A decorative graphic on the right side of the page consists of three blue circles of varying sizes and two thin blue lines. One line starts from the top left and extends towards the middle of the page, passing between the top and middle circles. Another line starts from the top right and extends towards the bottom right, passing between the middle and bottom circles. The circles are semi-transparent and have a soft gradient.

Gamer perception of language learning and L2 interaction in MMORPGs

By Danning Chen

This small-scale study investigated the potential benefits of MMORPGs for second language learning. The investigation mainly focused on teenaged gamers from the age 13 to 18. Data were collected from online survey and recordings of in-game interaction. Findings showed that gamers overwhelmingly perceive MMORPGs as useful for second language learning and interaction. Analysis of L2 interaction in gameplay demonstrated intensive amount of target language output and input, as well as a variety of discourse functions and learning strategies.

**Master of Arts in English Language and Culture:
Education and Communication
6/26/2014**

Table of Contents

Introduction	1
Theoretical Background	4
The main characteristics of MMORPGs	4
MMORPG's connection to SLA	6
MMORPG's role in informal learning	8
Current research on MMORPGs for language learning	11
Methodology	18
Research questions	18
Data collection and analysis	18
Research venues	20
Findings	21
Gamer perception	21
Gamer interaction	29
Conclusion	38

Gamer perception of language learning and L2 interaction in MMORPGs

Introduction

The need for innovative and effective language education has never been stronger than in today's hyper-connected world. Different digital technologies, ranging from audiobooks to video games, have been examined by researchers and incorporated in language curricula by educators in recent years. Despite the broad penetration of new online technologies, many language teachers often limit themselves to technology that they are familiar with and that works well with teacher-centered instruction, such as presentation software and multimedia instruments (Thorne, Black, Sykes, 2009; Simpson & Stansberry, 2008). They might also be bound by traditional classroom resources and curricula. As teachers of digital natives, it is however imperative to gain a deeper understanding of technology that is more engaging and familiar to the students. One of the technological phenomena that has potential educational value and that is immensely popular among young people is video gaming (Gee and Hayes, 2011). Video games are believed to meet the relevance and engagement demands of today's generations of teenaged digital natives, who already spend most of their time in virtual space (Simpson, 2005). According to a governmental survey in 2009, gamers in Hong Kong between the ages of 15 and 24 spent 8.7 hours per week playing online games (Census and Statistics Department, 2009). In 2010, the European games industry disclosed that approximately 25% of Europeans older than sixteen were playing games regularly, especially online games (Game Division, 2010). Gaming is undoubtedly part of the mainstream household forms of entertainment and it is not limited to a certain group or age (Combs, 2008). Moreover, the Entertainment Software Association reports that consumers spent nearly 21 million dollars on computer and console video games in the U.S. in 2012. According to a report released by Gartner Inc., an information technology research and advisory company, the total worldwide game industry sales for 2013 would generate 93 billion dollars. These impressive sales revenues and the sheer immensity of the video game industry confirm that the current generation of digital natives, vast numbers of adults and adolescents, participate in virtual spaces provided by video games globally and on a regular basis.

The growing popularity of digital games has inspired researchers and educators to look deeper into the influence of gaming for children and adolescents. However, there are studies that investigated the potential negative effects of video games, an impressive body of literature focused on the potential of video games as an interactive medium (e.g. Anderson &

Griffiths, 2004; Ritterfeld & Weber, 2006). The predominant societal attitude was that playing video games may worsen children's vision and lead to behaviour and attention problems. However, this statement is debunked by Daphne Bavelier, a leading cognitive researcher, whose research projects show counterintuitive findings on the effects of video games on learning and brain plasticity. In her TED video, Bavelier states that video games, especially action-packed shooter games, benefit a person's perception, attention, cognition, and even vision when played in reasonable doses (e.g. Dye & Bavelier, 2010; Green & Bavelier, 2012). Not only are video games said to benefit aspects of behaviour, they also have been touted for their ability to render learning and education more interesting and pleasurable for the learner (Ritterfeld & Weber, 2006). Along with their intrinsically engaging components, video games not only provide space for young people to converse in virtual communities, they also provide non-threatening environments for meaningful learning, leadership development, collaboration, social and cognitive tasks, expert-to-novice mentoring, and other interpersonal skills (Schrader & McCreery, 2008; Steinkuehler, 2007; Gee, 2003). The genre of massively multiplayer online role-playing games (MMORPGs), in particular, have been chosen for this study because it is currently the most popular genre of video games (Kongmee, Strachan, Pickard, and Montgomery, 2011). It has also been receiving much attention from researchers and other educational constituents as it offers online virtual worlds that afford many useful and educationally relevant actions, such as synchronous interaction and collaboration in sometimes multiple languages (e.g., Thorne, 2008). Within the immersive virtual world of the MMORPG *World of Warcraft*, for instance, players socialize, acquire cultural and linguistic knowledge, and pursue shared goals and objectives (Thorne, 2008). Players in *World of Warcraft* thus in a way acquire language skills and knowledge through social interaction and in-game tasks. As MMORPGs provide learners dynamic opportunities for language learning, they can be used to close the gap between the learning processes and methods used in conventional institutionalized language classrooms and students' increasing participation in digitally mediated multilingual communities in their daily lives.

The relevance of MMORPGs, and games in general, to L2 learning is increasingly visible in the rise of interest by language educators and researchers. This is evident in the proliferation of journal articles and books dedicated to game-based learning (Cobb & Horst, 2011; Sykes & Holden, 2011; Thomas, 2011; Thorne, 2012). The recent establishment of many technology-themed language learning projects, to name a few: Euroversity, which focuses on the design, development and delivery of language classes in virtual environments

in games such as *Second Life*; NIFLAR (Networked Interaction in Foreign Language Acquisition and Research), which aims to incorporate innovative e-learning environments into foreign language education; and TILA project, which intends to improve foreign language education through telecollaboration among peers. There were also diverse keynotes about games at language learning conferences, for instance, Steve Thorn gave a talk about MMOG at EUROCALL in 2009. Besides keynotes, there were also special issues on game-based learning for instance by Thorne, Cornillie & Piet (2012) and Reinhardt & Sykes (2014). Moreover, there were online courses that use MMORPG to teach literature on Coursera (*Online Games: Literature, New Media, and Narrative* by Vanderbilt University on the open course website Coursera); and global communities were established for educators who game, such as Gamers Advancing Meaningful Education. In this sense, games are increasingly used for purposes other than recreation and entertainment and they gradually infiltrate the formal educational settings.

In light of the pedagogical and research interest in gaming, this research aims to contribute to the investigation into the merits of video games for second language learning. I plan to limit myself to the genre of MMORPG for its multiplayer and synchronous multilingual style, critical and commercial success. Many MMORPGs, such as *World of Warcraft*, *Guild Wars*, and *The Elder Scroll Online*, have millions of subscribers from different ages, social and linguistic backgrounds. These players mostly enjoy MMORPG for entertainment and socializing and generally do not associate MMORPGs with language learning. However, their language proficiency may be unconsciously affected by various features and linguistic elements in the games they play, such as quest logs, story line of the game, and informal social conversations. This study investigates players' perception of second language learning in MMORPGs through an online survey. This is followed by an analysis of gamers' L2 interaction in gameplay.

Theoretical background

The main characteristics of MMORPGs

Video games, also termed computer games or digital games (e.g., Gee, 2007; Begg, Dewhurst, & Macleod, 2005), refer to games played on computers and portable gaming consoles, such as PlayStation and Xbox, either online or offline, multiplayer or single player. The genre of MMORPG is defined by Hennig (2013) as "a ludic, narrative as well as a social room." Its designs include, on the one hand, a communicative component between players that affords interpersonal and intercultural interaction, and, on the other hand, incorporate

more narrative and language complexity than other game genres, such as shooter or adventure games. Examples of MMORPGs include *World of Warcraft*, *Guild Wars 2*, *Lineage*, and *Everquest II*. In a MMORPG, thousands or millions of players from all over the world interact in a rich, pervasive 2D or 3D virtual world with its own diverse species, economic systems and alliances. Typically, a MMORPG has several decentralized plotlines and one central plot that affects the majority of the players. The core of such a game is role playing guided by rules (Tychsen, Hitchens, Brolund and Kavakli, 2006). Having complete control of decision making at the character level, a player assumes the role of an in-game customizable character that is represented by an avatar to carry out tasks, to achieve objectives, and to interact with other user-controlled characters or NPCs (non-player computer-generated agents). A user-controlled character can choose to perform a role within a community, such as a supporter who heals injured teammates. Typically, players communicate with one another and with non-player agents during gameplay via various types of communication functions, such as synchronous chat channels, tools for voice chat, texts, and hypertext commands (Peterson, 2012). The diverse communication features allow players to utilize both visual and auditory channels for interaction and communication in order to progress their individual in-game characters. On globalized gaming platforms, gamers can interact with others in their first language or a foreign language, although English is often used as the matrix language (Pirainen-Marsh & Taino, 2009; Thorne 2008). However, some games, for instance *World of Warcraft* and *Blade & Soul*, have recently begun to allow players who speaks the same language or who are from the same country to choose to play in a language specific domain. In the area of language development, players in MMORPGs are thus given opportunities to practice their language skills through writing, speaking, reading, and listening (Gee, 2007).

The main aim in any MMORPG is to progress through the game hierarchy by levelling up in-game characters. To achieve that goal, players undertake increasingly challenging in-game actions, such as questing, raiding, trading, and player versus player (PvP) (Suznjevic, Matijasevic, and Dobrijevic, 2008). The most common activity a MMORPG player performs is questing. Quests are shown in game as pop-up texts that are usually longer than fifty words in length and provide instructions to players for carrying out a specific task as well as the context to that task. Image one shows an example of a quest from the MMORPG *Final Fantasy XIV*, which clearly displays language complexity. Upon completing a quest, the player receives rewards that will aid him in his in-game progression. The difficulty of the quest depends on the level of the character controlled by a player.

As the quests become more challenging and complex, they can only be successfully completed collaboratively in a tightly coordinated team (raids, parties) or in guilds (Thorne, Black, Sykes, 2009). Guilds are long-term social organizations that are formed to carry out choreographed team play, which is necessary if one wants to successfully undertake complex end-game tasks. As players in the same guild frequently communicate, schedule events, and share information, guilds are believed to enhance interpersonal relationships and alliance building (Peterson, 2012). Within such communities, in particular, gamers can gain assistance or collaborate with more experienced members, who provide newcomers or novice players with explicit instructions and feedback. Within the virtual world, in a team or in a guild, novice players thus can request assistance from more capable players if they encounter obstacles in a game. Through chats and discussions of strategies, guild members participate in first-hand learning, “intent participation,” through keen observation and listening-in (Rogoff, Paradise, Mejía, Arauz, Correa-Chávez and Angelillo, 2003, p. 195). Besides opportunities of observational learning, gamers often develop diverse social identities with distinctive levels of formality in their language production (Filsecker & Bündgens-kosten, 2012). Guilds do not only operate in games, as, occasionally, real-life guild meetings are planned in order for gamers to meet the people behind their avatars.

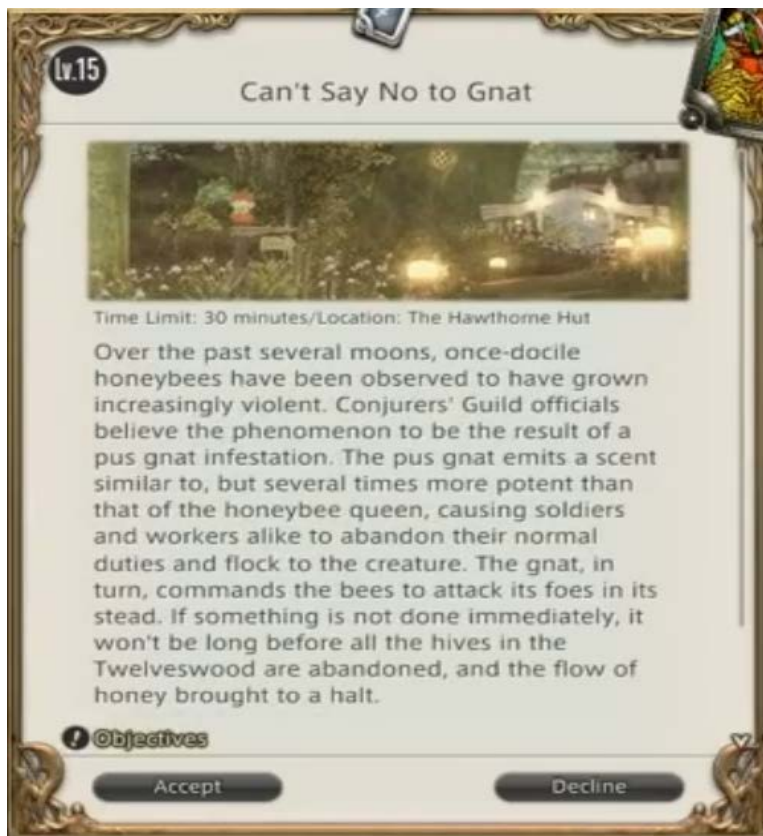


Image 1. Screenshot of a quest in *Final Fantasy XIV*.

The features in MMORPGs play a crucial role in providing players with a sense of immersion and social interaction. The in-game quest system is one fundamental component that may facilitate L2 learning through functional epistemology (learning through doing) (Squire, 2006). Goal-oriented collaboration (chats with teammates and within a guild), on the other hand, arguably provides more opportunities for real-time target language interaction with diverse interlocutors (Peterson, 2010b). The bimodal communication tools (i.e. text and voice communication) in MMORPGs also offer possibilities for various learning styles and cognitive skills. Current MMORPGs are also in a state of constant development, updating the games with new, challenging contents and improving in-game communication support.

