore, the results showed that participants were able to recall new FF vocabulary after five weeks at a similar rate to recalling them immediately after the unit in both groups, however the learners forgot words from the textbook significantly (Hitosugi, Schmidt, & Hayashi, 2014).

Despite the general assumptions that spending extended amounts of time on social networks to play online games can cause decline in academic, personal and social aspects of individuals’ lives, a study that conducted a survey with 248 high school students showed that social network games have pedagogical potentials; findings of this research revealed that students can unintentionally (incidentally) acquire a significant amount of target language vocabulary items from their involvement in popular online games on social media networks (Çetin, Sözcü, & Kinay, 2012). A study conducted at Shiraz University in Iran explored the entertaining effect of e-learning for its potential of predicting high school students’ vocabulary learning by means of a video game. Initially, the study compared and assessed between those participants who actually played the video games and another group who only watched the game. Participants were randomly assigned to two treatment groups: gamers group who were directly in contact with and exposed to the vocabulary through involvement in active playing of a video game and observers (watchers) group, who merely observed two classmates play the same game. An e-learning enjoyment scale and a vocabulary post-test were administered post
treatment. The findings revealed that e-learning enjoyment predicted the variance in game-enhanced vocabulary learning significantly; no significant difference was found between the two treatment groups. Thus, it was concluded that enjoyment offered by video games could help students sustain through the continued process of language learning by securing the element of motivation (Ebrahimzadeh, & Alavi, 2016).

II.6. Incidental vocabulary acquisition

To understand incidental vocabulary acquisition, it is crucial to outline what is meant by language learning and language acquisition. Firstly, language learning is theoretically defined as follows, “not just the processing of language, but all social and interactional uses to which language is put” (Bybee, 2001). This definition concurs with the addressed construct in the current study that is directly related to indirect learning through interaction. Operationally, language learning is the way gamers of MMORPG develop their second language (L2). It is substantial to emphasize the counter-productivity of Krashen’s (1981-1985) earlier distinction between learning (conscious/explicit learning) and acquisition (unconscious/implicit learning) since learning and acquisition involve both implicit and explicit processing (Kerz et al., 2017). In this regard, incidental learning is defined as the process of learning new information without the intention of doing so; it also refers to the unintended learning of one thing while attempting to learn another (Richards & Schmidt, 2002). Regarding vocabulary acquisition, incidental vocabulary acquisition is considered an effective method of learning new vocabulary items from context (Day, Omura, & Hiramatsu, 1991; Jenkins, Stein, & Wysocki, 1984; Nagy, Herman, & Anderson, 1985; Saragi, Nation, & Meister, 1978).
A quick review of literature shows that entertaining and fun approaches of learning have been majorly limited and affiliated to the learning of children. Hromek and Roffey (2009) promote using games for teaching children by explaining that there is a ‘natural affiliation between children, play, and the desire to have fun which makes games an ideal vehicle for teaching’ (p. 626). However, the importance of fun approaches to adult learning has been scarcely questioned. A limited number of studies has identified the significance of fun and entertainment in motivating the learning for older adults. Wlodkowksi (1997) emphasized the significance of motivation in promoting adult learning. Sheldon and Elliot (1999) described fun as a classic motivation variable where fun is anticipated to encourage motivation. Davis (2001) suggested that there is a need for developing learning programs that focuses on fun for older adults. In their investigation of E-learning for the mature age worker, Bowman and Kearns (2007) found that employing unconventional approaches promotes learning by maintaining aspects of interest and fun in the learning process. Hence, this study attempts to emphasize the significance of video games – as a fun and entertaining medium of incidental learning– in encouraging second language acquisition.

To conclude, this review showed that studies investigating vocabulary acquisition in online games proposed essential inquiries on the ways MMORPGs render themselves as language teaching environments (Prensky, 2001), and suggested socio-cultural and psycholinguistic dimensions of MMOs (Peterson, 2010). They also emphasized the entertaining, learner-centered quality of online games and their merit in stimulating motivation (Gee, 2003; Gee, 2007). Moreover, vocabulary retention through online games in an instructional setting has been found to be more effective when compared to retention of vocabulary acquired through textbooks (Hitosugi, Schmidt, & Hayashi, 2014). Therefore, it is hoped that the findings of this
study will fill the gap in literature by offering insight into how online games are perceived as language learning environments in Egypt (at the heart of the Middle East), and the potential benefits of involvement in MMORPGs in non-instructional settings. It is also hoped that the study will offer new findings on young-adult age group involved in online gaming to challenge the general assumption that teenagers make up the majority of online video gaming world.

The next chapter details the design, instruments, data source and data collection tools used in this study. It also provides a description of the sampling process, the selection criteria of participants and the procedures of gathering data.
Chapter 3

Methodology

Research in video-games and learning is classified into game-enhanced, game-based, or game-informed language learning research (Reinhardt & Sykes, 2014). In investigations using game-based language learning, games were employed to position learners as gamers and deliver learning activities within an identifiable game-play mode. As for game-informed learning, it aimed at making practices of teaching more game-like by implementing the fundamentals of game play without the necessity to develop a game that offers equivalent captivating and immersive learning practices (Begg, 2008). MMORPGs were mostly explored in game-enhanced research, which focused on how these games encourage L2 learning and how they might be implemented in formal educational settings (Reinhardt & Sykes, 2012). The scope of this paper is thus limited to game-enhanced investigation. In addition, the paper aims to explore incidental vocabulary acquisition in non-instructional settings in an attempt to fill the gap in the existing literature which majorly investigates incidental vocabulary acquisition in formal educational settings (Ghanbaran & Ketabi, 2014; Bytheway, 2015; Zheng et al., 2015; Sundqvist et al., 2015; Chen & Lee, 2018).

III. 1. Design

A mixed methods design was employed in this study, in which both quantitative and qualitative data were collected and analyzed; by implementing this approach, the researcher could extend the data resources and accentuate the validity of findings (Johnson & Christensen, 2014; Onwuegbuzie & Johnson, 2006). Regarding the qualitative component of the present study, it was intended to observe and analyze the content of written and transcribed postings and
comments of gamers in online game forums or web pages. This was believed to be the ultimate means to access immediate discourse production of the MMORPG gamers. Furthermore, saved screenshots would allow the researcher to revisit the discourse content for deeper analysis. The merit of this data collection tool was that it ensured that the researcher would not be involved or playing any role in the sampling source and would be merely an observer of this discourse. As for the quantitative aspect in the present study, an online questionnaire was created to collect data about the gamers’ perceptions of their game experience in the development of their second language. The questionnaire contained items that address the main variables of the research questions; some items targeted gamer’s perception of their L2 development, and other items focused on their view of their learning strategies in the game context. Furthermore, interviews extended the data with additional input from some gamers.

