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Abstract

Massively multiplayer online role-playing games (MMORPGs) are identified as valuable arenas for language learning, as they provide access to contexts and types of interaction that are held to be beneficial in second language acquisition research. This paper will describe the development and key features of these games, and explore claims made regarding their value as environments for language learning. The discussion will then examine current research. This is followed by an analysis of the findings from an experimental qualitative study that investigates the interaction and attitudes of Japanese English as a foreign language learners who participated in MMORPG-based game play. The analysis draws attention to the challenging nature of the communication environment and the need for learner training. The findings indicate that system management issues, proficiency levels, the operation of affective factors, and prior gaming experiences appeared to influence participation. The data shows that for the intermediate learners who were novice users, the interplay of these factors appeared to restrict opportunities to engage in beneficial forms of interaction. In a positive finding, it was found that the intermediate and advanced level participants effectively utilized both adaptive and transfer discourse management strategies. Analysis reveals they took the lead in managing their discourse, and actively engaged in collaborative social interaction involving dialog in the target language. Participant feedback suggests that real time computer-based nature of the interaction provided benefits. These include access to an engaging social context, enjoyment, exposure to new vocabulary, reduced anxiety, and valuable opportunities to practice using a foreign language. This paper concludes by identifying areas of interest for future research.

Keywords: *Computer assisted language learning (CALL), digital gaming, interaction, MMORPG.*

There has been an increasing interest expressed in the literature on literacy and computer assisted language learning, of the opportunities for learning provided by digital games (Kam, Kumar, Jain, Mathur & Canny, 2009; Ang & Zaphiris, 2008). Early research in this area conducted by computer-assisted language learning researchers explored the use of stand-alone games (Coleman, 1990; Taylor, 1990). This work, though limited in scope, indicated that participation in gaming offers benefits for language learners (Garcia-Carbonell, Rising, Montero & Watts, 2001). Although research in this area continues (Anderson, Reynolds, Yeh & Huang, 2008; Dehaan, Reed & Kuwada, 2010; Piirainen-Marsh & Tainio, 2009), rapid advances in gaming technologies and the dramatic expansion of the Internet have enhanced the development of network-based role-playing games. In recent years, the emergence of these environments has stimulated interest in network-based gaming within the computer assisted language learning research community. Researchers claim that the communication environments provided by MMORPGs present valuable opportunities for language development (Peterson, 2010b; Throne, Black & Sykes, 2009). Before examining these claims, this discussion will first focus on providing an overview of the development and key features of MMORPGs.

Development and key features of MMORPGs

The development of MMORPGs was influenced by early online adventure games known as MUDs (multi-user dungeons). These network-based games provide access to desktop virtual realities where each player adopts an online character. This entity engages in structured and purposeful interaction involving role-play, problem solving, and strategy development within the context of a persistent virtual world that is based on a fantasy theme. Users can traverse virtual space, communicate in real time with other players, receive assistance from non-player agents, and manipulate virtual objects through the use of typed commands (Bartle, 2003). In MUDs, the ultimate goal of the game, progression through the game user hierarchy to higher levels of status, is achieved in part, through the successful completion of game tasks popularly known as quests, which frequently require teamwork between players with common goals (Nardi & Harris, 2006). The achievement of other in-game activities essential to character status development such as, for example, solving puzzles, engaging in battle, accumulation and trading of virtual commodities, frequently take place within the context of membership of game-based social organizations known as guilds. Guilds are complex social organizations based on the collaborative relationships developed through the teamwork and alliance formation that are required to successfully undertake complex higher-level game tasks. In guilds, experienced members discuss strategies both in-game and on game-specific chat forums. These groups further provide novice users with opportunities to develop their gaming skills through play and collaboration with more experienced players.