MMORPG's connection to SLA

These features designed in MMORPGs are characteristic of what Prensky (2001) found in most games: rules; goals and objectives; outcome and feedback; challenge and opposition; interaction; and the representation of a storyline. These integral features of games are very similar to the characteristics of a successful (task-based) language teaching environment (Thomas and Reinders, 2011), and therefore are highly relevant to second language acquisition (SLA).

Peterson (2010a) argues that MMORPGs are valuable arenas for language learning from the psycholinguistic and sociocultural perspectives. According to psycholinguistic interactionists, there are two types of interactions that may support SLA (Peterson, 2010a). The first type is known as negotiation of meaning, which entails the use of repair strategies for solving communication problems. These repair strategies include asking for clarification and checking for comprehension (Long, 1991). The second type of interaction requires learners to focus on form and give/receive corrective feedback. From this psycholinguistic perspective, the real time target language nature of the interactions in MMORPGs is perceived as beneficial for cognitive restructuring that is needed for successful language learning. Through a sociocultural perspective, the social nature of interaction also contributes to second language development through collaboration (Firth and Wagner, 1997; Lantolf and Thorne, 2006). Researchers who take the approach of social constructivism believe that learning happens most effectively through executing collaborative tasks (Vygotsky, 1978). In this light, MMORPGs would be supporting venues as they provide plentiful opportunities for peer assistance, community membership, and collaborative social interaction. According to Peterson (2010a), learners are engaged in real-time interaction in the target language with diverse interlocutors during gameplay. Furthermore, he notes that:

"the presence of native speakers creates the conditions in which communication problems may occur, providing opportunities for learners to negotiate meaning. Text and voice chat provide real-time feedback and the performance of text coupled to the availability of scrolling facilitates monitoring, a focus on form and the resolution of communication problems"(pp. 432).

In addition to the advantages hypothesized by Peterson (2010a), proponents of game-enhanced learning claim that the enjoyable, learner-centred nature of virtual worlds engenders a high degree of motivation (Bryant, 2008; Gee, 2003; Gee, 2007). Motivation, especially intrinsic motivation, is perceived as a crucial factor for successful L2 learning (Dörnyei, 2001). In the context of gaming, learners are motivated intrinsically to use and/or improve their English to advance in their games (Gee, 2007). A MMORPG not only enhances learner motivation, it also offers an environment for optimal learning, which, according to Krashen (1985)'s input hypothesis, requires input that is slightly above the learner's current level of competence. In a MMORPG, a learner encounters tasks that can be challenging for their current skill but that are certainly not undoable, while having the opportunities to request assistance from more competent and skilled peers. While discussing the educational opportunities offered by videos games, Gee (2003, 2007) recognized the potential of MMO games for providing a context in which players can practice a foreign language. He identified 36 learning principles possibly present in a video game, especially MMORPG. To briefly summarize only a few of Gee's principles: the active, critical learning principle and the practice principle indicate that a video game requires a learner to actively practice a language in a secure and affirming space that is enjoyable rather than boring, where he experiences "ongoing success" (p. 207). These two principles align with second language acquisition (SLA) theory on the importance of exposure to and active interaction in the target language (Long, 1981; Swain, 2000; Sundqvist & Sylvén, 2012).

MMORPG's role in informal learning

Despite the link between MMORPGs and theories about second language acquisition, young people's playing of online games and their use of digital technologies out-of-class are generally viewed by educational institutions as leisure activities and therefore beyond valued formal educational contexts. However, although the primary motive for playing commercial off-the-shelf games is pleasure, gamers are involved in incidental or informal learning. Research on informal learning explores how informal activities affect learning and their effectiveness in that matter. Learners, regardless of their sociocultural background, acquire more knowledge outside of school in subjects they choose and for which they are deeply

motivated (Gee, 2003; 2004). Dewey (1938), an educational philosopher, hypothesized that learning takes place through one's experiences in informal contexts. His theory is supported by Smith (2002) who believed that an individual is shaped by all of his life's institutions and interactions, and by Fox (1997), who argued that much of what we learn occurs during informal practice. Moreover, Johnson (1999) found that much of the learning happened informally through listening and peer interactions.

Informal learning refers to the inherent, authentic and natural learning that typically takes place outside schools (Livingstone, 2006). Formal learning, on the other hand, refers to highly structured learning situated within institutional settings, such as schools. Unlike formal learning, informal learning is not sequenced beforehand by a teacher, but it is obtained through self-chosen and voluntary activities. In other words, the learner controls learning, which happens either intentionally (but not in a highly structured way) or as a byproduct of some other activity (Marsick & Watkins, 2001). Marsick and Watkins (2001) state that informal learning takes place wherever an individual feels the need, motivation, and finds the opportunity for learning. Significantly, formal and informal learning are interconnected and interacting in various degrees rather than two opposites (Folkestad, 2006). Informal learning can support and reinforce formal learning, and vice versa, in order to enhance learning, increase motivation, and strengthen cognitive development (de Freitas, 2004; de Freitas & Levene, 2004). There is reason to believe that this could be realized, for instance, if educators use games to support curricular objectives.

Researchers and educators who have started to consider the implications of children's online gaming and other game-related activities as part of their informal social and cultural lives have raised questions about children and adolescents' learning in such informal settings (Sefton-Green, 2004). Sefton-Green (2004) identified several themes in the literature that deal with informal learning with technologies outside school, namely the significance of culture, motivation, identity, interactivity, and production/design. In her article, video gaming is considered as an important informal or non-formal activity that contributes to these characteristics of informal learning. Adolescents are immersed in video games, which are associated with myriads of information nowadays (Gee and Hayes, 2010). Many contemporary television shows and video games are highly complex, involving multiple, interweaving plots that keep a learner preoccupied for a long time. Contrary to the general belief that informal learning does not involve teaching, Gee and Hayes (2010) argued that teaching in informal learning is a form of public pedagogy that is characterised by three implicit forms: design, resources, and affinity spaces. In other words, Gee and Hayes make

the point that teaching is a part of the online gaming world. MMORPGs teach through good design with situated meaning and lucidly functional language. Also, they provide sufficient resources to facilitate learning. These resources include gameplay tutorials, fan fiction books, and game-related videos and discussions. The virtual worlds of MMORPGs are considered as affinity spaces, in which people relate to each other in terms of their common passion and endeavours (Gee, 2007). In game-related affinity spaces, whether online or in the real world, for instance, players engage in debates about issues, like ethical concerns, race, and gender (Gee and Hayes, 2010). Such discussions indicate development of critical thinking and learning that are aspects of public pedagogy. Gee and Hayes (2010) give an example of an ordinary girl who achieved success through “modding” clothing in *The Sims*. Fascinated by what she could do with the computer, she went further than just gaming and learned how to create her own clothing in the game. Such informal learning happened by herself through the opportunities offered by *The Sims* and its affinity spaces rather than through traditional schooling. Gee and Hayes’ study is further supported by Sylvén and Sundqvist (2012), who found a positive correlation between online gaming and informal L2 learning, especially through the reading of in-game texts.

The discussion of informal learning in connection to gaming suggests that the nature of the informal learning is embedded in playing MMORPGs. MMORPGs provide rich, informal environment for language learning and learning in general. Gee and Hayes’s argument that teaching is embedded in online games also relates to Vygotsky (1978)’s notion of the zone of proximal development which states that the learner progresses through challenges faster with the support of a more experienced “other,” whether a teacher or an experienced peer, or a resource, than they could on their own. From this perspective, it is interesting to consider how MMORPG communities and players may take on the role of a teacher and support inexperienced learners.

Support for this seemingly close connection between digital gameplay and informal learning, and between gaming and SLA, has increased thanks to the burgeoning amount of research and pedagogical activity focused on the potential values of technology in support of L2 learning and teaching. Some prevalent acronyms within this field are computer-assisted language learning (CALL), network-based language teaching (NBLT), and Game-based language learning (GBLL), which has been thriving for the last two decades. Research on MMORPG is part of this groundswell of interest on game-based, or rather game-enhanced, language learning. While some researchers have voiced scepticism about the role of digital games in language pedagogy (Kim, 1995; Chik, 2011), researchers who advocated game-

based/game-enhanced language learning have overwhelmingly claimed that digital games have advantages that affect cognitive aspects of language learning and collaborative group dynamics (Lengeling & Malarcher, 1997), and that a properly designed gaming environment can enhance “task-relevant communication and relationship building” (Purushotma, Thorne, and Wheatley, 2009, pp. 32), and be motivating and anxiety-reducing (Gee, 2007; Reinders & Wattana, 2011, 2014). Digital games provide learners with an informal immersive space in which they express themselves freely with a focus on meaning rather than form (Silvers, 1982). Of the games that offer large virtual communities and immersive simulations, Cornillie, Thorne and Desmet (2012) made a distinction between tutorial CALL games (synthetic immersive environments) and commercial off-the-shelf games (COTS). Synthetic immersive environments include games with open environments such as *Second Life*, and studies (e.g. Zheng, Young, Wagner & Brewer, 2009; Zheng, Young, Brewer, & Wagner, 2009) have shown their potential as language learning environments. COTS games, such as *World of Warcraft*, on the other hand, are usually not designed to include language-specific, tutorial elements but might incidentally cater to language learning. Reinhardt and Sykes (2014) further distinguished between game-enhanced, game-based, or game-informed research. MMORPGs are mainly investigated in game-enhanced research, which looks at commercial games, how these games can afford L2 learning “in the wild,” and how they may be adapted for formal pedagogical purposes. The scope of this paper is limited to the category of multi-player commercial virtual worlds.

Current research on MMORPGs for language learning

Literature on MMORPG specifically explored COTS and started out in 2002, focusing mainly on four areas: the games themselves, systems architecture, gaming experiences, and educational MMORPG (Castañeda Peña, Salazar Sierra, González Romero, Sierra Gutiérrez, & Menéndez Echavarría, 2013). Studies that examined the educational value of MMOs for language learning for the most part focused on the player and what they gain from playing such games. For example, Squire (2008) and Steinkuehler (2008) explored the value of MMO environments for literacy practices, such as letter writing and debates. Other research concluded that the communication environment in MMOs could have merits for teaching and learning second language (e.g. Peterson, 2012; Thorne, Black, & Sykes, 2009; Thorne & Fischer, 2012; Zheng, Newgarden & Young, 2012).

In a recent edited book by Hayo Reinders (2012), several researchers contributed to the field of MMORPG and L2 learning. Among them was Chik (2012), who conducted a study on the perceptions of learners and teachers toward game-related activities for foreign

language learning. She found that learners perceive games as useful for target language input and interaction. MMO games allowed them to be autonomous and self-directing. Teachers, on the other hand, considered games less appropriate and less effective than most traditional learning tools. The author concluded that players in MMORPGs had autonomy in language learning and gave each other voluntary feedback on language-related issues. In another chapter, Peterson (2012) highlighted the importance of learner attitudes. He focused on learner discourse management strategies, collaboration, and attitudes in a browser-based MMORPG called *NineRift* and found that intermediate-level Japanese EFL learners effectively utilized discourse management strategies to facilitate a consistent L2 output. Not only did the learners engage in collaborative social interaction, they felt the gaming experience was motivating and engaging and that it helped them to improve fluency and to learn vocabulary. Unlike an earlier study by Peterson (2010a), in which opportunities of increased negotiation of meaning were found, this study found no instances of negotiation of meaning and highlighted limitations, such as broadband Internet problems, that could influence gameplay and learner feedback. Both studies identified positive attributes in MMORPGs, such as high motivation, collaboration, and reduced communication inhibition. As the effectiveness of game-enhanced learning depends greatly on the acceptance by learners, these two studies emphasize the role of the learner in using MMORGs for language purposes. It is thus deemed necessary to understand learners' perceptions that influence their attitudes and underlie their learning processes.

Besides new edited volumes like the one by Reinders discussed above, the numbers of special issues dedicated to digital games and language learning has also grown considerably in the past few years (e.g. Cornillie, Thorne, & Desmet, 2012). For instance, a special issue on game-informed L2 teaching and learning by the journal *Language Learning & Technology*, edited by Reinhardt and Sykes, was released during the writing of this paper. While the special issue included articles about gamified social networking tools and offline games, some articles focused on the study of games for language teaching and learning. For example, Chik (2014), in line with her earlier works investigating L2 gaming and learner autonomy outside formal instructional contexts, argued that gamers exercise autonomy by managing their gaming experience both for entertainment and learning in five dimensions: location, formality, pedagogy, locus of control, and trajectory. Their autonomy and L2 learning practices especially depended on gaming communities for resources and support. Chik thus not only examined in-game discourses but also considered game-related individual and social factors. Data collected for this study were language learning histories, background surveys on

gaming practices, interviews, and a one-year project including blog entries, recorded gameplay sessions, stimulated recall sessions, and threads from gaming forums.