III.2. Data source and instruments:

III. 2. 1. The game (PUBG)

Player Unknown's Battlegrounds (PUBG) is a 2017 online multiplayer online game created by Bluehole’s subsidiary, PUBG Corporation. Typical of MMOs, gamers join the game, create avatars and join online matches. In each round, gamers are allowed to participate alone or as a team. When the match begins, one hundred players parachute onto an island and scavenge for weapons and equipment to kill other gamers while avoiding getting killed themselves and protecting their teammates. The game has a safe area (visible on game’s map) which is reduced in size by the progress of time, relocating surviving players into smaller areas to force encounters and end the match with the winning of the last standing player or team. The game is accessible

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1 A leading South Korean video game company
2 [https://www.pubg.com/](https://www.pubg.com/)
and compatible with different consoles and platforms like Windows, Play Station 4, The Xbox, Android and iOS. PUBG is one of the best-selling of all time (sold over fifty million copies by June 2018) and it is currently on top of the chart of the most-played video games worldwide, with over 400 million players in 2018. PUBG Mobile is ranked 8th on Google Play Store in the top 50 most downloadable mobile applications in Egypt. This encouraged the selection of PUBG as the source of data for the current study. Moreover, the game’s default language is English (although other languages are enabled in chats). Furthermore, the game runs on international servers the merit of which held two folds: firstly, English was the de facto means of communication amongst players. Given the game design, communication was key to winnings and in-game achievements, which resonated the concept of ‘willingness to communicate’ that has been found to be of significance in second language development (MacIntyre, Dörnyei, Clément, & Noels, 1998). Secondly, encounters with native English speakers were guaranteed in this game which has servers in North America and Europe. This placed participants in a rich linguistic environment in which exposure to English as L2 was expanded (Kennedy, 1973) providing valuable input for gamers as second language recipients.

III.2.2. Appendix (Questionnaire)

The main instrument for data collection was an online questionnaire (Appendix). The questionnaire was created on an online platform (Google Forms) to enable generating a shareable link that can thus be shared on various social media networks like Facebook, online game forums, or via email. As for the design, this questionnaire was adapted from The Thematic household survey report No. 43 on Information Technology Usage and Penetration of Hong Kong Government, in Hong Kong, China for the year 2009 (Chen, 2014). The questionnaire
(Appendix) had 21 items where 17 items were MCQ, 2 items were to state true or false and 1 item had an open-ended question.

III.2.3. Observations

During the data collection period, the researcher visited game discussion forums daily for a period of three hours per day for two or three weeks. As for discussion forums, it was considerably an easy task since all posts are automatically saved and archived on the forum; this offered an opportunity for observing extended exchanges of information between post creators and commentators.

III.2.4. Corpus for gamers’ online discussions

To facilitate data analysis (Hasko, 2012), it was intended to develop a corpus by using data collected from gamers’ postings in online discussion forums (such as Facebook pages). This was achieved by copying posts and comments between gamers and saving them in plain text format. Then, corpus analysis programs – such as MonoConc freely accessible and available in the CALL labs or AntConc, a freely downloadable concordancing program on my personal laptop - were used to load the plain text files and searches for frequencies of some discourse markers that could provide insight into salient usage of discourse features relevant to my research were conducted.

III.2. Participants

The sample for the present study was conveniently selected from the general public. Participants’ selection criteria were to be Egyptian, to use English as their L2, and their age range should be between 20 and 40, since the study is targeting young adult gamers. This could
be achieved by contacting local friends who were MMORPG gamers and whose age and nationality were known. The sampling process conformed to snowballing; the researcher first approached acquaintances who fit the criteria, and then they were asked to invite their circle of connections who match the selection criteria of the research. Overall, participants were preferably active video gamers, with preference for MMOs. Since the selected participants must be Egyptians only, their native language was by default Arabic. As for their initial level of vocabulary competence, it was holistically measured by observing the frequency, variety and accuracy of vocabulary items, and instances of code-switching. Moreover, items 6, 9 and 13 in the questionnaire were expected to provide more insight into the gamers’ usage and understanding of English vocabulary.

III.2.1. Sample
Discourse segments would be additionally selected for analysis; the selection criteria would target segments produced by both expert and novice gamers; only segments containing English vocabulary items used in the game would be selected. Data collection would be ongoing until saturation is ensured. The amount of English vocabulary incorporated into the discussion could be then used to measure acquisition.

III.3. Procedures
After customizing the questionnaire adapted from The Thematic household survey report No. 43 on Information Technology Usage and Penetration of Hong Kong Government, in Hong Kong, China for the year 2009 (Chen, 2014) to address my target online game PUBG, the questionnaire was converted to a Google Form document to enable online distribution and ease of data collection and statistical reporting. The questionnaire was distributed online via email and Facebook links. After accessing the game-related Facebook pages, some posts were selected for
sampling. Post titles could reveal information about gamers - from various levels – as well as the topics discussed. Posts with titles that reflected a potential for containing clarification request, elaborations, or pictures (dual coding) were then selected.

The corpus compiled for the purposes of the presented study was collected from multiple Facebook pages related to PUBG and thematically categorized. This data comprised posts made by members of these pages and also comments made by other members. The written texts were selected and copied and then saved to a plain text file using Unicode formatting to enable reading the Arabic text in plain text document. These discourse segments were mainly selected for potentially containing vocabulary learning strategies and discourse strategies that are the variables targeted in my corpus search. For instances, some posts were about explaining how to join the game PUBG, other posts elaborated on the different types of weapons used in the game, and others had some frequently asked questions and their answers. Additionally, the transcript of a video of a member in which he talked about pronunciation mistakes made by Egyptian gamers was saved in plain text to be used in corpus compilation. AntConc 3.5.7 (Windows version) was used to conduct the corpus search. The corpus encompassed a total of 5,267 words and it included posts created by members, comments on posts, and a video transcript.

It was expected that participants’ responses to items 8, 10, 11, 12, 13 and 14 in the questionnaire could provide some data the analysis of which could possibly give insight into the perceptions of young adult gamers regarding their vocabulary acquisition in PUBG. In addition, informal or semi-structured interviewing of some of the participants could further clarify these perceptions where the participants would be actively involved in meaning making and would not act merely as a channel from which information is retrieved (DiCicco-Bloom & Crabtree, 2006). Moreover, instances of dual coding, elaborations and spaced practice were anticipated to
be found in game discussion forums. Although items 5 and 9 in the questionnaire might render relevant data, the data required to answer the second research question would be mainly retrieved from observations and analysis of the game’s discussion forum. Furthermore, to answer the last research question, discourse strategies exemplified in questions, requests for clarification, and error-corrections could be traced by observing and analyzing postings on discussion and forum. Hopefully, the frequency of such discourse functions could be measured by conducting searches on the game corpus that would be later developed. Corpus-based investigations confirm the significance of frequency of linguistic units and discourse strategies in second language acquisition (Ellis & Collins, 2009).