The MUD concept has developed a stage further with the emergence of MOOs (multi-user domains object-orientated). These programmable databases enable individual users to engage in content creation within a browser-based MUD world (Hayes & Holmevik, 2001). The features of MUDs and MOOs described above have been incorporated into contemporary MMORPGs. MMORPGs provide players with access to theme-based virtual worlds, real time communication through text chat, opportunities for role-play, guild membership, status advancement, problem solving, and content creation. Moreover, they further utilize recent developments in computer technologies. The use of text chat has been supplemented with voice communication tools. Users of MMORPGs are provided with access to rich 2D and 3D virtual worlds that incorporate realistic high quality graphical interfaces. Text-based characters have been superseded by user controlled individual virtual agents known as avatars. These graphical user embodiments are fully customizable and player controlled. The literature indicates that avatars facilitate a high degree of immersion and emotional investment (Svensson, 2003). They also enhance role-play, telepresence, communication, and the process of community formation between players (Peterson, 2006). Designers have taken advantage of the expansion of the Internet and the emergence of portable communication devices such as tablet computers and smart phones, to increase the scope of network-based gaming. Large numbers of players may now access the most popular MMORPGs such as *World of Warcraft* (Blizzard Entertainment, 2004) from mobile devices, and can interact with players located in different countries and continents. Players are thus provided with access to a growing and highly diverse user community.

The powerful combination of communication tools provided by MMORPGs, coupled to the opportunities they offer for purposeful and highly engaging social interaction with a wide range of native speakers in the target language, have led to claims that they present optimal environments for computer assisted language learning (Bryant, 2006; Peterson, 2010a). The discussion will now examine claims made from a

variety of perspectives, regarding the value of learner interaction in network-based role-playing games. This will be followed by an analysis of current research.

Perspectives on network based gaming in computer assisted language learning

Games have long been a focus of interest for educational researchers as they are widely held to incorporate features that play a central role in learning (Gee, 2003). As has been noted in the literature (Gee, 2005; Shaffer, Squire, Halverson & Gee 2005; Squire & Jenkins, 2004), in well-designed digital games, users must come to understand game rules, and solve problems. In many network-based games users are required to interact collaboratively with fellow players in order to advance in the game and achieve personally meaningful goals. Researchers claim that the purposeful activities made possible by participation in challenging game play may facilitate the cognitive and literacy skills necessary for learning across domains (Gee, 2005; Lankshear & Knoble, 2003). From this perspective, network-based digital games such as MMORPGs offer a beneficial venue for language development, as they provide learners with access to communities of practice that provide situated learning environments where during dialogue with peers, language is provided just in time and in an authentic context (Gee, 2005; Steinkuehler, 2004, 2007). These aspects of game play in MMORPGs, coupled to the sense of ownership and immersion provided by personal avatars, are perceived as supporting the motivation necessary for successful learning (Rankin, Gold & Gooch, 2006a).

Further claims made regarding the value of network-based gaming in computer assisted language learning draw on two influential perspectives in second language acquisition research (Peterson, 2010a). Although the psycholinguistic and sociocultural accounts of second language acquisition draw on differing conceptions of the processes at work in language learning, both share a concern with understanding the role played by interaction (Lafford, 2007). From a psycholinguistic second language acquisition perspective, participation in network-based gaming offers a number of benefits for language learners. The real time target language nature of the interaction, and the presence of native speakers, provides opportunities for the meaning negotiation that is held to facilitate the cognitive restructuring involved in language learning (Peterson, 2010a). The learner-centred nature of the interaction, and the reduction of paralinguistic and status cues may act to reduce the influence of affective factors such as negative attitudes and types of language anxiety that may restrict cognitive processing in face-to-face communication (Horwitz, Horwitz & Cope, 1986; Rankin, McNeil, Shute & Gooch, 2008; Garcia-Carbonell, Rising, Montero & Watts, 2001). Moreover, the computer-based nature of the interaction in MMORPGs where users second language output is displayed onscreen in real time may assist learners by focusing attention on problems in linguistic output, leading to noticing, and the focus on form that plays an important role in second language acquisition (Ellis, 2005; Schmidt, 1992).