Other studies gathered in-game dialogues and self-reports by players of MMORPGs and these data associated high levels of L2 learning with various aspects of gameplay, such as the participants' in-game interactions (e.g., Thorne, 2010; Thorne & Fischer, 2012; Thorne, Fischer, & Lu, 2012; Roma, Black, van Es, & Warschauer, 2012; Peterson, 2012). For instance, Thorne (2008) examined multilingual interaction between an American player and a Ukrainian player in *World of Warcraft*. During their interaction, English was the main language used in chats. The researchers observed exchanges of interpersonal information, the use of humour, and politeness. The dialogue between the two players, both inside and outside of the game, indicated that the two players learned languages in a natural, meaningful interaction by giving each other various forms of negotiation of meaning, peer scaffolding, and explicit feedback. Both parties were motivated in learning the other's language and eventually developed a deep friendship by having intercultural and linguistic in-game dialogues. However, this study did not offer full empirical corroboration on the perceived and reported claims of L2 learning.

Similar to Thorne (2008), Piirainen-Marsh and Taino (2009) highlighted the quantities of social interaction both within a MMORPG and around it in game-related discourse. This study demonstrated how recurrent lexical and prosodic features within *Final Fantasy X* helped male teenagers (aged 10-14) develop their linguistic competence and interactional skills in English. Although this is one of the few studies that examined young learners, the limitation of this study is that the researchers restricted their analysis to only two individuals (Finnish-speaking boys).

Thorne, Fischer, and Lu (2012) empirically illustrated the rich semiotic ecology of *World of Warcraft* that contributes to a good language learning environment. The authors gathered gamer responses through questionnaires and conducted several interviews with some of the respondents. They then assessed quest texts as well as game-external websites and concluded that quest texts in *World of Warcraft* displayed a high degree of lexical and syntactic complexity and that game-external websites were an integral part of the game culture. Rama, Black, van Es, and Warschauer (2012) gathered qualitative data such as journal excerpts and chat logs from *World of Warcraft* (WoW) and their findings are in line with other research that WoW provides learners with a collaborative space and affordances for L2 learning and learners' socialization. Results in a similar vein are reported in a study by Zheng, Newgarden and Young (2012), who found multiple values-realizing opportunities in

WoW for English learners that are otherwise absent in real-life classroom environments. Learning culture in *World of Warcraft* is also examined by Nardi, Ly and Harris (2007). Using Vygotsky's notion of the zone of proximal development, the authors analysed chat conversations of players. They identified the presence of emotion in these conversations and concluded that the spontaneous, contextual nature of the conversations had potential for language learning as well as learning in general.

Several studies suggested that MMORPG may have positive effects particularly on vocabulary acquisition. A pilot study by Rankin, Gold and Gooch (2006) revealed that target language output was enhanced for the majority of participants who undertook eight gaming sessions. The vocabulary of intermediate and advanced L2 English learners was increased by 40 per cent as a result of interaction with non-player characters in *EverQuest II*. The chat messages in the target language were increased by 100 per cent during social interaction between players. High beginner-level learners, however, experienced cognitive overload as they found the game environment overwhelming. Despite the diverse levels of language proficiency, all the learners were more motivated and claimed to receive sufficient L2 learning support in the game. The study was relatively small-scale and the researchers did not conduct an in-depth investigation of the participants' attitudes. In a subsequent mixed-methods study, Rankin, McNeal, Shute, and Gooch (2008) further examined the acquisition of vocabulary by learners in *EverQuest II*. Through close examination of the in-game dialogues between 19 non-native speakers and eight native speakers of English, the authors found that MMORPG helped the non-native learners improve in their vocabulary tests significantly, although the learners with traditional classroom instruction outperformed the gaming learners in post-tests. Their study pointed out that games need to be further designed in vocabulary-specific needs in order to reach the same effectiveness as classroom drills. The findings also showed that the gaming students demonstrated a remarkable increase in target language output by interaction with native English interlocutors. These participants reported positive perceptions towards online gaming and the majority felt engaged and motivated during their gameplay. Bytheway (2013) similarly looked at university learners' vocabulary learning strategies, which are positively affected by the online community in *World of Warcraft*. To navigate successfully through the hierarchical structures of the game, learners combined strategies, such as requests/giving explanations, and receiving/giving feedback with self-learning strategies, such as reading in-game information and guessing from context. This study is limited, however, as it had a small sample size (six participants) and focused only on the analysis of data of gameplay and interviews.

While many studies examined language learning during gameplay, there are several studies that emphasized the importance of game-external websites and activities (e.g. Chik, 2014). Game-external activities, also called paratexts, refer to activities that happen beyond the game, such as visiting discussion forums on which players can discuss screenshots or glean strategies for dungeons; seeking advice in walkthroughs reading; contributing to game wiki writing; and sharing interests in game lore and fan fiction (e.g. Thorne, Black, & Sykes, 2009; Ryu, 2013; Thomas, 2007; Ito, 2007; Apperley and Beavis, 2011; Thorne, Fischer and Lu, 2012). Apperley and Beavis (2011), for instance, argued that gameplay and other game-related activities engage players in different levels of language learning. Ryu (2013) claimed that social interactions in online communities outside the gameplay are richer and more active than in the game. Researchers who have been interested in game-related activities beyond the in-game environment thus have called for an ecological perspective to explore both gaming and beyond-game activities. Unfortunately this study does not have room to include in-depth exploration of those beyond-game activities, but it does recognize their significance.

Another learner-based CALL project that reported positive findings of the use of a MMORPG for language learning was by Rankin, Morrison, McNeal, Gooch, and Shute (2009). In this project involving the use of *Ever Quest II*, chat transcripts of ESL learners were analyzed and pre- and post-tests of vocabulary were carried out. The study consisted of Chinese advanced learners of English and native speakers of English. The participants were divided into three groups. The group of ESL learners who played the game collaboratively with native speakers of English achieved greater knowledge of game-related vocabulary than those who played the game alone and even more than those who received conventional classroom instruction. Although the gaming participants experienced initial difficulties, they engaged in extensive target language output involving collaborative dialogue as they progressed in the game. Also, the novice users received supporting guidance from the native speakers, who adopted the role of a leader. This study agrees with Peterson (2012) that playing MMORPG accommodates extensive target language output, conversational fluency, and practices of discourse functions related to collaborative social interaction. The data further indicated that MMORPGs provide learners with a comfortable, naturalistic learning and communication environment. In a project that also focused on the acquisition of vocabulary, Sundqvist and Sylvén (2012) showed that *World of Warcraft* facilitated the acquisition of English vocabulary by Swedish high school students. However, they noted that weaker learners did not engage as much in video games as stronger learners, and that boys

preferred multiplayer online games, whereas girls preferred offline single-player games such as *The Sims*. In a related project, the researchers found that the gamers were predominantly boys, while girls spent more time on pastime language-related activities, such as chatting on social media and reading magazines (Sundqvist and Sylvén, 2014). However, motivation and self-assessed English skills were high for both genders.

While previously discussed studies used unmodified MMORPGs, Reinders and Wattana (2011), as well as their more recent article that appeared in the special issue edited by Reinhardt and Julie Sykes (2014), physically modified the MMORPG *Ragnarok Online* for Thai university students and investigated the quantity and quality of L2 interaction during gameplay. They found an increased degree of willingness to communicate in English and a high level of participation. While the Thai learners of English were reluctant to communicate in English in the classroom, they were more willing to interact and to use English in the game space. However, participants' utterances did not improve in complexity or precision, possibly due to cultural and affective factors. Hence, careful pedagogic instructions were needed for more positive effect on the L2 learning process. Similar studies by deHaan (2005), Peterson (2010, 2012), Voulgari (2011), Zhao and Lai (2009), Zheng, et al. (2009) also reported that participants felt more confident and willing to communicate in the target language in MMORPGs. Another study that utilized modded MMORPG is by Chen and Johnson (2004). The authors investigated the relationship between the game, called *Neverwinter Nights*, and students' motivation and states of "flow." Although the findings suggest a high positive correlation between the two, the authors called attention to the importance of sufficient training and game experiences.

Few large-scale studies have been conducted on the effects of MMORPG on language learning. Suh, Kim, and Kim (2010), for instance, conducted a large-scale study among elementary EFL learners and reported that playing MMORPG resulted in higher scores in listening, reading, and writing than scores obtained through regular classroom instruction. Similar to Peterson (2012), this study mentioned prior gaming experience as an influence on a learner's motivation and performance. One of the limitations of this study is that it did not discuss learner in-game interaction and provided no data for learner attitude.

Peña and Hancock (2006) studied conversations in a MMO and found a significant amount of socio-emotional talk, such as compliments and expressions of solidarity, besides task-associated communication. Additionally, the production of positive socio-emotional talk increased when a player ascended in rank and level. In other words, not only did this study support the claim that communication in MMO enhanced interpersonal relationship and

alliance building, it showed that players underwent a development of language socialization as they gained experience.

Kongmee, Strachan, Pickard, and Montgomery (2012) aimed to gain a comprehensive insight into the role of MMORPGs plays in supporting second language learners and learners' perception of their language development when using a MMORPG. After examining the gameplay by two Thai undergraduate students in several MMORPGs, the authors concluded that the students improved their language by playing the games, gained confidence in using their L2. The games motivated them to further develop their language skills and engage with their language learning. This study is one of the few studies that discussed several MMORPGs, learners' perceptions, and compared the differences of the gameplay and language learning results between an inexperienced player and an experienced one. However, the limitation of this study is also its small-scale quality, especially for the investigation of learners' perceptions.

All in all, research on games and language learning is growing and shows game-informed insights that can inspire and guide further research in game-mediated language learning studies specifically focused on MMORPG. Although this great number of empirical and theoretical studies explored the educational merits of MMORPG from different angles, recent research has uniformly agreed that this game genre is a viable tool for second language learning. Researchers believe that MMORPGs have benefits ranging from improved vocabulary use and literacy, to increased motivation, confidence and engagement, to expanded opportunities for interpersonal relationships and intercultural communication. MMORPGs are also suggested to encourage extensive output in the L2, fostering the development of competence and skill (Schrader & McCreery, 2008). Participants broadly show positive attitudes toward gaming and gaming as a form of language task or second language learning experience. Based on these attributes, researchers argue that in-game interaction, user strategies, and variables associated with MMORPG gaming should be studied. While many studies have empirically examined gameplay structures and language complexity inherent in MMORPGs and analyzed learner gameplay activity and chat interaction, linking them to language learning, there is still a great need for further research. Current research is subject to several limitations, such as small sample sizes and the reliance on participant feedback data. Also, more research is needed on the ways in which learners use MMORPGs in out-of-class settings, as advocated by Chik (2012, 2014). Within the recent studies that focused on player experience and interaction in MMORPGs, very few aimed at learners younger than eighteen (e.g. Sundqvist & Sylvén, 2012; Piirainen-Marsh & Taino,

2009). Many projects utilized foreign language learners as participants instead of participants who were already part of a gaming community. While several studies explored learner attitudes, few studies (Chik, 2012; Sundqvist & Sylvén, 2012; Kongmee, Strachan, Pickard, and Montgomery, 2012) reported on learner perceptions toward gaming and language learning in MMORPGs. The majority of the studies focused on only one MMORPG, leaving no room for comparisons of games within their research. They also usually focused on participants of the same L1 background. Therefore, a large survey from more diverse L1 backgrounds would offer an interesting insight into the effects of MMORPG on learner interactions and perceptions.

Methodology

Research questions

Literature discussed in the previous section has shown that the findings gathered to this date suggest that MMORPG may be used to enhance L2 learning and motivation. MMORPG-based gaming has been claimed to encourage willingness to communicate in the target language, which in turn leads to increased target language output and greater language fluency and proficiency (MacIntyre, Baker, Clément Conrod, 2001; Reinders & Wattana, 2011). Data suggest that if learners interact comfortably and freely it would positively influence L2 learning and acquisition. However, current research leaves certain areas only partially explored. These largely unexplored areas include teenaged learners' in-game interactions and perceptions of language learning in MMORPGs. The purpose of this study is to contribute to the literature by exploring the teenaged gamers' L2 interaction in gameplay and perceptions of language learning in MMORPGs. The following questions are therefore posed:

1. What are teenaged gamers' perceptions of second language learning in gameplay?
2. What are the important features of teenaged learners' L2 interaction in MMORPGs?

This exploratory study consists of two parts. The first part focuses on the first question, which intends to find out what teenaged gamers think about the effects of their game-related activities on their language learning, particularly which interactive features in MMORPGs they perceive as beneficial to their L2 learning. The second part of the study seeks to answer the second question, which concerns learner interaction and intends to identify and analyse a range of activities involved in language learning, such as the negotiation of meaning, self-and other-initiated correction, the use of discourse functions, and categories of speech acts (e.g. openings and closings and assertive statements). The role of interaction is indispensable in second language learning and acquisition. Not only does it facilitate observing (Schmidt, 1990), it also stimulates negotiation of meaning (Pica, 1994), generates wide-ranging input (Krashen, 1985), and encourages the use of discourse functions, such as greetings, questions, clarification requests, confirmation checks, and self-corrections (Reinders and Wattana, 2011).

Data collection and analysis

Two types of data were collected: (a) teenaged gamers' responses to a questionnaire for evidence of their perception of L2 learning during gameplay, and (b) video recordings and screenshots of two gamers' in-game interaction and communication.

In order to examine how learners themselves perceive their language learning experience in MMORPGs, an online survey with 25 questions was conducted among gamers between the ages of 13 to 18 who play MMORPGs in the English language. The recruitment criteria did not specify a particular nationality or nationalities, but it was made clear that only gamers whose first language was not English were eligible to respond. The online survey was distributed through various social networks (Facebook pages and groups, LinkedIn groups, and community forums of several MMORPGs), at several Dutch high schools, and sent directly to gamers known by the author.