As for the questionnaire data, it was automatically analyzed on Google Form where this online tool allowed numerical calculation of participants’ responses and generated statistical graphs for each survey item. The observation required frequently visiting online discussion forums. Then, screen shots (Appendix) were saved in jpeg format and each screenshot was renamed and given a title that clearly designated its content and its relation to specific constructs. For instances, one set of screenshots were named “dual coding” where they contained posts in which discussion page members contributed with a post that exemplified dual coding.

Regarding the corpus data, discourse segments which included: postings made by discussion page members, comments on these postings, transcript of a video uploaded in one discussion were selected and saved in plain text files. Each file contained a single, original post created by one of the page members along with the comments made on the mentioned post. Then, the file was renamed in a similar fashion to the screenshots where each file carried the name of the included post topic. For example, some plain text files were renamed as “illustrations’ or “Q&A” or “weapons”. This facilitated retrieval of source files when the corpus searches were later on
conducted. Lastly, interviews were audio-recorded and transcribed. Each audio file was renamed with the date and initials of interviewee. The transcripts were also saved in word documents and renamed similar to their audio counterparts. The next chapter presents the results of the online questionnaire followed by findings of the observations and corpus searches. The last part comprises the interview results.
Chapter 4

Results

This chapter presents the analysis of the data collected in this study. The three research questions on which this investigation is based would guide the structure of this chapter. For each question, an answer would be provided by presenting analysis of the data collected. For the first question, data collected from the questionnaire and the interview would provide insight into its answer since it investigates perceptions of gamers regarding language acquisition in PUBG. The personalized nature of the questionnaire items and interview questions would secure relevant responses from the participants. The second and third questions would mostly rely on data collected from observations and corpus-based searches to provide evidence of their inquiries. Observations and corpus-based searchers would confirm the presence (or absence) of vocabulary learning strategies and relevant discourse functions that could be employed by gamers involved in online discussions on PUBG Facebook pages.

Three types of data were collected. Firstly, the online survey rendered young adult gamers responses about their perceptions of vocabulary acquisition while engaging in the popular online role-playing game PUBG. Secondly, gamers’ written posts and comments on game-related Facebook discussion pages were extensively observed for evidence of vocabulary learning strategies and discourse functions anticipated to be found in gamers’ game-related online interactions. The corpus analysis facilitated the location, identification and measurement of the frequency of these discourse functions. A video of significant relevance posted on a Facebook page about PUBG has been saved and transcribed for the same purposes. Thirdly, semi-structured interviews were conducted with a sample of gamers to learn more about gamers’
perceptions of their vocabulary acquisition in specific and L2 development in general and game-related interactions.

I. Gamer perceptions of vocabulary acquisition in PUBG

Table 1

<table>
<thead>
<tr>
<th>Questionnaire results</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age range</strong></td>
<td></td>
</tr>
<tr>
<td>20-25</td>
<td>63</td>
</tr>
<tr>
<td>25-30</td>
<td>27.8</td>
</tr>
<tr>
<td>30-35</td>
<td>5.6</td>
</tr>
<tr>
<td>35 or more</td>
<td>3.7</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>92.6</td>
</tr>
<tr>
<td>Female</td>
<td>7.4</td>
</tr>
<tr>
<td><strong>Favorite MMORPG</strong></td>
<td></td>
</tr>
<tr>
<td>PUBG</td>
<td>100</td>
</tr>
<tr>
<td>Fortnite</td>
<td>24.1</td>
</tr>
<tr>
<td>World of Warcraft</td>
<td>11.1</td>
</tr>
<tr>
<td>League of Legends</td>
<td>31.5</td>
</tr>
<tr>
<td><strong>How long you been playing PUBG or a similar game</strong></td>
<td></td>
</tr>
<tr>
<td>Less than a year</td>
<td>59.3</td>
</tr>
<tr>
<td>1-2 years</td>
<td>16.7</td>
</tr>
<tr>
<td>5 years or more</td>
<td>24.1</td>
</tr>
<tr>
<td><strong>Hours spent on PUBG per week</strong></td>
<td></td>
</tr>
<tr>
<td>10 hours or less</td>
<td>50</td>
</tr>
<tr>
<td>10 to 20 hours</td>
<td>38.9</td>
</tr>
<tr>
<td>30 to 40 hours</td>
<td>11.1</td>
</tr>
<tr>
<td><strong>English Language Level</strong></td>
<td></td>
</tr>
<tr>
<td>Beginner</td>
<td>7.4</td>
</tr>
<tr>
<td>Intermediate</td>
<td>57.4</td>
</tr>
<tr>
<td>Advanced</td>
<td>35.2</td>
</tr>
<tr>
<td><strong>I think playing PUBG has improved my English</strong></td>
<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>11.1</td>
</tr>
<tr>
<td>Agree</td>
<td>38.9</td>
</tr>
<tr>
<td>Disagree</td>
<td>44.4</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>5.6</td>
</tr>
<tr>
<td><strong>Skills you think PUBG has improved</strong></td>
<td></td>
</tr>
<tr>
<td>Listening</td>
<td>71.4</td>
</tr>
<tr>
<td>Speaking</td>
<td>59.2</td>
</tr>
<tr>
<td>Reading</td>
<td>22.4</td>
</tr>
<tr>
<td>Writing</td>
<td>4.1</td>
</tr>
<tr>
<td><strong>There are some words in English I didn’t know before playing PUBG</strong></td>
<td></td>
</tr>
</tbody>
</table>

31
<table>
<thead>
<tr>
<th>There are some English expressions I came to know from other gamers who are native English speakers</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>True</td>
<td>61.1</td>
</tr>
<tr>
<td>False</td>
<td>38.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>You use many of the words you learned inside PUBG in your real-life</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>True</td>
<td>64.8</td>
</tr>
<tr>
<td>False</td>
<td>35.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How often do you visit external websites (Facebook pages) and discussion forums</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very often</td>
<td>16.7</td>
</tr>
<tr>
<td>Sometimes</td>
<td>51.9</td>
</tr>
<tr>
<td>Rarely</td>
<td>22.2</td>
</tr>
<tr>
<td>Never</td>
<td>9.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Preferred game mode</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>solo</td>
<td>18.5</td>
</tr>
<tr>
<td>team</td>
<td>81.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Does playing PUBG make you think about learning other languages than English?</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>35.2</td>
</tr>
<tr>
<td>No, but I want to improve my English</td>
<td>33.3</td>
</tr>
<tr>
<td>No</td>
<td>31.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How would you feel if your teacher/professor asked you to play PUBG or a similar game as part of a course</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>I would be very happy and interested</td>
<td>55.6</td>
</tr>
<tr>
<td>It would be okay</td>
<td>25.9</td>
</tr>
<tr>
<td>I am not sure</td>
<td>11.1</td>
</tr>
<tr>
<td>I would be disinterested</td>
<td>0</td>
</tr>
<tr>
<td>I don’t think this can be helpful for me</td>
<td>7.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How do you feel about using English in PUBG?</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relaxed</td>
<td>44.4</td>
</tr>
<tr>
<td>Confident</td>
<td>31.5</td>
</tr>
<tr>
<td>Challenged</td>
<td>24.1</td>
</tr>
</tbody>
</table>