According to the sociocultural account of second language acquisition, language is acquired through social interaction (Firth & Wagner, 1997). From the sociocultural perspective, online role-playing games would appear promising venues for language learning for the following reasons. As successful network-based gaming requires collaborative social interaction in the target language as players assist each other in game tasks and activities, MMORPGs provide opportunities for peer assistance involving the co-construction of meaning involving the creation of zones of proximal development (Vygotsky, 1978). Participation in this type of interaction during play and game-related communication with more capable peers enables individual learners to carry out tasks

that they could not undertake unaided. In the sociocultural account of second language acquisition, this type of second language interaction is hypothesized as playing an important role in language learning, as it pushes an individual learner to go beyond their current level of language competence (Bryant, 2006; Thorne, Black & Sykes, 2009). Moreover, as MMORPGs facilitate beneficial social interaction based on teamwork and community membership they may enhance user engagement, enjoyment, and interest. Positive peer feedback and the status rewards gained through successful completion of in-game tasks act to enhance the motivation that plays an important role in successful language learning. The social context provided by online game communities provides additional benefits. These include practice in target language discourse management, and opportunities for risk-taking. Viewed through the lens of interactionist second language acquisition research, MMORPGs may be perceived as providing beneficial opportunities for the development of communicative competence (Bachman, 1990), as they offer access to environments where learners can develop their knowledge of the target language and obtain valuable practice in utilizing this knowledge in a socially appropriate manner.

Research on the use of MMORPGs in computer assisted language learning

A pilot study conducted by Rankin, Gold, and Gooch (2006b), investigated learner interaction in the MMORPG *Ever Quest II* (Sony Online Entertainment, 2004). The subjects were four intermediate and advanced level EFL students who after training, undertook eight gaming sessions held over a period of four weeks. The researchers in this study attempted to confirm if participation would enhance English language proficiency and knowledge of new vocabulary. This study further examined the effectiveness of the in-game learning support features. The findings indicated that interaction with non-player characters increased target language vocabulary output by 40%. Data also showed enhanced understanding of new vocabulary after conversation with non-player characters. Moreover, social interaction with player characters produced significant increases in the quantity of target language messages produced. Learner feedback was largely positive, indicating that the game was motivating, and provided adequate language learning support for the majority of the participants.

Learner interaction in *Ever Quest II* was further examined in research undertaken by Rankin, Morrison, McNeal, Gooch, and Shute (2009). This study focused on eighteen EFL learners and eight native speakers. The subjects formed three groups. One group of learners played the game by themselves, another group played with native speakers, and the remainder of the participants undertook conventional classroom instruction. Data analysis revealed that learners who played the game with native speakers, or by themselves, displayed significantly higher rates of comprehension of twelve game related low frequency vocabulary items than the group that did not play the game. This study also focused on exploring the in-game communication patterns that occurred during game play involving learners and native speakers. The data contained evidence showing the presence of communication patterns characteristic of collaborative social interaction. Significant patterns in the data included the appropriate use of greetings and leave-takings, clarification requests, and the exchange of interpersonal information. The data showed that the learners experienced difficulties in the game, and that the native speakers provided assistance on aspects of game play. Although the native speaker participants took the lead in initiating and maintaining the interaction, as the project progressed, the learners significantly increased their target language output through dialogue with their native speaker interlocutors.

Research reported by Thorne (2008), examined learner participation in the popular MMORPG *World of Warcraft*. This study focused on the in-game and game related interaction of a non-native speaker of English located in the Ukraine, and a native speaker of English based in the United States. During the interaction, English was the primary language used for communication. Analysis of chat transcripts, MSN messenger data, and researcher observation, revealed that both inside and outside of the game, the subjects engaged in collaborative target language dialogue that involved types of interaction held to facilitate language learning. These included self and other-initiated correction, requests for assistance, repair sequences, the development of a collaborative relationship based on the exchange of interpersonal information, and the use of humour. The positive and engaging nature of the interaction was manifest in the high degree of motivation observed by the researcher.