The survey questions were designed to gain a picture of a player's gaming and language experiences. Some questions also aimed to elicit their opinions about the types of in-game interactions in those games that facilitate or encourage the participant's language learning. In-game interactive and non-interactive features that have potential value for second language learning include:

- quests (mission statements, mission story elements and mission reward descriptions),
- dialogues with NPCs (dialogues with choices),
- storyline (cut scenes and similar non-interactive sequences and cinematics),
- goal-oriented collaboration (chats with teammates and within a guild),
- social interaction (random chats),
- role playing
- In-game letters (asynchronous communication)

Open questions addressed subjects such as a player's prior gaming experiences, gaming frequency, gaming behaviour, and his/her perception of MMORPG for educational usage ("What do you think if your language teacher asks you to play MMORPG as part of an assignment?"). Multiple choice questions using a five point Likert scale addressed feature-specific in-game language experience, such as "Have you improved your knowledge of English or another foreign language through in-game letters?" Besides game-related questions, the questionnaire included general questions about age and gender, and language-related questions, such as his/her experiences with the English language, the number of years exposed to L2, proficiency in L2, and his/her feelings about communicating in English in game.

The questionnaires were subsequently collected and analysed in order to gain an insight into teenaged gamers' gaming behaviour and their views about learning language(s) in MMORPGs. The survey would also determine which interactional in-game features in the genre MMORPG influence L2 learning according to learners' perceptions.

Besides the discussion of the online survey of learner perception, the primary data analysis instrument in this study was the discourse analysis of gameplay interaction, chat transcripts extracted from the video recordings, and screenshots. This is necessary to answer research question two about L2 interaction of teenaged learners in MMORPGs. In order to study learner interaction in MMORPGs, two participants' gameplays were recorded. The empirical survey data and the analysis of the interactional and linguistic features in in-game interaction by two MMORPG gamers would give an exploratory assessment of the resources of MMORPGs as L2 learning environment and learner feedback.

Research venues

World of Warcraft and Ragnarok Online. The participants for the interaction part of the study chose to play *World of Warcraft* and *Ragnarok Online*. Both games include access to a wide range of in-game quests and activities. *World of Warcraft* (WoW), arguably the most famous MMORPG with multiple expansions, was launched in November 2004 by Blizzard Entertainment Inc., and had 7.8 million active subscribed players worldwide in the last quarter of 2013 (Statista, 2014). In WoW, players can level up to 90. What makes WoW singular is not only the tremendous number of subscribers but also its strong compulsion to social cooperation. As high-level quests cannot be solved individually, players are dependent on each other by forming groups, raids (groups of bigger size), and guilds. The society in this game is multicultural and Multilanguage. Recently, it has become possible to use a language-specific realm, and players who choose to play on the English-language server therefore use English as the primary language of communication.

The second MMORPG was *Ragnarok Online*, developed by a South-Korean company called Gravity Corporation in 2002, which is still highly popular in Asia and, to a lesser degree, in Europe. There are several official servers as well as countless private servers, which are often modified to suit players' preferences. Like WoW, the real-time simulated environment in *Ragnarok Online*, shortened as RO, changes gradually with the passage of time. Changes to the main story line take place as episodes in the timeline of the game, whereas in WoW the major changes happen with each expansion of the game. RO offers sufficient opportunities for player interaction, such as battling creatures, quests, and weekly guild events. One of the popular game features for guilds is called War of Emperium, which allows guilds to battle and conquer a castle. For this event, members in a guild have to team up well in order to successfully capture the castle faster than their opponents for benefits and special advantages. Compared to WoW, RO might be less ideal as a language environment as there is a stronger tendency towards grinding (killing creatures over and over again for

items). On the other hand, no subscription is required to play this game and its relatively low system requirements allow the game to run on almost any computer. Moreover, RO could be modified to suit a language class's need, as shown in the study by Reinders and Wattana (2011).

Both games have vast numbers of regular players, offer extensive player support in the forms of user websites and in-game guidance for beginners, and contain various engaging contents. Both games are graphically elaborate virtual worlds that enable bimodal communication tools and multi-channel synchronous chat tools and asynchronous letter applications. Because of these factors, the participants personally found these games most enjoyable and engaging.

Findings

In the following discussion, the section “gamer perception” discusses the data gathered by the survey, followed by another section containing the analysis of the data excerpts from the video recording of participant interaction in a separate section. In order to provide for anonymity, respondents in the surveys are referred to by their numbers and participants in the interaction analysis are referred to by their in-game nick names.

Gamer perceptions

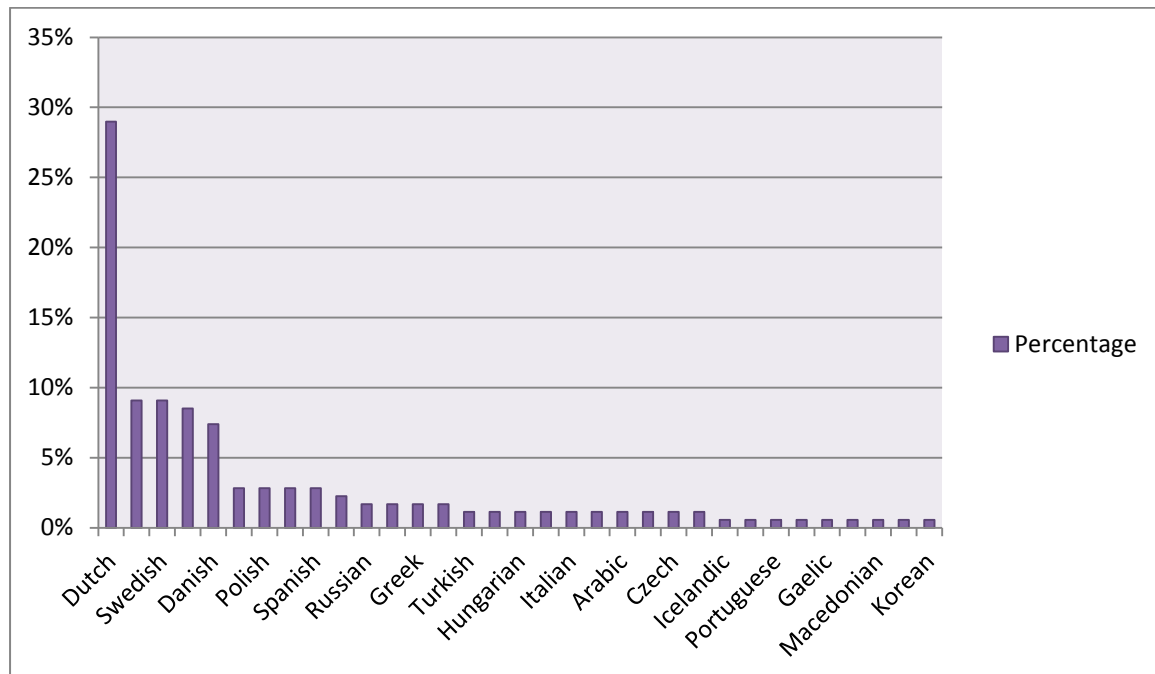
176 gamers between the ages of 13 and 18 filled in the survey. The first three questions focused on eliciting gamer background information (age, gender, first language) so as to gain a better understanding of the target audience. For question number one, they had to fill in their age. Table 1 shows the number of respondents per age group. Evidently, whereas gamers of the age 13 were only 3% of the total respondents, 42% of the respondents were 18 years old and were finishing high school or were already attending college.

Age	Number of respondents	Rounded percentage out of total
13	3	2%
14	13	7%
15	20	11%
16	28	16%
17	38	22%
18	74	42%
	Total: 176	100%

Table 1. The numbers of respondent for each age group

Question two elicits the gender of respondents. 79% of the respondents were male ($n = 139$), whereas 20% were female ($n = 37$). This significant imbalance in gender indicates that MMORPG gaming appeals to boys more than to girls. This finding is in line with the research by Sundqvist and Sylvén (2012, 2014). There is relatively little evidence to answer the question why MMORPGs does not appeal as much to girls as to boys. Possible explanations could be the competitiveness of the genre and that girls prefer to play offline games like *the Sims* or to spend time on other pastime activities such as social media (Sundqvist and Sylvén, 2014).

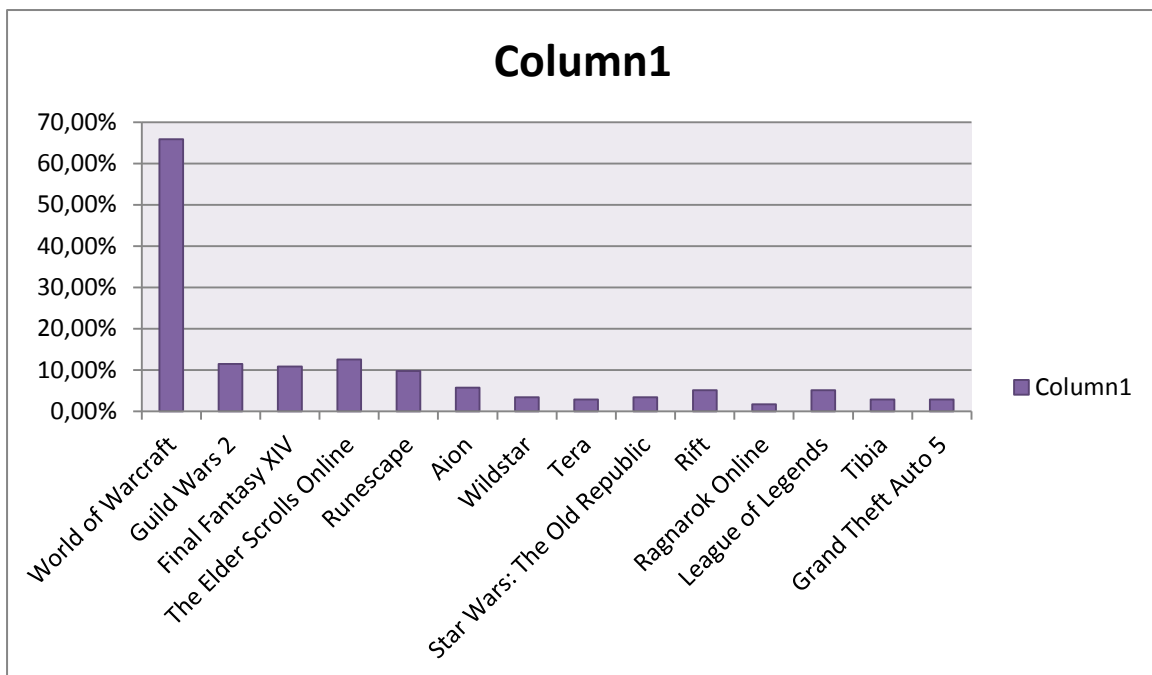
For question three of the survey, respondents had to fill in their first language. 33 languages were listed in total, confirming the Multilanguage and multicultural nature of MMORPGs (see graph 1). In the top five of the list, 51 Dutch respondents, 29% out of total, ranked first, followed by 16 German, 16 Swedish, 15 Norwegian, and 13 Danish respondents. Other languages included European languages such as Croatian, Polish, Spanish, French, Greek, Finnish, and Asian languages, such as Chinese, Japanese, and Indonesian. Since this survey only sampled a small portion of the gamers in MMORPGs, the diversity of nationalities could be assumed to be far greater in reality.



Graph 1. The first language of respondents in percentage

Question four intended to gain a picture of which MMORPGs are played by today's teenagers. The question asked respondents to list maximal three favourite MMORPGs, thereby allowing them to list multiple games. *World of Warcraft* was mentioned 116 times,

leaving other MMORPGs far behind. Following *WoW* were *Guild Wars 2*, *The Elder Scroll Online*, *Final Fantasy* online game series, and *Runescape*. Other games mentioned included *Aion*, *Rift*, *Star Wars: The Old Republic*, *Tera*, *Ragnarok Online*, and *Wildstar*. The findings of this question demonstrate that teenagers can choose a myriad of MMORPGs with different styles and genres. The fact that *World of Warcraft* was favoured by the majority of the respondents could have been influenced by the tremendous number of Facebook groups dedicated to *WoW* communities, compared to other MMORPGs, as the survey was also distributed through Facebook. Based on this finding, *WoW* could be said to have the most affinity spaces.



Graph 2. Top MMORPGs mentioned by respondents in percentage

Question five elicits the number of years of MMORPG gaming experience. Only two respondents had played MMORPGs for less than a year. 25% of the respondents had played MMORPGs for 1 or 2 years. 44% of the respondents had 3-5 years of experience, whereas 15% had played MMORPGs for 6 or 7 years. Another 15% of the respondents recounted 8 to 10 years of gaming experience. Although there is no way to gather evidence for these statements, we can see that MMORPG gamers are usually dedicated gamers who continue to play a particular game or games for a long period of time.

Closely related to question five, question six found out approximately how many hours teenaged gamers spend on playing MMORPG per week. 22% of the respondents (n = 38) claimed to spend 10 or less than 10 hours a week on MMORPGs. 32% of the respondents (n = 56) claimed to play 11 to 20 hours a week. 23% of the respondents (n = 40) played

between 20 to 30 hours a week. 11% of the respondents ($n = 20$) said they played around 30 to 40 hours a week, whereas 21 respondents claimed to play more than 40 hours a week. On the basis of on the amount of time spent on playing MMORPGs, as reported by the gamers themselves, we can conclude that gamers not only play MMORPGs for a long period of time, but also frequently. Gaming is part of their daily, if not weekly, life.