### 1.1. Questionnaire results

A total of 53 participants responded to the survey (Appendix). The highest percentage of participants fell in the 20 to 25 age group who represented 62.3% of respondents, while 28.3% of participants ages were between 25 and 30, 5.7% aged 30 to 35 and only 3.8% aged 35 or...
more. The majority of participants were males (94.3%) and only 3.8% were females (only 3 respondents). It has been anticipated that the number of male gamers would surpass that of females for several reasons such as males’ preference for action-based games and the first person shooter genre of MMOs unlike the majority of female gamers who prefer MMOs that simulate social activities - such as Second Life or The Sims - as has been reported earlier by Sundqvist and Sylvén (2012, 2014).

1.1. Participants preference

When participants were asked to select their most favorite MMORPG, all participants selected PUBG as one of their favorite online role-playing games, and 32.1% of participants listed League of Legends as another favorite MMORPG, whereas Fortnite had only 22.6% of respondents choose it. This supports the participants’ preference for MMORPGs that have an online interactive mode, unlike Fortnite that can be played offline. Surprisingly, World of Warcraft had only 11.3% of participants listing it as one of their favorite MMORPG (only 6 respondents) despite reaching around 5 million players worldwide in 2019 (Statista, 2019). This can be due to many factors. For one, WoW is only available for computers and laptops and cannot be played on mobile phones. PUBG - on the other hand - gained its huge fame because of its availability on mobile phones as well as other devices.

1.2. How long participants have been playing MMOs

Regarding the time they had been playing PUBG or a similar online game, 58.5% of respondents said they have been playing PUBG or a similar game for less than a year, while 24.5% indicated having been engaged in these games for 5 years or more, and 17% of participants stated playing these games for 1 to 2 years. This provides insight into the
MMORPG gamer’s dedication as they continue to play the same game for an extended period of time. For the number of hours spent per week playing PUBG, 49.1% of respondents stated playing for 10 hours or less, while 39.6% said they played for 10 to 20 hours per week, and only 11% of participants indicated playing PUBG for 30 to 40 hours per week.

When participants were asked about their English language level, 56.6% of them said they were at an intermediate level, whereas 35.8% stated being at an advanced level, and only 7.5% (4 participants) indicated being at a beginner’s level of English. However, participants had more in common when they were asked about using English in non-instructional settings; 64.2% of participants stated that they use English in social media platforms like Facebook, Twitter, Instagram...etc., while 34% of respondents said they use English in video games, and only 1 participant indicated using English in family gatherings (Figure 2).

Figure 2
A little more than half of participants (54.7%) believed that it is possible to level up (advance from one level in the game to the next) in PUBG without using English, while 18.9% agreed that it is not possible to go through PUBG level without using English, 15.1% of participants strongly disagreed that English was necessary to make progress in the game, and 11.3% of respondents strongly agreed that it was not possible to go through PUBG without English.

When participants were asked about understanding the game instructions, 67.9% of them said that they understand all given instructions, whereas 28.3% of respondents stated that sometimes they need to look up unfamiliar words, and only 3.8% said that at first, they don’t understand everything in the game instructions, but that they later on do. None of the participants indicated that they ask other gamers about things that they do not understand. As for the questionnaire item stating, ‘I think that playing PUBG has improved my English’, 45.3% of participants disagreed with this statement, and 5.7% strongly disagreed. On the other hand, it was significant to find that around 48% of participants generally agreed that playing PUBG has improved their English language where 37.7% of respondents agreed with this statement, and 11.3% of them strongly agreed with it (Figure 3).
To provide more insight into which aspect of language are expected to develop through playing MMORPG, participants were asked to select the language skill that they believed has improved in their English language because of their involvement in PUBG, and they were given the option to choose more than one skill. Surprisingly, listening recorded the highest percentage of respondents choosing it as the skill they believe has improved (70.8%) the most, followed by speaking (60.4%), whereas reading reached 20.8% of participants choosing it as an improved skill because of game involvement, and writing had the least percentage of participants (4.2%) choosing it as a language skill that has improved by playing PUBG (Figure 4).

12. If you agree with question 11, please select the skills you think playing PUBG has improved in your English lan...ou can select more than one choice).

<table>
<thead>
<tr>
<th>Skill</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speaking</td>
<td>29 (59.2%)</td>
</tr>
<tr>
<td>Listening</td>
<td>35 (71.4%)</td>
</tr>
<tr>
<td>Reading</td>
<td>11 (22.4%)</td>
</tr>
<tr>
<td>Writing</td>
<td>2 (4.1%)</td>
</tr>
</tbody>
</table>

Figure 4
A total of 60.4% of respondents stated that there are some words in English that they did not know their meaning before they started playing PUBG, while 39.6% of participants disagreed with this statement. More interestingly, 66% of participants said that they learned some expressions in English from interacting with other native English speakers (Americans, English, Australians, Canadians) who play the game with them, while 34% of respondents stated they have not had such an experience.

When participants were asked if they used many of the words that they have learned through playing PUBG in their day-to-day lives, 69.8% of respondents confirmed that they sometimes use words from PUBG. Only 7.5% said that they always use words they learned in PUBG. On the other hand, 22.6% of the participants stated that they never used the words that they have learned in PUBG in their real-life interactions (Figure 5). As for the frequency of visiting external websites (like Facebook pages) or discussion forums, 90.6% of participants confirmed visiting external websites; where 52.8 stated that they sometimes visit these websites, while 17% said they visit these pages very often, and 20.8% confirmed that they rarely visit such pages. Only 9.4% of respondents negated visiting any external pages whatsoever.
The majority of participants (81.1%) preferred team playing mode over solo mode, while only 18.9% said they preferred to play in single mode. This is an interesting finding since predictions about teamwork and collaboration among gamers can be made. It also supports the merit of MMORPG in promoting effective collaborative environments for learning (Voulgari & Komis, 2011).