Methodology

Research Questions. As the discussion in the previous section has shown, current research on the use of MMORPGs in computer assisted language learning is in an emergent state. To date, there remains a dearth of learner-based studies conducted outside North America. At present, there is no published research that investigates the use of MMORPGs by Japanese English as a foreign language learners located in Japan. There is limited data on factors that play an important role in language learning, such as, for example, learner attitudes (Savignon & Wang, 2003). Moreover, additional data is required on largely unexplored areas including novice learners in-game interactions, the influence of variables such as training, and prior gaming experiences. The purpose of this experimental study is to contribute to the literature by answering the following research questions:

1. What are the significant features of learner interaction?
2. What are learner attitudes towards game play?

Participants. The learners who took part in this study were seven Japanese English as a foreign language students located at a university in Japan. All of the learners participated as volunteers. A pre-study questionnaire was administered and responses are provided in table 1. As table one shows, six of the participants were female and ages ranged from twenty four to twenty seven years. The median age was twenty-five years. The participant's English language proficiency scores on the TOEFL examination ranged from intermediate to advanced level. In terms of gaming experience, four learners were novice gamers. Three of the participants claimed some prior experience of online game play. Of this later group, two claimed to have extensive experience of online gaming while one learner claimed to have undertaken online game play on occasion. All the participants claimed to be experienced computer users.

Table 1: Learner background information

	gender	age	language level	gaming level
Learner 1	male	24	advanced	experienced
Learner 2	female	24	advanced	experienced
Learner 3	female	27	advanced	experienced
Learner 4	female	24	intermediate	novice
Learner 5	female	25	intermediate	novice
Learner 6	female	24	intermediate	novice
Learner 7	female	24	intermediate	novice

Procedures. This research was conducted in the spring semester (April through July) of 2010. An orientation session was held, in which the learners were provided with an overview of the concept, commands, and communication features of the game. Each of the participants then took part in two separate gaming sessions held one week apart in a MMORPG. The duration of each session was approximately 60 minutes. However, the length of each session varied somewhat due to instances of lateness. As university network firewalls prevented access, the participants accessed the MMORPG using their own laptops from separate off-campus locations.

Figure 1: The *Allods Online* interface

Data collection and analysis. In order to obtain a variety of perspectives on the data, and to support triangulation, the following sources were collected. The researcher, who was present in the game during each session and acted as an observer, recorded learner text chat interaction from each of the sessions. Significant instances of interaction were recorded in field notes. A post-study questionnaire was implemented and this was supplemented by informal post-study interviews. Written consent was obtained for the collection and use of participant data. The primary data analysis tool in this experimental study was discourse analysis of text chat transcripts, supplemented by researcher observation, and learner feedback.

Research venue: *Allods Online*. The MMORPG utilized in this research *Allods Online* (Astrum Nival, 2010), was selected as the venue for the following reasons. *Allods Online* provides players with free access to a fantasy world incorporating commercial level high quality 3D graphics, in which users can undertake game activities, and engage in real time interaction with player and non-player agents. A screen capture of the game interface is shown in figure one.

Figure 2: Player avatars



Another reason for selecting this MMORPG was the availability of customizable player avatars. A screen capture of avatars created by participants in this research may be seen in figure two. Additional advantages included access to a range of character levels, and in-game activities such as quests that have been noted previously. Furthermore, the presence of extensive player support features including an extensive beginners guide, user forum, and frequently asked questions page made this game a suitable venue for the participants. These factors, coupled to the robust and engaging nature of the platform led to the selection of *Allods Online* as the venue for this research.

Findings

Data analysis revealed the presence of findings relevant to the research questions. In the following discussion, data excerpts, researcher observation, and learner feedback will be used to report on and justify the findings. Transcript data has been edited to remove messages that are not relevant to the interaction under discussion and all errors are the participants'. In order to provide for anonymity, each learner and player is referred to by a pseudonym.