When asked about their proficiency in English, around 56% of the total respondents perceived their proficiency in English as advanced. 41% thought their level was intermediate. 5 respondents, who were around age 13 or 14, reported their proficiency as beginning. The high level of perceived proficiency in English might be understandable if one looks at the years of exposure to English reported by many respondents in question eight. As the majority of the respondents were from a Western country, many were exposed to the English language around the age of 10. Some respondents even mentioned being exposed to English when they were in elementary school (thus younger than 10). However, the years of exposure to English also depend on a respondent's age and nationality, and are thus highly individual and circumstantial.

What the respondents did have in common were the ways they made contact with the English language other than at school. For question nine, respondents were asked whether they have contact with the English language other than during English classes at school. They had to elaborate by describing their sources of contact. Nearly all the respondents listed online video games as the sources for contact with the English language. Many mentioned social interaction with international friends online and in the real world, for which English is the language of communication. For such interaction, some reported they used Skype, TeamSpeak or other voice chat tools. Other mediums that were mentioned repeatedly were TV, series, Youtube, and Internet. Significantly, social interaction affects gamers' English language usage and frequency of usage. Technology and Internet play an indispensable role in teenaged gamers' daily life, evident in the different (online) technological mediums they used.

One of the main concerns of the survey is the investigation of the usefulness of in-game features for language learning as perceived by gamers. Questions 10 to 18 and question 20 of the survey were multiple choice statements that used a five point Likert scale. Questions 10 to 16 were designed to elicit gamers' opinions regarding (non-)interactional features in games in relationship to language learning, whereas question 17, 18, and 20 were focused on English language learning in games in general. The participants were asked to choose one answer from the following options: 1 strongly disagree, 2 disagree, 3 no opinion, 4 agree, and 5 strongly agree. The middle value labelled "no opinion" was included to allow

honest answers from gamers who might not have strong feelings about or experience with a particular feature of MMORPGs. An analysis of gamer responses is provided in table 2.

Question statements	Mean	SD	Interpretation
10. I have improved my vocabulary through quests.	4.04	0.92	agree
11. I have improved my English through my dialogues with NPCs.	3.89	0.88	Agree
12. I have improved my English through storyline (cut scenes and similar non-interactive sequences).	3.98	0.89	Agree
13. I have improved my English through goal-oriented collaboration (chats with teammates and within a guild).	4.51	0.77	More than agree
14. I have improved my English through social interaction (casual, random chats).	4.44	0.79	More than agree
15. I have improved my English through role-playing my character(s).	3.57	1.03	Somewhat agree
16. I have improved my English through reading and writing in-game letters.	3.96	0.95	Agree
17. I have learned new vocabulary in MMORPGs	4.51	0.59	More than agree
18. I mostly became more fluent in communicating in English.	4.31	0.85	More than agree
20. Gaming made me use English more than in a regular class.	4.49	0.77	More than agree

Table 2. Mean scores and standard deviations of gamer responses to question 10 to 18 and 20.

In reaction to statement 10, responses averaged 4.04. Most of the respondents expressed that their English had improved through reading or carrying out quests. This suggests that doing quests would positively influence language acquisition. Especially vocabulary and reading skills would be affected, since players have to read and interpret quest texts. In reaction to statements 11 and 12, responses averaged 3.89 and 3.98, respectively, indicating that the respondents also felt that they benefited from dialogues with non-player characters and storylines of games. Statement 13 about social interaction in teams

and guilds scored the highest mean score among all aspects. This implies that gamers collectively recognized the value of collaboration for their English learning. In statement 14, casual in-game chats, such as that with friends, private chats or random encounters, averaged 4.44. This shows a high level of agreement with the statement that non-organized, casual social interaction also assists in language learning. Responses about role-playing in statement 15 found limited agreement. Role-playing refers to chatting and playing as if you actually are the character in the game-world. For instance, if one decides to take on the role of a mercenary, he/she acts out the role of a mercenary. This is possibly because some respondents who had had no experience with role-playing during gameplay, chose the option “no opinion.” Others deemed this feature non-significant in their gaming experience. Role-playing also tends to be more a choice of play style, rather than something necessary for progressing in games. Opinions about in-game letters (statement 16), which is also not a dominant feature in MMORPGs, nevertheless averaged 3.96, indicating that gamers perceive reading or writing in-game letters as useful to language learning.

In reaction to statement 17, respondents generally agreed that playing MMORPGs facilitated learning new vocabulary. Respondents also agreed that gaming helped them develop their fluency in the English language. Surprisingly, responses to the statement “gaming made me use English more than in a regular class” were 4.49. This would appear to signify that MMORPGs provide an environment conducive to target language output, more so than in a conventional classroom context.

To gain a better insight in which aspects of language learning are believed to be facilitated through MMORPG gaming, question 19 requested respondents to check one or more boxes listing the four skills of the English language: speaking, listening, writing, and reading. 53% of the respondents believed that their speaking and listening skills had improved. For writing and reading skills, about 78% were convinced they had been improved through gaming. This finding suggests that not all aspects of the English language are equally enhanced through gaming. Some gamers might use voice chat tools more than others, who might prefer to use in-game chat functions and focus on text-based game-related activities.

Question 21 does not focus on in-game activities but on game-external activities, the so called paratexts, such as walkthroughs reading and sourcing, online discussion forums or bulletin boards, game wiki writing, and game text analysis. Although this project does not have game-external activities as one of the primary research subjects, this question is nevertheless included because these game-related activities outside the gameplay are closely intertwined with in-game activities. The question requested details of activities and frequency.

While 25% of the respondents claimed not to participate in any game-related activities, 75% of the respondents reported that they partake in game-external activities weekly. For some, these activities were even daily routine, indicating a high consumption and production of paratexts. Below are some selected responses:

Category	Samples of responses
Information seeking	<p>Respondent 3: I often read forums such as Elitist Jerks, Icy-Veins, HLTV.org, Cadred.org. Roughly 1-2 times a week (HLTV.org everyday).</p> <p>Respondent 13: I read discussion on the website of World of Warcraft, listen to podcasts, read class analysis, statistical research, discussion boards, YouTube videos and so on.</p> <p>Respondent 46: Everything above, some hours a day maybe, going through some forums etc is my daily routine before gaming.</p> <p>Respondent 79: Walkthroughs, raid tactics, game guides, character guides, forums etc. for the games I play are in English and I use maybe a third of my weekly “game time” browsing through these sites.</p>
Active participation	<p>Respondent 11: Reddit, and probably like 14 hours a week</p> <p>Respondent 40: pretty often, I am a lore-junkie and most of the lore for the games I play is written in English. I also sometimes go into discussions, but rather on Facebook than message boards.</p> <p>Respondent 60: I personally do not contribute much myself but I hang out and read what other people has to say on different forums, youtube, twitter, facebook and so on some times every day.</p>
Active participation and contribution	<p>Respondent 166: I am admin on a game forum so I monitor and post many posts almost daily.</p> <p>Respondent 52: Yes, I watch lot of Youtube about 1 hour a day, at the same time whenever I play I listen to English streamers. I also do a little Youtube and stream some myself.</p> <p>Respondent 94: I do theorycrafting on MMO-champ, 10-15</p>

	<p>hours a week.</p> <p>Respondent 90: Yes. I'm writing a lot in game forums, reading/writing guides (mostly for League of Legends) and also teaching high level gaming somehow to players, who are not German.</p> <p>Respondent 166: I am admin on a game forum so I monitor and post many posts almost daily.</p>
No game-related activities	Respondent 37: Not really

Table 3. Samples of respondents' answers about game-related activities per category

The active participation in game-related activities shows that game-related subjects are an integral part of gaming experience for many of them. They either seek information online, participate in discussions and debates, or contribute to the enrichment of game-related resources themselves. The diversity of the resources and websites suggests that gamers are exposed to the English language even outside of the games they play. They can take on the role of a learner who seeks for guidance or a leader/teacher as shown in the responses by respondent 90 and respondent 166.

If the games these respondents play are usually in the English language, one might wonder whether other foreign languages become irrelevant in the gaming world. Question 22 asked respondents whether gaming motivated them to learn a foreign language. 22% of the respondents answered that they did not feel motivated to learn a foreign language. 41% responded that gaming motivated them to advance their English skills since it is the language of gaming. However, 43% ($n = 75$) of the participants replied by listing one or more foreign language which is not English. Some of foreign languages included Japanese, Russian, German and the Scandinavian languages. Although some respondents did not answer or did not give a clear answer, it seems that 41% of the respondents acknowledged the importance of the English language for gaming, listing English along with one or two other foreign languages. Respondent 74 from Sweden answered: "As English is such a common language in the gaming world, English is really important to me." It would appear that respondents were eager to advance their English skills as a way to advance in the games they play. Although the games they played mainly motivated them to improve their English, most

participants noted that it was the relationships with other gamers that motivated them to learn a foreign language other than the English language. Respondent 101 said: “It made me want to learn Japanese so I could play with Japanese players.” Dutch respondent 168 added: “most of my guild mates are German so I tried to learn more German to follow their conversations. Normally I hate going to German classes at school,” implying that the social interaction with foreign friends was the crucial factor in activating his desire to learn a foreign language other than English. Seemingly, in order to understand fellow gamers or socialize with players from another country, some gamers feel motivated to learn a foreign language.

The social nature of gamers is probed into through question 23, which asked the respondents whether they prefer soloing or grouping in games. The results show that 13% of the respondents preferred soloing, whereas the vast majority preferred to play in a group or did not favour a particular play style. It would seem so that players attracted to the genre of MMORPG are by nature social beings. Respondent 58 remarked: “I don’t like playing alone; the game is multi-player for a reason. It just isn’t as fun playing on your own,” implying that they would play offline single-player role-playing games if they hated playing in groups. Respondent 58 also felt that collaboration is essential in MMORPGs by saying “teamwork is always better, so grouped I assume.” Besides the social nature of the MMORPG gamers, the findings of this question support the theory that one needs to collaborate in order to successfully progress in such games.

MMORPGs and its potential merits for language education call for the broader question about whether educators should integrate gameplay into language curricula. It would be interesting to find out what gamers think about this matter. Question 24 asked respondents what they would think if their language teacher asked them to play a MMORPG as part of a class assignment. 86% of the respondents (n = 151) reacted extremely positively to the idea of using MMORPGs for classroom purposes. However, 13% of the respondents had mixed feelings about the idea. The negative reactions range from disbelief to scepticism about the application of such game in school assignment. For instance, some contemplated that perhaps not every student in a class would welcome the idea of playing a MMORPG for an assignment. Below are some examples of the mixed reactions:

Respondent 49 said: I don’t think that all kids like gaming and they shouldn’t be tasked cause games are a personal choice. Although parents won’t like it at all.

Respondent 71: I think it would be awesome in my case then. Don't think that counts for everyone though since a lot of people think gaming is boring and are not interested in it so for them it will just be another boring and weird assignment.

Respondent 166: I wonder if the teacher prepares well for that assignment. I am curious how he would use the game.

Clearly, the respondents saw that their enjoyment in these games does not apply to anyone and that utilizing these games requires further preparations and possibly modification. Especially non-gamers might respond reluctantly to the idea of playing games for school. However, this can be changed through teacher attitudes and preparations. But overall, gamers strongly welcome the idea of playing MMORPGs for learning's sake.

The last question of the survey elicits gamers' overall feelings about communicating in English in a MMORPG context. 11% of the respondents chose the first option "I feel at ease," whereas about 30% chose the option: "I enjoy communicating in English during gameplay." 52% said they were good at communicating in English during gameplay and felt confident about it. Only 6% of the respondents, who were the youngest of the age groups, found communicating in the English language challenging. A possible explanation for these findings is that gamers, especially those from a northern European country, are exposed to the English language sufficiently not to experience any difficulties communicating in it. Another explanation is that MMORPGs provide a comfortable environment in which teenagers do not have to fear making mistakes or feel judged by a teacher.

To conclude, these gamer responses gathered from the online survey reveal that respondents overwhelmingly agreed on the usefulness of in-game features in MMORPGs for assisting their language learning. They believed that gaming helped them learn or improve their English skills, especially reading and writing. They also felt that MMORPG gaming helped them develop their fluency and learn new vocabulary. Many of the respondents also expressed positive views about their ability to communicate in English successfully in games. This shows that they are willing to communicate in the target language. This particular sense of enjoyment and ease felt by many respondents is in line with Reinders and Wattana (2014)'s study, which showed that participants had statistically lower levels of anxiety and higher level of perceived communicative competence when communicating in English during online game activities than they did during class time. This is not only a result of gameplay but also of the amount of time spent on game-external activities as claimed by many respondents. Gamers gladly support and share their interests in the affinity spaces of their

favourite games. Although game-external activities should not be overlooked, this study will further focus on the analysis of gameplay interaction.

Gamer interaction

For the analysis of gameplay, two gamers were asked to record their gameplay. Ryth, a Dutch high school student who had just turned 17, agreed to record his gameplay of WoW through Twitch, which is a leading video platform and community for gamers (www.twitch.tv). Ryth claimed to play WoW more than 70 hours a week and one of the main gaming activities he did was raiding. Raiding means that players form a group and enter dungeons for the purpose of killing end-game bosses for rewards. The videos downloaded from his Twitch account showed him leading a random raid. The raid, which happened in the evening, had the length of four or more hours.