When participants were asked if playing PUBG made them consider learning other languages, 35.8% of them acknowledged that playing PUBG made them think about learning languages, while 32.1% stated that playing PUBG did not make them consider learning other languages, however it made them want to improve their English language. Related to this questionnaire item, participants were asked to provide written input of the languages that they would like to learn or consider learning because they have played PUBG, 35.8% of participants responded to this question where 15.8% selected English as their desired language to learn, 10.5% wrote Japanese, Spanish, and Chinese as their target language to learn, and French, German, Italian and Turkish had smaller percentages (5.3% each). This can be rendered to
gamers’ desire to become more successful in their social interactions in the game. As for

20. How would you feel if your teacher/professor asked you to play PUBG or a similar game as part of a course assignment?

<table>
<thead>
<tr>
<th>Response</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>I would be very happy and interested</td>
<td>25.9%</td>
</tr>
<tr>
<td>It would be okay</td>
<td>11.1%</td>
</tr>
<tr>
<td>I am not sure</td>
<td>7.4%</td>
</tr>
<tr>
<td>I would be disinterested</td>
<td>55.6%</td>
</tr>
<tr>
<td>I don’t think this can be helpful for my course grade or education</td>
<td></td>
</tr>
</tbody>
</table>

Figure 6

participants’ perceptions about using PUBG in an instructional setting, 56.6% of respondents said that they would be very pleased and interested if their teacher or professor asked them to play PUBG or a similar game as part of a course assignment, while 26.4% of participants believed that it would be okay to use PUBG in a course assignment, 9.4% said they were not sure about how they felt in such scenario, and 7.5% stated that they do not think using PUBG can be helpful for their course grade or education (Figure 6).

The last item on the questionnaire asked participants about how they felt regarding using English in the game PUBG, 45.3% of respondents indicated that they felt relaxed about using English in the game, 32.1% said they felt confident about using English in PUBG, and 22.6%
stated that they felt challenged using English in PUBG (Figure 7).

![Figure 7](image)

II. Strategies for incidental vocabulary learning

II. 1. Observations analyses(Appendix)

II. 1. 1. Pictures as vocabulary illustrations

Practices of dual coding and elaborations were the targeted learning strategies in both observations and corpus research. As for dual coding, it was noted that there was abundance of its usage on Facebook pages like PUBG Egypt, and PUBG Mobile Egyptian Community. In every post observed on these pages, there was a picture attached that denoted the discussion topic whether it was about a game update, a weapon used inside the game, or some outfits used by the gamers (Figure 8).
As shown in figure (8), some gamers voluntarily created pictures to further explain the meaning of game-related vocabulary. They used screenshots from the game itself and added the written text designating the item that the picture represented. Gamers at novice levels could therefore acquire knowledge about some types of characters present in the game. For instances, they could understand what a sniper did inside the game by observing the type of gun with sniper view in the picture. They could also understand that a hacker was someone who used shady methods to make progress in the game by observing the picture of someone hiding his identity by wearing a ski-mask. Thus, gamers utilized this strategy which enhanced their learning. Without returning to their L1, learners were enabled to create visual representations of the new words and concepts (Paivio, 1990).

II. 1. 2. Elaborations

Another learning strategy that has been found in abundance is the use of elaborations. Game-related Facebook pages have provided convenient platforms for gamers to employ this
learning strategy as part of their contribution to their fan page membership. Follow is an excerpt from a member’s elaboration on significant vocabulary items in the game PUBG:

- **Safe zone:** (Safe zone: It’s an area that doesn’t have the blue radiation. This means it is safe; it won’t harm you)

- **Air drop:** (Air drop: is a help box that drops from a plane and usually the game turns into a massacre then because all people fight over this drop)

By observing the frequency of words predicting elaboration such as شرح, طريقة, نتكلم, the corpus search has rendered 12 hits شرح (to explain) 7 hits طريقة (method/how to), and 4 hits نتكلم (let’s talk about). Following is an excerpt retrieved from one of the source files compiled for the corpus database that shows how advanced gamers resort to elaboration as a means to describe the meaning of specific vocabulary items. The corpus search term that has been used here was نتكلم - the Egyptian colloquial Arabic expression commonly collocating with خلينا which means ‘let’s talk about’:

- **Safe zone:** (Safe zone: It’s an area that doesn’t have the blue radiation. This means it is safe; it won’t harm you)

- **Air drop:** (Air drop: is a help box that drops from a plane and usually the game turns into a massacre then because all people fight over this drop)
This instance shows how elaboration is a salient feature in game discussion forums as well as being a strategy that encourages language users to describe ideas in detail and not just memorize or remember them in line with the merit of elaboration as a learning strategy (Weinstein, 1982).

III. Discourse strategies in online interaction

III.1. Corpus search findings:

III.1.1. Questions and requests for clarification

Corpus search mainly targeted instances of discourse strategies of interaction such as questions, requests for clarification, and error-corrections as instances of interaction between gamers in these discussion platforms. The word "ايه" was used to search the corpus for possible questions or requests for clarification since this question word is the Egyptian Arabic dialect equivalent for the question word “what”. The search rendered 25 hits; most collocations found using this word were the words "الفرق" (the difference) and "الفائدة" (the merit or benefit of) where gamers mostly asked about the difference between weapons, and play-mode and the benefit of possessing certain weapons or reaching a certain rating in the game (gold, platinum, bronze). Following is a sample of one gamer’s post on a Facebook page elaborating the meaning of in-game words:

<table>
<thead>
<tr>
<th>Auto</th>
<th>Single</th>
<th>Burst</th>
</tr>
</thead>
<tbody>
<tr>
<td>تاني حاجة أن في بعض الأسلحة يكون فيها اختيار انك تستخدما سواء</td>
<td>بتفضل تضرب من غير ما يوقف ضرب ال</td>
<td>ال</td>
</tr>
<tr>
<td></td>
<td>Auto</td>
<td>Single</td>
</tr>
<tr>
<td>بيضرب طلقة طلقة ال</td>
<td></td>
<td>ال</td>
</tr>
<tr>
<td>بيضرب 3 طلقات 3 طلقات ال</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 10
III. 1. 2. Error correction

As for error-correction, the following is a sample extracted from the transcript of a video posted by a gamer on a Facebook page:

\[
\begin{align*}
\text{Zone - Zone} & \quad \text{Zone - Zone} \\
\text{Soup - Soup} & \quad \text{soup} \\
\text{Scope - Scope} & \quad \text{سکووب و لا} \\
\end{align*}
\]

Error correction is utilized by an advanced learner who decided to provide collective feedback on the Facebook discussion page based on the errors he has noticed while interacting with other gamers. Such a focus-on-form technique has been found to be very useful for enhancing language (Doughty & Williams, 1998). Repetition is another discourse function featured in this video transcript. The function of repetition here was to allow the speakers’ to demonstrate the correct pronunciation of the mentioned words that are often mispronounced by Egyptian gamers.