The raid which Ryth was the leader of took place in Throne of Thunder, which is one of the hardest dungeons of WoW's latest expansion. In order to assemble a 10-man team, Ryth looked for random players in a major city in the game world. He made sure he had enough healers, who keep the raid group alive; tanks, whose role is to make sure the boss only focuses on them; and damage dealers (dps), who deal out enough damage to take down the boss. He also opted for heroic dungeon mode instead of normal mode, as it would be more challenging and rewarding. As Ryth raided often, he was already familiar with the tactics that would lead to successful task completion. He normally raided with his guild called "London Calling," which had a native English speaker as raid leader, from whom he learned many tactics and language usage. He also read up on information about the bosses before the raid on WoW wiki websites such as www.icy-veins.com. This supports the survey results about the indispensable role of paratexts.

One important highlight of this gameplay was that the players used an external voice chat tool instead of in-game text chat for communication. Voice chat tools like TeamSpeak offer a faster and easier way to convey messages than in-game chat tools. Using voiced communication through TeamSpeak, Ryth gave instructions and explained boss strategies

before every fight. Image 2 shows the team standing in positions ready to attack a boss.



Image 2. Ryth and his team in a raid in *World of Warcraft*

For instance, before engaging in a boss fight, Ryth spoke on TeamSpeak: “so this boss is pretty simple. We can either do the normal tactics or we can stack and nuke it. The one thing we need to remember is that the priest spawns a spirit and that needs to be nuked down or else it will heal one or the other bosses. If you see a boss and the one that gets corrupted...so the possessed one...he needs to be focused no matter what percentage other bosses are. So if you see a boss become possessed, dot it, cleave it, whatever, just focus on that one first, ok?” He then asked whether the teammates understood what they had to do and divided tasks to players with different roles.

In the transcript above, Ryth used several utterances of speech acts. First of all he tried to give the players more confidence by stating that the boss they were facing was “easy.” Ryth also used game-specific vocabulary, such as the words “nuke” and “stack.” Subsequently, he gave explicit orders to his teammates, thereby performing the (locutionary) speech act of saying that spirits and possessed bosses need to be prioritized in killing. He was relatively fluent but not without grammar mistakes when speaking or writing in the English language. In fact, messages in text chat were often written without punctuations and in contractions as a way to save time and effort. However, an increased target language output is detected in the recorded gameplay as Ryth talked in English constantly in order to lead the raid forward. Moreover, he managed to convey the essential for instance needed to defeat the boss to his teammates in a few sentences. While collaboration in a team has the potential of

developing Ryth's social skills, planning and organizing as a leader may be beneficial for his development of metacognitive skills.

Ryth's explanation and instructions of tactics before and during each boss fight also involved the use of discourse functions such as repetition and rephrasing. He often repeated the same information to make sure players followed his instructions. When the team wiped (failed to defeat the boss), new players were invited into the raid group. Ryth then again briefly explained the current situation and made sure the newcomer knew what he could expect. This is similar to the game interaction analyzed in Piirainen-Marsh and Taino (2009)'s project, in which frequent repetitions were identified.

Ryth was not the only one talking on TeamSpeak. Several teammates also shared their thoughts and engaged in meaningful collaborative interaction and discussion of strategies. For instance, when the team failed to kill a boss after two attempts, the teammates discussed what should be changed in order to succeed. Teammate 1 pointed out the cause of the wipe, saying "healer died," and offered advice: "btw devo aura helps a lot as well." Another teammate suggested: "we need to use strong raid cd's for the last 3 rampages." Ryth then discussed the orders of the cd's (particular class skills) after listening to each advice. The players thus consistently engaged in collaborative social interaction that involved discussion and negotiation of meaning, which happened when Ryth paraphrased the second teammate's advice to confirm that he understood what the teammate meant. As a couple of the teammates were native English speakers, Ryth was also exposed to authentic colloquial English. For instance, at one of the bosses, Nadrain, who was a native speaker, temporarily became the raid leader as Ryth was unsure about the tactics for that particular boss. Nadrain explained the strategy he had in mind and the raid responded to signal understanding. Remarkably, native English speakers tended to take the role of a leader more than non-native English speakers. They also talked more than non-natives, offering supporting guidance. This supports Rankin, Morrison, McNeal, Gooch, and Shute (2009)'s findings that native English speakers tended to adopt the role of a leader or teacher.

Below are two more samples of the interaction recorded during the raid:

Example (1)

1. Ryth: so I'll kick the turtles this time, unless somebody else wants to do it. So if I fail, you are allowed to blame me. I've never done it before, but I'll try my best.

[After the fight]

2. Teammate 1: What was wrong with your turtle?

3. Ryth: I had no turtle. Only one that I got was the one in the corner. And it blocked my vision when I got behind it. So I couldn't really kick.

4. Teammate 1: ah, you couldn't aim for it.

5. Ryth: yes, I couldn't aim for it. If I went behind this...like zoom in you know, so I couldn't see anything except for the wall.

6. Teammate 1: I see.

Example (2)

7. Teammate 5: are we done soon

8. Ryth: lol why

9. Teammate 5: don't feel like doing anything...just wanna lay in bed but im not gonna leave

10. Ryth: just chill

11. Teammate 5: Im just sad and pissed off sorry

12. Ryth: ahw why? Wanna talk

13. Teammate 5: Guess -_-

14. Ryth: Karl?

15. Teammate 5: Nah :/mhm

16. Ryth: why then? Period?

17. Teammate 5:KARRLLL

[The team wiped at boss Megaera]

18. Teammate 5: that was my fault...sorry

19. Ryth: Sorry sweety that it takes so long

20. Teammate 5: I said karl btw. You said no

21. Ryth: why are you sad from karl

22. Teammate 5: He is just fucking stupid...

23. Ryth: I know lol. You found out now :P

24. Teammate 5: ...

25. Ryth: What did he do?

26. Teammate 5: he just can't understand that i'm depressed

27. Ryth: ahw and why are you depressed then

28. Teammate 5: Because...dhwehfkfhfhfklhfl

29. Ryth: hehe wanna talk later about this cause im streaming

30. Teammate 5: I know

[Second wipe at boss Megaera]

31. Ryth: if you wanna leave just leave. You okay?
32. Teammate 5: I don't wanna talk
33. Ryth: okay i'm always here if you need me. If you wanna leave, leave sweetly.
Don't wanna keep you here if you feel shit
34. Teammate 5: its fine
So am I doing little birds? This time
35. Ryth: no, you're not doing the birds, [name of the teammate], just stay here and
dps the boss
36. Teammate: okaaayyy

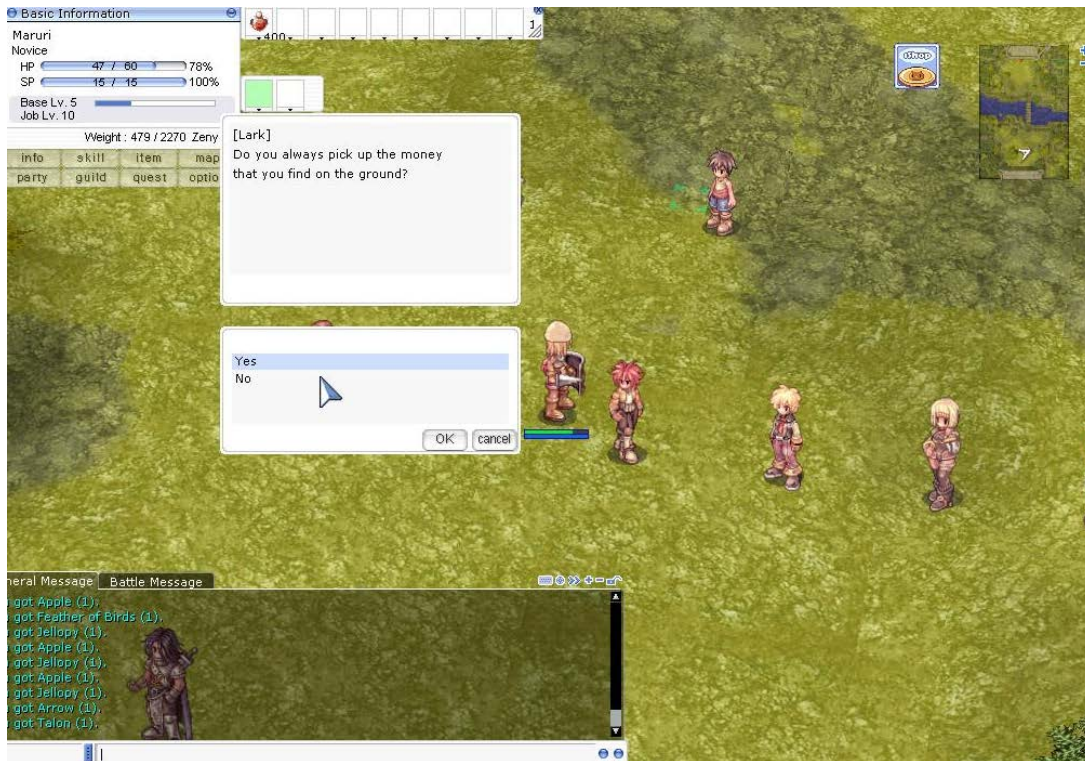
Example 1 was spoken on TeamSpeak and the scene happened when the team failed to defeat the boss called Tortos four times on heroic mode. Before the fight, Ryth repeated the tactics on TeamSpeak and decided to take over the task of kicking the turtles. He spoke assertively to make clear that he would take the responsibility for his actions. However, the team failed the fight as there was a problem with turtle kicking. Instead of reacting angrily, one of the teammates asked Ryth what went wrong with the kicking of the turtles. He made a clarification request that required Ryth to come up with an explanation. Ryth tried to give a clear description of what happened in colloquial English. The teammate then replied by rephrasing Ryth's last sentence, indicating other-initiated correction and negotiation of meaning. Ryth showed agreement, repeated the previous heard utterance spoken by the teammate to indicate uptake, and continued to give a more detailed description. The teammate showed that he did not need further explanation by saying "I see," which is often used as a closing statement.

The raiding and interaction during the raiding as exemplified by Example One demonstrated a remarkable increase in the output of the English language. Although players' utterances do not particularly focus on form and precision, their interaction supports Vygotsky (1978)'s notion of the zone of proximal development and his theories about effective learning through collaborative tasks. The numbers of errors in the progress of the raid also indicates that interest was sustained through challenges. This is in line with Vygotsky (1978)'s hypothesis that learning is more effective when the task or resource is more advanced than the learner. Through peer assistance, scaffolding and interchanges of the role of a "competent speaker," the players were able to progress through the dungeon.

Example 2 shows a private text-based chat between Ryth and one of the teammates, who appeared to be a close online friend. Teammate 5 was a girl from Sweden who seemed to feel unwell during the raid. The excerpt showed utterances lacking capitalization and

punctuation. This is because gamers tend to use distinctive Internet language for chatting, which entails the use of emoticons, contractions, and slangs, such as “mhm.” Contractions and emoticons used in games, however, are identified by Peterson (2012) as learners’ use of adaptive discourse management strategies in order to deal with the computer-based nature of the communication. The habit of typing in informal, grammatically incorrect English in game might be problematic for some teenagers, who might apply it to educational or formal settings. Moreover, vulgarity was found in several sentences. This proves the study by Chik (2011), which identified vulgarity as part of the game culture. However, this conversation demonstrates the use of questions, apologies, confirmation checks, and affective questions and statements (line e.g. 25 and 33). Ryth asked questions to find out why Teammate 5 was sad, showed his empathy for her, and offered her solace.

Like Ryth, participant number two, Maruri, engaged in L2 interaction when playing *Ragnarok Online*. Maruri was a 14-year-old German student who was doing his 6th grade in high school. He had been playing MMORPGs for four years, but not more than 10 or 15 hours a week due to strict parenting. He had just recently learned about RO and felt very motivated to try it out. For his in-game interaction, Maruri mainly used text-based chat boxes provided in the game to communicate with other players. He tried RO on a high-leveling rate private server for several weeks and was transferred to a normal-leveling rate official server on Steam, which is an internet-based digital game platform. Since every server is different, Maruri had to familiarize himself with the new RO environment. Once he had entered the game, he went through novice training, which is a feature provided by the game to guide beginners. Image 3 shows Maruri taking the class test, which a quiz designed to help new gamers to choose a class according to their personality. Such supporting features offer players immediate feedback and guidance, while they had to read in the target language.



After choosing a class, Maruri continued his journey through the game by doing quests and killing monsters. During leveling, he engaged in a conversation with a native English speaker called Elmoastardo. Two excerpts from their conversation are shown below:

Excerpt (1)

1. Elmoastardo: you assassin or rogue?
2. Maruri: easy lvling
I think I will choose assa
3. Elmoastardo: yeah thats why i picked it first
nice choice
4. Maruri: lol yeah what lvl are u now?
5. Elmoastardo: you gonna be crit type? 43 now^^ you?
6. Maruri: damn I need to catch up :P I just came here so lvl 12 XD
7. Elmoastardo: we both still have a long way to go ^^
8. Maruri: defo
u have to do your job quest?
that sucks so much
9. Elmoastardo: yeah i know :/
10. Maruri: maybe I should return to my private server xD
11. Elmoastardo: haha its too easy! ^^
12. Maruri: but then it doesnt have renewal classes

13. Elmoastardo: early game is the hardest part
just wait when we're rich! ^^
14. Maruri: T^T impatient :p
15. Elmoastardo: hahah im gonna stick it out i think ^^
16. Maruri: how do I go back to that room with missions?
17. Maruri: I feel like a total noob
18. Elmoastardo: talk to one of the npcs by the kafra
i forgot the name though!
19. Maruri: ty mate :)

Excerpt (2)

20. .Ploutos.: whats your char name on talon?
21. Maruri: erm I will be on cresiam I think
22. .Ploutos.: cool if im not on here ill be on talon
23. Maruri: oki
24. Maruri: whats your name there
25. Maruri: maybe its easier
26. .Ploutos: elmoastardo if its not taken lol
27. Maruri: haha ok cya

Although no negotiation of meaning is identified in their in-game interaction, Maruri's in-game conversation with Elmoastardo shows that these players used a variety of discourse functions in the English language. For instance, line 6 and 10 are declarative statements used to convey information. Line 18 is an imperative statement which Elmoastardo used to give Maruri directions. Lines 1, 4, 5, 16, and 20, for instance, are questions used to seek information from the other player or about game-specific information.