III.1. 3. Interviews

Findings from the interviews conducted with a number of the participants who also took part in the online questionnaire provide more insight into the different learning strategies employed by the gamers, their perceptions of their language usage in the game PUBG and are in line with that of the questionnaire, observations and corpus analyses. When the interviewees were asked
about the length of the period during which they have been involved in the game PUBG, their timelines averaged between 6 months as a minimum and 1 year as a maximum. Moreover, the majority of interviewees confirmed that they have encountered non-Arabic speakers in the game matches. The nationalities of these non-Arab gamers included American, British, Indian, Pakistani, German, Italian, Russian and Japanese gamers.

Interestingly, interviewee no.2 clarified that she had not encountered any non-Arab speakers in the game because of using the auto-match option. She further elaborated that this option enables you to match with other gamers based on your language preference. So, if - for instances- one selected Arabic as their preferred language, then the game system will automatically match them only with other gamers who have selected Arabic as their preferred language. Once more, exposure to L2 is highly possible in these matches were gamers will either be exposed to L2 by other non-Arabic speaking gamers, or they are situated in a game-circumstance that would oblige them to use L2 in order to communicate. The presence of the auto-matching option is a possible implication that will be further discussed in chapter 5.

When the interviewees were asked about the servers which they chose to access the game, they all confirmed choosing the Europe server as the best or most favorite server, followed by North America. Their reasons varied however; for interviewee no.1, he stated that he used the Europe server because it was the first server to play on by default. As for interviewee no.2 and no.3, they explained that they did not actively select the Europe server, but that they joined it since all their friends were already on that server. On the other hand, interviewee no.4 had an interesting justification for preferring to play on the Europe server. He emphasized that he actively selected to play on either the Europe or the North America servers because of the potential of making new friends, finding other gamers who speak English, and because he was
disturbed by acts of verbal harassment that were usually done by other native speakers of Arabic.

Below is an extract from the interview transcript:

Researcher: Which servers in the game you prefer to play on (North America, Europe, Africa...etc.)?

Interviewee 4: Europe, and North America.

Researcher: Why?

Interviewee 4: Well, it’s kind of funny, but I don’t like playing with my friends, local friends a lot. I somehow got to know people through PUBG, because it is a chance to know people; and it is a fun game as well. So, I get to know people through a game; it’s kind of a fun experience. And through Europe and North America you get to know people who speak English as well, so it’s a plus. I don’t like the other servers because Asia and South America, they are mostly Spanish or Arabic, so they troll too much, and I don’t like trolling in Arabic. As well, I don’t understand Spanish. So, yeah.

The last interview questions aimed to assess the participants’ acquisition of specific vocabulary items that are quite abundant in the game. The interviewees were asked to define or explain the meaning of a list of 13 words that the researcher posed. Following is a table showing in bold the Cambridge online dictionary definition of only a small sample (2 items) of these vocabulary items and the definitions provided by the participants.

Table 2

<table>
<thead>
<tr>
<th>Voc. items</th>
<th>Loot</th>
<th>clan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dictionary</td>
<td>➔(of large numbers of people during a violent event) to steal from shops and houses:</td>
<td>➔a group of families, especially in Scotland, who originally came from the same family and have the same name</td>
</tr>
<tr>
<td>Interviewee</td>
<td>to steal something from a place or person</td>
<td>a large family, or a group of people who share the same interest:</td>
</tr>
<tr>
<td>-------------</td>
<td>------------------------------------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>Interviewee 1</td>
<td>the weapons, the boxes, the remains left behind someone who was killed</td>
<td>A very large group has like 50 or 60 members and there are missions for all the crew.</td>
</tr>
<tr>
<td>Interviewee 2</td>
<td>Is it even a word? It is a word we use but I don’t think it is right. I think they say it wrong, like they want to say “load”. I don’t know, but in the game, it means supplies.</td>
<td>it is our group. It is a group of people, 50; they participate in one clan, and then we have certain missions that we have to do.</td>
</tr>
<tr>
<td>Interviewee 3</td>
<td>when you open a house or something like that, you find some items on the ground, that’s called loot. We use these items in the battle itself, so.</td>
<td>it’s a form of team, but not usually playing together, it’s like big team with a lot of members, and you use like some missions, while you are playing, and you support your clan to get ranked or something like that.</td>
</tr>
<tr>
<td>Interviewee 4</td>
<td>it’s when somebody dies, and you get to loot his inventory. Or, when there is like an empty house, and it has a lot of stuff and you get to loot this stuff. It’s mainly getting inventory, getting valuable stuff from the inventory of somebody else.</td>
<td>it’s like a group, a group of players in PUBG, and they have this role, I guess. Just to achieve more missions and missions so they can get points and rewards.</td>
</tr>
</tbody>
</table>

The table shows how interviewees displayed knowledge and deeper understanding of the vocabulary items which they often encounter inside the game. By observing their interpretations of these words and comparing them to the definition offered by the dictionary, it becomes clear that these interpretations are based on their active participation in the game missions and membership requirements. Most of the interviewees used descriptive language to define these vocabulary items; for example, they resorted to vivid exemplary statements like, “when you open a house”, or “when somebody dies”, which reflects their reliance on the in-game experience to provide explanation and interpretation. It is also safe to assume that this mode of interpretation reflects to a great extent how they came to acquire and understand the meanings of these words.
that is, through game play. Although one interviewee showed confusion between the newly acquired word “loot” and another word that she already knew “load”, she was able – nevertheless- to provide a holistic understanding of the word “loot” in its noun form as “supplies”. In other words, gamers are – incidentally- employing learning strategies to help them better understand the game environment and better communicate with other gamers.

In conclusion, the findings and analysis of data collected through the questionnaire, observation, corpus, and interviews could provide answers to the research questions to some extent. A significant number of participants had positive perceptions about their L2 development by means of an online game. Observations foregrounded the importance of online discussion platforms in providing venues for interaction amongst gamers outside the game which encouraged them to employ various learning strategies like dual coding and elaborations. Preliminary corpus searches also showed the significance of these discussion forums in allowing gamers to utilize questioning, clarification requests and error corrections which prompted interaction and promoted incidental learning. Analyzing interviews further illustrated how young-adult video-gamers in Egypt perceived their linguistic interactions and assisted in gaining insight into their methods of acquisition and the level of accuracy of their in-game acquired vocabulary items.

The next chapter discusses the analysis of this research findings and provides interpretations of the most significant results. The chapter also offers some implications of this study, the limitations this research has faced, and suggest recommendations for future studies in the area of online games and education.
This study attempted to answer the research questions inquiring about the perceptions of young adult gamers of their vocabulary acquisition in MMORPG. It also aimed to find evidence of learning and discourse strategies within these gamers’ online interactions in an attempt to identify creative methods to approach language acquisition in non-instructional settings. The study mainly targeted incidental mode of vocabulary acquisition given the nature of online video-games where individuals are essentially gamers pursuing entertainment without intending to learn new vocabulary items in the process of gaming. Although Egyptian gamers were in essence convenient candidates for the feasibility of this research, they were representative to a certain extent of many other gamers in the Arab world given the predominance of Egyptian dialect among Arabs, and the viral spreading of Egyptian-oriented postings, picture illustrations and humorous anecdotes specifically with regards to the game PUBG.