In lines 11, 13, and 18, Elmoastardo also used exclamative statements mainly for emphasis purposes or to express playfulness. In the short time that Maruri spent on the Steam server, he managed to make friends with Elmoastardo and even convinced him to join him on a higher-leveling rate private server as shown in excerpt 2, in which Elmoastardo, playing on his second in-game character .Ploutos., suddenly asked Maruri for his contact information on the private server. Maruri also used several language learning strategies during his gameplay on RO, such as requesting/giving information and receiving/giving feedback. He also read in-game quests and guidance. When he encountered a word he did not know, he claimed to just skip it or to guess the meaning from its context.

While most of the time Maruri and Elmoastardo's interaction concerned game-related activities, there were occasions when they engaged in small talk to get to know each other, as exemplified in excerpt 3:

Excerpt (3)

28. Maruri: but is your native language English or?

29. Elmoastardo: Talon is downloading now. Yeah but I can also speak Filipino :)

This sample, which shows Maruri's curiosity about Elmoastardo's personal background, indicates players' desire to build rapport and interpersonal relationships.

When comparing Ryth's goal-oriented collaborative interaction with Maruri's casual chats in game, there are a number of similarities. First of all, like Ryth's interaction, Maruri's L2 interaction in RO also demonstrates a remarkable amount of target language output by interaction with peers. It also shows game-specific vocabulary and shortened versions of words. The game-specific contractions and the use of emoticons indicate the use of discourse management strategies. Both participants also used utterances that display humour, politeness and friendliness and engaged in socio-emotional talks, involving expressions of solidarity, understanding, and encouragements. Such conversations clearly signal their desire to establish positive affective bonds with peers and other players. Whereas Ryth mainly utilized voice chat for L2 interaction, Maruri only used text-based chat and thereby only developed his reading and writing skills. This is in line with his answers for the survey for question 19, for which he responded that only his writing and reading skills had improved thanks to gaming. Both participants interacted with native English interlocutors, who seemed to help them develop their linguistic and interactional competence in English.

In an informal talk with the author, while acknowledging that raiding helped him to develop his leadership skills, Ryth believed that his English skills mainly improved through questing. He also mentioned that interaction with other players can also affect his English skills negatively. He recounted an experience with a female player from Denmark, who barely spoke any English. Ryth remembered that her English was improved by interacting with him, whereas he took over her grammatical errors in his own speech. Thus the proficiency level of a player can influence another player's language competence, positively and negatively. However, he also mentioned being motivated to learn other languages through interacting with players, such as Swedish and Danish. Maruri, however, agreed with Ryth that his English skills mostly improved through questing and watching game videos, rather than interacting with other players. Yet he was glad to use English for chatting with players like Elmoastardo and commented favourably on the opportunities for target language

interaction provided by games, since he did not have a chance to practice the English language much besides in English classes and in games.

Conclusion

The data gathered from the survey conducted for this study and the analysis of in-game interaction seem to agree with previous research on MMORPGs and language learning. The findings suggest that MMORPG gaming is clearly related to the likelihood of teenagers improving their L2 skills. This conclusion is by answering the research questions. For research question one about teenaged gamers' perceptions towards second language learning in gameplay, the survey results demonstrate overwhelmingly positive perceptions provided by gamers about language learning in MMORPGs. The various features of the genre, ranging from quests to social interaction, are perceived as useful to the learning and improvement of the English language. For research question two about the important features of teenaged learners' L2 interaction in MMORPGs, this study found the occurrence of various features, including intensive target language output, language usage, and discourse functions, identified in gamer L2 interaction in two MMORPGs by two gamers. Besides linguistic features, the study also identified the development of interpersonal relationships.

As shown in the interaction analysis of gameplay by two teenaged participants in two different MMORPGs, literacy practices occur "in the wild" as players work together collaboratively to achieve shared in-game goals or interact socially to build or strengthen relationships. Interacting with international gamers provides gamers with authentic language input and opportunities for active English learning and use. They often had to improvise utterances according to circumstances, thereby improving fluency and use of vocabulary. Their L2 interaction during gameplay did encourage a variety of discourse functions, such as greeting, clarification requests, questions, and confirmation checks. It also seems possible to negotiate meaning in the target language as shown in the interaction by one of the participants. Not only are their English skills enhanced through gameplay, players learn autonomously and informally, for the purpose of enjoyment rather than learning. They are also exposed to colloquial English language that is not taught in class. In Ryth's raiding gameplay, reciprocal alternations in expert status happened in order to proceed to higher levels of accomplishments. Furthermore, L2 interaction and collaboration in MMORPGs are not only beneficial to the development of social skills and metacognitive skills, they also allow players to build up relationships with gamers from other countries. This study thus shows that playing MMORPGs can indeed have beneficial effects on the quantity of the L2

interaction, but not necessarily on the quality of the L2 interaction, as shown in the slangs and grammatically incorrect utterances used in Ryth's interaction.

The features of MMORPGs seem to provide many opportunities for language learning. Many features, including questing and storyline, are rated highly by gamers who participated in the survey. The interaction part of this study merely focuses on two of the features, namely synchronous player-to-player interaction through goal-oriented collaboration and casual talks. However, other features should not be overlooked. The participant Ryth, for instance, told the researcher that he reached his current proficiency in English through reading quests. This claim supports Chik (2011)'s finding that gamers were keen on understanding the L2 in-game texts when the desire to progress in a game was strong.

This exploratory research draws attention to potential benefits of MMORPGs for second language learning, especially because these games function as informal, engaging arenas for an immersive second language experience according to gamer perceptions and interactions. High level gameplay, for instance in WoW, fuses together enjoyment and learning through a focus on challenging and difficult goal-directed collaborative activities. Players are exposed to diverse target language input and produce target language output consistently. However, the linguistic quality of L2 interaction is not constantly optimal "in the wild," and a gender-related threshold is also evident for this genre of games. Although this study shed some light on teenaged gamers' gaming behaviour and experiences, especially in MMORPGs, how they perceive gaming and how this relates to language learning, it has several shortcomings. First of all, it is limited in scope and size. For instance, due to time restraints and circumstances beyond the researcher's control, the analysis is restricted to the gameplay by only two gamers. Secondly, it is merely exploratory, relies on participant feedback, and does not provide evidence of language acquisition in correlation to online gameplay. Although these factors require acknowledgement, the results of this study nevertheless provide insights into MMORPG-based gaming by teenagers from diverse L1 backgrounds and their perceptions.

The findings of this study draw attention to several aspects that future studies could attend to, such as the influence of proficiency level, gender, and game-related activities. They could statistically measure the usefulness of in-game features for language training by conducting experiments. Future studies are also challenged to take a step further and to conduct large scale research on MMORPG gaming and language learning and acquisition. Other potentially fruitful areas include the integration of MMORPGs in the language curriculum in a high school setting. As gaming and computer technologies play a significant

role in many teenagers' lives, formal education should leverage the advantages of these technologies, starting by incorporating multiplayer online games. The incorporation of games into the traditional educational system would also render language learning and practices more enjoyable for the learner.

References

- Anderson, C.A. Funk, J.B., & Griffiths, M.D. (2004). Contemporary issues in adolescent video game playing: Brief overview and introduction to the special issue. *Journal of Adolescence, 1*, 1-3.
- Apperley, T., & Beavis, C. (2011). Literacy into action: Digital games as action and text in the English and literacy classroom. *Pedagogies, 6*(2), 130-143.
- Bavelier, B. (2012, June). Daphne Bavelier: Your brain on video games [Video file]. Retrieved from http://www.ted.com/talks/daphne_bavelier_your_brain_on_video_games
- Begg, M., Dewhurst, D., & Macleod, H. (2005). Game-informed learning: Applying computer game processes to higher education. *Innovate, 1*(6). Retrieved from <http://www.innovateonline.info/>.
- Bytheway, J. (2013). The online-community culture in massively multiplayer online role-playing games affects language learners' use of vocabulary learning strategies. *World Call: Global perspectives on Computer-Assisted Language Learning, 39-42*.
- Castañeda Peña, H., Salazar Sierra, A., González Romero, N., Sierra Gutiérrez, L.I., & Menéndez Echavarría, A. (2013). Profiling academic research on massively multiplayer on-line role-play gaming (MMORPG) 2000-2009: Horizons for educational research. *Folios, 38*, 75-94.
- Census and Statistics Department. (2009). Thematic household survey report No. 43: Information Technology Usage and Penetration. Hong Kong: Hong Kong SAR Government.
- Chen, M., & Johnson, S. (2004). Measuring flow in a computer game simulating a foreign language environment. Retrieved from http://www.markdangerchen.net/pubs/flow_in_game_simulating_fle.pdf

- Chik, A. (2011). Learner autonomy development through digital gameplay. *Journal of Digital Culture & Education*, 3(1), 30-45.
- Chik, A. (2012). Digital gameplay for autonomous foreign language learning: Gamers' and language teachers' perspectives. In H. Reinders (Ed.), *Digital Games in Language Learning and Teaching*. New York: Palgrave Macmillan.
- Chik, A. (2014). Digital gaming and language learning: Autonomy and community. *Language Learning & Technology*, 18(2), 85-100.
- Cobb, T. and Horst, M. (2011). Does Word Coach Coach Words? *CALICO Journal*, 28(3): 639–661.
- Combs, S. (2008). Current trends in the media industry: File production, television commercials and video games. *The Current and Potential Economic and Fiscal Impacts of Texas' Moving Media Industry*, Texas Comptroller of Public Account report, 4-7.
- Cornillie, F., Thorne, S.L., & Desmet, P. (2012a). ReCALL special issue: Digital games for language learning: challenges and opportunities. *ReCALL Journal*, 24 (3), 243-256.
- De Freitas, S. (2004). *Learning through play: Internal report*. London: learning and Skills Research Centre.
- De Freitas, S., & Levene, M. (2004). An investigation of the use of simulations and video gaming for supporting exploratory learning and developing higher-order cognitive skills. In *Proceedings of the IADIS Cognition and Exploratory Learning in the Digital Age Conference*, Lisbon, Portugal, 12-15 December.
- deHaan, J. (2005). Learning language through video games: A theoretical framework, an evaluation of game genres and questions for further research. In S.P. Schaffer & M.L. Price (Eds.), *Interactive convergence: Critical issues in multimedia* (pp. 229-239). Oxford, UK: Inter-Disciplinary Press.

Dewey, J. (1938). *Experience and education*. New York: Collier Books.

Dörnyei, Z. (2001). *Teaching and researching motivation*. Harlow: Longman.

Dye, M.W. & Bavelier, D. (2010). Differential development of visual attention skills in school-age children. *Vision Research*, 50, 452-459.

Entertainment Software Association (2013). *Industry facts*. Retrieved from http://www.theesa.com/facts/pdfs/esa_ef_2013.pdf

Filsecker, M., and Bündgens-Kosten, J. (2012). Behaviorism, constructivism, and communities of practice: How pedagogic theories help us understand game-based language learning. In: H. Reinders (Ed.), *Digital Games in Language Learning and Teaching*. New York: Palgrave Macmillan.

Folkestad, G. (2006). Formal and informal learning situations or practices vs formal and informal ways of learning. *British Journal of Music Education*, 23, 135-145.

Fox, S. (1997). From management education and development to the study of management learning. In: J. Burgoyne & M. Reynolds (Eds), *Management learning: Integrating perspectives in theory and practice* (pp.21-37). London: Sage.

Game Division. (2010). Retrieved from http://www.isfe.eu/sites/isfe.eu/files/video_gamers_in_europe_2010.pdf

Gardner Inc. Retrieved from <http://www.gartner.com/resId=2606315>

Gee, J. P. (2003). *What video games have to teach us about learning and literacy*. New York: Palgrave Macmillan.

Gee, J.P. (2004). *Situated language and learning: A critique of traditional schooling*. London: Routledge.

- Gee, J. P. (2007). *Good video games and good learning: Collected essays on video games, learning and literacy*. New York, NY: Peter Lang.
- Gee, J.P., & Hayes, E.R. (2010). Public pedagogy through video games: Design, resources & affinity spaces. In J. A. Sandlin, B.D. Schultz & J. Burdick (Eds.). *Public Pedagogy: Education and Learning beyond Schooling* (pp. 185-193). New York: Routledge.
- Gee, J.P., & Hayes, E.R. (2011). *Language and learning in the digital age*. London & New York: Routledge.
- Green, C.S. & Bavelier, D. (2012). Learning, attentional control and action video games. *Current Biology*, 22, 197-206.
- Hennig, M. (2013). Storytelling, rules and society in modern MMORPGs. In: J. P. Tavares-Jones & N. G. Sue (Eds.): *Riding the Hype Cycle: The Resurgence of Virtual Worlds*. Oxford: Inter-Disciplinary Press 2013.
- Ito, M. (2007). Education vs. entertainment: A cultural history of children's software. In K. Salen (Ed.), *The ecology of games: Connecting youth, games, and learning* (pp. 89-116). Cambridge, MA: MIT Press.
- Johnson, D. (1999). A learning model for learning organizations. *Futurics*, 23 (1/2), 74-5.
- Kim, L.S. (1995). Creative games for the language class. *Forum*, 33(1), 35.
- Kongmee, I., Strachan, R., Pickard, A., & Montgomery, C. (2012). A case study of using online communities and virtual environment in massively multiplayer role playing games (MMORPGs) as a learning and teaching tool for second language learners. *International Journal of Virtual and Personal Learning Environments*, 3(4), 1-15.
- Krashen, S.D. (1985). *The input hypothesis: Issues and implications*. London: Longman.
- Lantolf, J.O., & Thorn, S.L. (2006). *Sociocultural theory and the genesis of second language development*. Oxford: Oxford University Press.