I. Gamer’s perceptions of vocabulary acquisition in PUBG

The responses of the gamers participating in this study showed an overarching consensus on the merit of MMORPG in linguistic acquisition. According to their responses to the online survey, a substantial number of them seemed to agree that involvement in the popular game PUBG has helped them in learning new English vocabulary and had a positive impact on their English language skills - listening and speaking in particular. Moreover, many of these participants had a positive perception of their L2 usage in the game. This particular finding parallels the findings of Reinders and Wattana (2014) who found a statistical decreased sense of
anxiety and increased confidence in using English in an online game activity played in an instructional setting (classroom). Relevant to this, the small percentage of participants sceptic about utilizing games in formal education (7.4%) can possibly encourage educators and researchers to venture into including this advanced genre of gameplay in curricular activities.

In addition, considering the number of hours that gamers spend per week playing PUBG ranging from 10 hours to 30 hours or more, as a teacher and a researcher, one can only ponder about the potentials of having language learners who -willingly- spend these valuable hours being exposed to and using a target language without intending to do so.

The variance in the participants’ perceived proficiency in English (56.6% intermediate, 35.8% advanced, and 7.5% beginner) can be attributed to many circumstantial factors. Most participants have been exposed to English as students at their school or college, and some of them could be using it at work or in their business settings only in a limited, formal context such as writing emails, supporting a foreign customer, or in an informal context like watching American movies or listening to English songs, which is a common trend now among adults and young adults in our Egyptian society.

II. Learning and discourse strategies in PUBG interactions

Another point worth mentioning is that the majority of the participants confirmed visiting discussion forums like game-related Facebook pages. This finding suggests myriads of opportunities for gamers to utilize their newly acquired vocabulary. Although these discussions were mostly held in their L1 (Arabic), gamers integrated these L2 vocabulary items in their discourse and showed true understanding of their meanings through elaborations and picture-illustrations. Moreover, more than half of the gamers (68.6%) confirmed resorting to more
informative sources online (that are mostly written in L2) suggesting an increased exposure to L2 and bridging the gap in literature where studies of language learning through interaction in MMORPG (in classroom setting) overlooked real communication opportunities (Gu, 2005). The significance of such involvement in game-related online interaction is that it foregrounds game-related discussions as a crucial feature of game involvement because in these online platforms, participants either make inquiries, engage in debates or discussions which bring into existence external game resources or what is also known as paratexts (Chen, 2014). The abundance of these paratexts is an added bonus for language learning since this could possibly predict gamers’ exposure to L2 even beyond game time. For instances, novice gamers would play the learner’s role through their inquiries and seeking guidance while more experienced gamers would act as mentors or teachers provide information, explanations and details, and even error-correction as discussed in the corpus data analysis.

The analysis of the compiled corpus and interview data revealed that dual coding and elaboration (as illustrated in Figure 8 and Figure 9 in the previous chapter) are the most commonly found learning strategies in gamers’ online interactions through posting and commenting on game-related discussion forums. Whereas questioning and error-correction are existing discourse strategies that are employed by gamers in these online interactions. This finding is an added bonus to the value of MMORPG in offering teachers and learners a venue where utilizing learning strategies and discourse functions is authentic.
III. Implications of the findings of the present study

This study also offers insight into the perceptions of adult gamers of MMOs about their linguistic behaviors, an age group that has not been explored before. Given that children and teenagers are mostly the members of video-gaming world, adult and young adult gamers are often ignored in literature about MMOs where studies mostly targeted high school students (Çetin, Sözcü, & Kınay, 2012) or university students (Ebrahimzadeh, & Alavi, 2016; Hitosugi, Schmidt, & Hayashi, 2014; Thomas and Reinders, 2011) although they now represent a notable portion of gamers of these games worldwide. Another implication that this study offers is that it targets Egyptian gamers involved in MMORPGs. It was surprising when reviewing the literature to find that there were no studies conducted in the Middle East in general and in the Arab world in specific considering the huge numbers of gamers and the richness of linguistic behaviors in this region.

With an elevated percentage of participants (77.4%) acknowledging that they felt relaxed and confident about using English in PUBG, the significance of employing games in L2 development is asserted given how MMORPG offer adult individuals a relaxed, friendly environment where they are not apprehended by making linguistic errors nor are they face-threatened by possible negative feedback from a teacher, a finding that successfully resounds the affective filter hypothesis (Krashen, 1982). The findings of this study also underline the significance of online interaction in the use of L2, and this further emphasizes the potentials of trending technologies in providing tools for exposure to L2 or what I would call ‘virtual immersion,’ inspired by the new methods that the researchers at Rensselaer Polytechnic Institute and IBM are currently innovating to teach Mandarin by means of immersive scenes,
and artificial intelligence that resembles the realms already established in MMORPG(“Virtual Immersion: Using AI to teach Mandarin”, 2018).

As mentioned in the previous chapter, the analysis of some interview data revealed another crucial feature of the online game -which is the auto-matching. Given that one of the gamers stated that she actively selects her L1 (Arabic) as language of preference for the auto-matching option in order for her to play with gamers who only speak Arabic, researchers, language teachers, and language learners can benefit from this option by opting for English or any other target language through the auto-matching. This way, users will guarantee encountering speakers of their target language and opportunities of exposure to L2 or the target language are maximized.

IV. Limitations

Despite these implications, the study had several limitations. Firstly, because of the time-limit given for the project following the acquisition of IRB approval, it was not possible to collect more responses for the questionnaire nor conduct further interviews. This in turn limits the generalizability of the findings. Secondly, the corpus design faced several challenges; for one, some collected data was lost because of a coding error while saving some plain text files. In addition, more data needed to be collected to provide a bigger pool of data for conducting corpus searches. This in turn impacted the frequency counts and once more generalizability was unattainable. Thirdly, it was planned to collect in-game chat logs and voice chats to add to the data compilation. However, this was not possible since gamers mostly used voice chats and only used ready-made in-game text messages like ‘Let’s go!’ and ‘Help!’.

And to have access, it would be mandatory to join a live match and participate in the game, which would have required IRB approval and a signed consent form for each individual involved in the voice in-
game chat, and (2) the researcher’s participation and declaration of conducting a research itself would have sabotaged the data produced. It is therefore recommended that further research would explore the type of linguistic behaviors found in these in-game voice chats.