- Lengeling, M., & Malarcher, C. (1997). Index cards: A natural resource for teachers. *Forum*, 35(4), 42.
- Livingstone, D.W. (2006). Informal learning: Conceptual distinctions and preliminary findings. In Z. Bekerman, N.C. Burbules, & D. Silberman-Keller (Eds.), *Learning in places: The informal education reader* (pp. 203-227). New York, NY: Peter Lang.
- Long, M.H. (1981). Input, interaction and second language acquisition. In H. Winitz (Ed.), *Native language and foreign language and foreign language acquisition* (Vol. 379, pp. 259-278). New York, NY: Annals of the New York Academy of Sciences.
- Long, M.H. (1991). Focus on form: A design feature in language teaching methodology. In K. De Bot, R.B. Ginsberg, & C. Kramsch (Eds.), *Foreign language teaching in cross-cultural perspective* (pp. 39-52). Amsterdam: John Benjamins.
- MacIntyre, P.D., Baker, S.C., Clément, R., & Conrod, S. (2001). Willingness to communicate, social support, and language-learning orientations of immersion students. *Studies in Second Language Acquisition*, 23(03), 369-388.
- Marsick, V.J. & Watkins, K.E. (2001). Informal and incidental learning. *New Directions for Adult and Continuing Education*, 89, 25-34.
- Peterson, M. (2010a). Massively multiplayer online role-playing games (MMORPGs) as arenas for second language learning. *Computer Assisted Language Learning*, 23(5), 429-439.
- Peterson, M. (2010). Computerized games and simulations in computer-assisted language learning: A meta-analysis of research. *Simulation & Gaming*, 41(1): 72-93.
- Peterson, M. (2012). Learner interaction in a massively multiplayer online role playing game. In H. Reinders (Ed.), *Digital Games in Language Learning and Teaching*. New York: Palgrave Macmillan.

- Pica, T. (1994). Research on negotiation: What does it reveal about second-language learning conditions, processes, and outcomes? *Language Learning*, 44(4), 493-527.
- Pirainen-Marsh, A., & Taino, L. (2009). Other-repetition as a resource for participation in the activity of playing a video game. *The Modern Language Journal*, 93, 153-169.
- Prensky, M. (2001). *Digital game-based learning*. New York: McGraw-Hill.
- Purushotma, R., Thorne, S. L., & Wheatley, J. (2009). *10 key principles for designing video games for foreign language learning*. Retrieved from <http://lingualgames.wordpress.com/article/10-key-principles-for-designing-video-27mkxqba7b13d-2/>
- Rama, P.S., Black, R. W., van Es, E., & Warschauer M. (2012). Affordances for second language learning in World of Warcraft. *ReCALL*, 24, 322-338.
- Rankin, Y.A., Gold, R., & Gooch, B. (2006). 3D role-playing games as language learning tools. Paper presented at the EuroGraphics 2006, Vol. 25, Vienna, Austria, September 4-8, 2006. Retrieved from <http://thegooch.org/>.
- Rankin, Y. A., McNeal, M., Shute, M. W., & Gooch, B. (2008, August). User centered game design: Evaluating massive multiplayer online role playing games for second language acquisition. *Proceedings of the 2008 ACM SIGGRAPH symposium on Video games*, 43-49.
- Rankin, Y.A., Morrison, D., McNeal, M., Shute, M.W. and Gooch, B. (2009). Time will tell: In-game social interactions that facilitate second language acquisition. In R. Michael Young (Ed.), *Conference Proceedings for the 4th International Conference on the Foundations of Digital Games* (pp. 161-168). New York, NY: ACM.
- Reinders, H. (2012). *Digital Games in Language Learning and Teaching*. New York: Palgrave Macmillan.

- Reinders, H., & Wattana, S. (2011). Talk to Me! Games and Students' Willingness to Communicate. *Digital Culture & Education*, 3(1), 4-28.
- Reinders, H., & Wattana, S. (2014). Can I say something? The effects of digital game play on willingness to communicate. *Language Learning & Technology*, 18(2), 101-123.
- Ritterfeld, U., & Weber, R. (2006). Video games for entertainment and education. *Playing Video Games. Motives, Responses, and Consequences*. Mahwah, NJ: Lawrence Erlbaum Associates, 399-413.
- Rogoff, B., Paradise, R., Mejía Arauz, R., Correa-Chávez, M., & Angelillo, C. (2003). First-hand learning through intent participation. *Annual Review of Psychology*, 54, 175–203.
- Ryu, D. (2013). Play to learn, learn to play: language learning through gaming culture. *ReCall*, 25(2): 286-301.
- Schmidt, R.W. (1990). The role of consciousness in second language learning. *Applied Linguistics*, 11(2), 129-158.
- Schrader, P.G., & McCreery, M. (2008). The acquisition of skill and expertise in massively multiplayer online games. *Education Tech Research Dev*, 56, 557-574.
- Sefton-Green, J. (2004). Report 7: Literature review in informal learning with technology outside school. *Futurelab Series*, 7, pp. 2-39.
- Simpson, E. (2005). Evolution in the classroom: What teachers need to know about the video game generation. *TechTrends: Linking Research & Practice to Improve Learning* 49 (5): 17-22.
- Simpson, E., & Stansberry, S. (2008). Video games and teacher development: bridging the gap in the classroom. In C.T. Miller (Ed.), *Games: Purpose and Potential in Education*. Springer, 163-183.

- Silvers, S.M. (1982). Games for the classroom and the English-speaking club. *English Teaching Forum*, 20(2), 29-33.
- Smith, M. (2002). Mary parker follet and informal education. In *The encyclopaedia of informal education*, Retrieved from: www.infed.org/thinkers/et-foll.htm.
- Squire, K. D. (2006). From content to context: Videogames as designed experiences. *Educational Researcher*, 35(8), 19-29.
- Squire, K. D. (2008a). Video-game literacy: A literacy of expertise. In J. Coiro, M. Knobel, C. Lankshear & D. Leu (Eds.), *Handbook of research on new literacies* (pp. 639-673). Mahwah, NJ: Erlbaum.
- Sundqvist, P., & Sylvén, L.K. (2012). World of VocCraft: Computer games and Swedish learners' L2 English vocabulary. In H. Reinders (Ed.), *Digital Games in Language Learning and Teaching*. New York: Palgrave Macmillan.
- Sundqvist, P., & Sylvén, L.K. (2014). Language-related computer use: Focus on young L2 English learners in Sweden. *ReCall*, 26(1): 3-20.
- Suznjevic, M., Matijasevic, M., & Dobrijevic, O. (2008). Action specific massive multiplayer online role playing games traffic analysis: Case study of World of Warcraft. In: NetGames'08, Worcester, MA, USA.
- Statista, (2014). Numbers of world of warcraft subscribers from 1st quarter 2005 to 1st quarter 2014 (in millions). Retrieved from <http://www.statista.com/statistics/276601/number-of-world-of-warcraft-subscribers-by-quarter/>
- Steinkuehler, C. (2008). Cognition and literacy in massively multiplayer online games. In J. Coiro, M. Knobel, C. Lankshear & D. Leu (Eds.), *Handbook of research on new literacies* (pp. 611-634). Mahwah, NJ: Erlbaum.

- Swain, M. (2000). The output hypothesis and beyond: Mediating acquisition through collaborative dialogue. In J.P. Lantolf (Ed.), *Sociocultural theory and second language learning* (pp. 97-114). Oxford: Oxford University Press.
- Sykes, J. M. and Holden, C. L. (2011). Communities: Exploring Digital Games and Social Networking. In: N. Arnold & L. Ducate (Eds.), *Present and Future Promises of CALL: From Theory and Research to New Directions in Language Teaching* (pp. 311-336). Texas: Computer Assisted Language Instruction Consortium.
- Thomas, A. (2007). *Youth online: Identity and literacy in the digital age*. New York, NY: Peter Lang.
- Thomas, M. (2011). Editorial: Digital games and second language acquisition in Asia. *Digital Culture & Education*, 3(1), 1–3.
- Thorne, S.L. (2009). Keynote Address: Language learning as Bricolage in New Media Environments. *Eurocall 2009 Conference*, Valencia, Spain, September 9-12.
- Thorne, S. L. (2012). Gaming writing: Supervernaculars, stylization, and semiotic remediation. In G. Kessler, A. Oskoz & I. Elola (Eds.), *Technology Across Writing Contexts and Tasks*. CALICO Monograph: San Marcos, Texas, 297–316.
- Thorn, Steven L. (2008). Transcultural communication in open Internet environments and massively multiplayer online games. In S. Magnan (Ed.), *Mediating discourse online* (pp. 305-327). Amsterdam: John Benjamins.
- Thorne, S. L., Fischer, I, & Lu, X. (2012). The semiotic ecology and linguistic complexity of an online game world. *ReCALL*, 24, 279-301.
- Thorne, S.L., Black, R. W. & Sykes, J. (2009). Second language use, socialization, and learning in Internet interest communities and online gaming. *Modern Language Journal*, 93, 802–821.
- Thorne, S. L. & Fischer, I. (2012). Online gaming as sociable media. ALSIC [En ligne]:

Apprentissage des Langues et Systèmes d'Information et de Communication, 15(1),
<http://alsic.revues.org/2450>; doi:10.4000/alsic.2450.

- Tychsen, A., Hitchens, M., Brolund, T. & Kavakli, M. (2006). Live action role-playing games: Control, communication, storytelling, and MMORPG similarities. *Games and Culture* 1(3), 252-275.
- Voulgari, I. (2011). Collaborative learning in massively multiplayer online games: A review of social, cognitive, and motivational perspectives. In P. Felicia (Ed.), *Handbook of research on improving learning and motivation through educational games: Multidisciplinary approaches* (Vol.1, pp. 370-394). Hershey, PA: IGI Global.
- Vygotsky, L. (1978). *Mind in society: The development of higher psychological processes*. Cambridge: Harvard University Press.
- Zhao, Y., & Lai, C. (2009). MMORPGs and foreign language education. In R.E. Ferdig (Ed.), *Handbook of research on effective electronic gaming in education* (Vol. 1, pp. 402-421). New York, NY: Information Science Reference.
- Zheng, D., Young, M., Brewer, R., & Wagner, M. (2009). Attitude and self-efficacy change: English language learning in virtual worlds. *CALICO Journal*, 27(1), 205-231.
- Zheng, D., Young, M., Wagner, M., and Brewer, R. (2009). Negotiation for action: English language learning in game-based virtual worlds. *The Modern Language Journal*, 93, 489–511.
- Zheng, D., Newgarden, K., & Young, M. F. (2012). Multimodal analysis of language learning in World of Warcraft play: Languaging as Values-realizing. *ReCALL*, 24, 339-360.

OTHER MEDIA

Coursera. (2012).

Euroversity. (2011). Euroversity Network. Retrieved from <http://www.euroversity.eu/>

Gamers Advancing Meaningful Education. Retrieved from <http://g.a.m.e.shivtr.com/>

NIFLAR. (2009). Retrieved from <http://niflar.eu/>

Ragnarok Online. (2010). Global Playground Gravity

The TILA project. (2013). Retrieved from <http://www.tilaproject.eu/moodle/>

World of Warcraft. (2004). Blizzard Entertainment

Appendix
Online Survey

1. What is your age?
2. What is your gender?
3. What is your first language?
4. Which MMORPG do you play? Name maximal three favourites
5. How many years have you played MMORPGs?
6. How often do you play MMORPG? (hours a week)
7. What is your proficiency in English?
8. For how many years have you been exposed to English?
9. Do you have contact with the English language other than during English classes at school? If yes, where and what?
10. I have improved my vocabulary through quests.
11. I have improved my English through my dialogues with NPCs.
12. I have improved my English through storyline (cut scenes and similar non-interactive sequences).
13. I have improved my English through goal-oriented collaboration (chats with teammates and within a guild).
14. I have improved my English through social interaction (casual, random chats)
15. I have improved my English through role-playing my character(s).
16. I have improved my English through reading and writing in-game letters.
17. I have learned new vocabulary in MMORPGs.
18. I mostly became more fluent in communicating in English.
19. I mostly improved my English <speaking/listening/writing/reading skills>
20. Gaming made me use English more than in a regular class.
21. Do you participate in other gaming-related activities (e.g. walkthroughs reading and sourcing, online discussion forums or bulletin boards, game wiki writing, game wiki writing, game text analysis)? If yes, what and how often?
22. Does gaming and interaction with fellow gamers motivate you to learn a foreign language? Please specify which language(s).
23. Would you rather be grouped or go soloing?
24. What do you think if your language teacher asks you to play a MMORPG as part of an assignment?
25. Overall, how do you feel about communicating in English in a MMORPG context?