**Conclusion**

Language and technology are essential and ever evolving tools of communication between individuals and societies, and our duty as linguistic researchers is to continue with investigations that would further promote, facilitate and modernize the ways by which individuals can better communicate. In this study, the perceptions of an unexplored age group on their linguistic acquisition have been investigated through different instruments and it was concluded that young adult gamers in Egypt – and possibly in the Middle East – seem to agree on the beneficial outcome of playing a popular online role-playing game on their L2 vocabulary acquisition. By being actively involved in the game’s plot line, missions and matches, gamers have unintentionally learnt vocabulary items which they might not have otherwise encountered or learnt through formal instructional settings.

Additionally, by observing and interacting with the graphic environment that comprises virtual representations of these vocabulary items, gamers were able to develop a deeper understanding of these words utilizing dual coding as a learning strategy. Apart from vocabulary acquisition through the game itself, interactions in online discussions has demonstrated its abundance in other learning strategies and discourse functions such as questioning, requests for elaboration, and error-corrections.

It is hoped that the findings of this study would encourage educators to take online video-gaming as a learning tool more seriously and not lend it a blind eye merely because of the more
commonly known medically-based drawbacks to playing video games. Idealizing involvement in video-games is not the target of this research; the question to ask is why do educators spend a lot of time and effort in trying to gamify their educational content when they can instead, and by means of collaborating with game developers, transform the content of already existing, popular, and extremely entertaining games to an educational one or one that matches the curriculum? This study does not undermine the importance of instructional setting in teaching language, but rather it aims to explore ways that can complement the learning process outside the classroom. Imagine if teachers were to assign in-game missions for their students or learners to accomplish at home, would there be any doubts about their motivation to work on their assignment? Would they perform poorly were they given a quiz or a test in the following class that aims to assess their understanding of vocabulary items that were part of their video-game? Recently, educators all around the world are in support of going paper-less in our education, but somehow it seems that papers are simply being replaced with virtual, on display papers or Word Document. Perhaps going paperless is needed on a deeper sense of the word where content is delivered through vivid, reality-simulating, virtual representation and not electronically mirrored and magnified paper-based content on a classroom board.
References


1. Questionnaire

1. Please select your age group.

   A) 20 – 25
   B) 25- 30
   C) 30- 35
   D) 35 or more

2. Please choose your gender.

   • Male
   • Female

3. Your first language is

   A) Arabic
   B) English
   C) Other (please specify here …………………….)

4. Select 3 of your most favorite online role-playing games.

   □ PUBG
   □ Fortnite
   □ World of Warcraft
   □ League of Legends
5. How long have you been playing MMORPG?

A) Less than a year

B) 1-2 years

C) 5 years or more

6. How many hours do you spend playing an MMO, per week?

A) 10 hours or less

B) 10 to 20 hours

C) 30 to 40 hours

7. Your English language level is

A) Beginner

B) Intermediate

C) Advanced

8. Other than your school, you use English in
A) Family gatherings

B) Social media (Facebook, Instagram, Twitter...etc.)

C) Video-games

9. You think it is NOT possible to get through an online game levels without using English

A) I strongly agree

B) I agree

C) I disagree

D) I strongly disagree

10. When reading PUBG game instructions,

A) I understand everything

B) I sometimes need to look up unfamiliar words to understand everything

C) I don’t understand everything at first, but later I do

D) I ask other gamers about things I don’t understand

11. I think that playing PUBG has improved my English.

A) I strongly disagree
B) I disagree

C) I agree

D) I strongly agree

12. If you agree with question 11, please select the skills you think playing an online game has improved in your English language (You can select more than one choice).

- Speaking
- Listening
- Reading
- Writing

13. There are some words in English that I did not know their meaning before I started playing PUBG.

A) True

B) False

14. There are some expressions in English that I came to know from other native-speakers (Americans, English, Australians, Canadians) who play the game with me.

A) True
15. You use many of the words you learned inside PUBG in your real-life?

A) Yes, always

B) Yes, sometimes

C) Yes, but only in an English class

D) Never

16. How often do you visit external websites (Facebook pages) and discussion forums related to PUBG or another online game that you play?

A) Very often

B) Sometimes

C) Rarely

D) Never

17. Which do you prefer?

A) Solo mode

B) Team/guild mode
18. Does playing an online game make you consider learning other languages than English?

A) Yes

B) No, but I want to improve my English

C) No

19. If your answer to no. 18 is yes, please write the language you are interested in.

-------------------------------------------------------------------------------------------------------------------

20. How would you feel if your teacher/professor asked you to play PUBG as part of a course assignment?

A) I would be very happy and interested

B) It would be okay

C) I am not sure

D) I would be disinterested

E) I don’t think this can be helpful for my course grade or education

21. How do you feel about using English in PUBG?

A) Relaxed

B) Confident

C) Challenged
2. Interview Questions:

1- As a child, when did you start playing video games?

2- Did you develop some sort of preference for certain genre/type of video games? Why?

3- How did you come to know about the game, PUBG?

4- When did you join the game? / start playing?

5- Which servers in the game you prefer to play on (North America, Europe, Africa…etc.)? And why?

6- Have you ever played with a non-Egyptian? What was his/her nationality?

7- With regards to Q6, how was the game? Was it different than playing with Egyptians? Better? Worse? Elaborate.

8- How do you feel about using English in PUBG?

9- Can you tell me the meaning of the following words: loot – cover – drop – clan – zone – safe- revive – heal – scope – knock down – squad- warning- lag- noob?

10- Do you think the word ‘game’ has another mean, besides referring to the “video-game”?
3. Screenshots sample

<table>
<thead>
<tr>
<th>Rifle</th>
<th>Damage</th>
<th>Recoil</th>
</tr>
</thead>
<tbody>
<tr>
<td>QBZ</td>
<td>5.56mm</td>
<td>43</td>
</tr>
<tr>
<td>AUG</td>
<td>5.56mm</td>
<td>43</td>
</tr>
<tr>
<td>SCAR-L</td>
<td>5.56mm</td>
<td>43</td>
</tr>
<tr>
<td>M16A4</td>
<td>5.56mm</td>
<td>43</td>
</tr>
<tr>
<td>M416</td>
<td>5.56mm</td>
<td>47</td>
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<tr>
<td>M762</td>
<td>7.62mm</td>
<td>49</td>
</tr>
<tr>
<td>Groza</td>
<td>7.62mm</td>
<td>49</td>
</tr>
<tr>
<td>AWM</td>
<td>7.62mm</td>
<td>49</td>
</tr>
</tbody>
</table>

Screenshots sample

**Screenshot 1**

**Screenshot 2**
هو أيه المسدس الأحمر دا

Karem Camine

مرسل اسمه في السماء بينزلك بتضربه في السما بينزلك flare gun كيف مستوى 3

Screenshot 3