Interactional features

Commands, communication and avatar utilization. The data showed interesting features with regard to learner interaction in the game. Analysis of the data showed that an area which proved challenging for the novice learners was dealing with the communication system. As can be seen in figure 1, *Allods Online* provides players with

access to an interface-based chat tool where messages are posted in real time in the order they are received by the server. In the onscreen textbox, player messages are frequently intermixed with automatically generated messages produced by non-player agents, as can be observed in the following data excerpt collected in the second session:

- (1)
 1. Agent: welc0me to allods 4 gold, com 200g0ney6.
 2. Player: can someone help me for lab13
 3. Agent: welc0me to g0ldce0, com 200g0ney6.
 4. Agent: www.goldicq.com Selling the cheapest g0ld 55mil 18\$
 5. Player: dps lfg heroic dbc
 6. Learner 5: does anyone here know where we can meet Magic Elementals?
 7. Agent: www.goldicq.com Selling the cheapest g0ld 55mil 18\$
 8. Agent: welc0me to allods 4 gold, com 200g0ney6. 28 euur
 9. Player: scout lfg heroics
 10. Agent: welc0me to thep0werlevel, c0 m 10% Bonus 200g0ney6.28euur
 11. Player: Scout LF heroics whisp me
 12. Agent: welc0me to allods 4 gold, com 200g0ney6. 28 euur

As excerpt one shows, in managing their interaction, players must monitor messages that scroll down the screen in real time. Furthermore, they must make sense of utterances that frequently include game related communication conventions. As can be seen in the above excerpt, these include the use of low frequency vocabulary (Nation, 2001) that appear infrequently in written texts such as the words *scout* and *heroics* (line 11), abbreviations (lines 5, 9 and 11), and game specific terminology (lines 2, 6, 10). The data showed that faced with this potentially challenging communication environment, the learners made efforts to communicate with other players and undertake game tasks. In this context, data analysis confirmed the presence of several significant interactional features relating to game commands, communication system management, and avatar utilization.

Transcript analysis indicated that the four participants who were novice gamers immediately encountered difficulties with the use of commands and the communication features of *Allods Online*. The researcher had anticipated that the orientation session would have resolved any issues relating to these areas. However, in the case of these participants, this assumption proved unfounded. In the early stages of the first session, it became apparent that the learners who lacked gaming experience encountered difficulties in the appropriate use of commands, and communicating with other players, as may be observed in the following messages:

- (2) Learner 4: how do i chat?
- (3) Learner 5: how does this work?
- (4) Learner 3: how to talk with other people?

Researcher observation confirmed that as the session progressed, these problems, in the case of three participants, were largely resolved. Moreover, by the second session, it became clear that these learners were able to deal successfully with the communication environment, and utilize game commands in an appropriate manner. However, one of the novice users, learner seven, experienced persistent difficulties in dealing with the environment during the first session. After several failed attempts to participate, it was

observed that this learner took little further part in the proceedings. The data showed that this behaviour continued into the second session. In contrast, analysis of transcript data confirmed that the participants who claimed to be experienced players encountered no major difficulties in these areas. The data further indicated that the novice learners also experienced challenges with regards to another aspect of the game.

Another area that proved challenging to the novices was avatar manipulation. As noted previously, *Allods Online* provides access to player controlled individual avatars that have the ability to move and manipulate virtual objects. In the first session, the data showed that the novice learner group took a considerable period to explore these aspects of avatar manipulation as can be seen below:

- (5) Learner 6: it is difficult to move myself
- (6) Learner 5: how can i jump
- (7) Learner 4: i dont know why but i cannot try any move

As was the case with command and communication problems, the data confirmed that with the exception of learner seven, as the first session came to a close, this issue had largely been overcome. In contrast to the novice participants, it was observed that from the outset, the participants who claimed prior online gaming experience learners one, two, and three, encountered no difficulties in utilizing their avatars.

Learner strategies. Data analysis revealed that in both sessions the novice and experienced learners utilized distinct strategies in order to manage their text chat interaction. One group of strategies identified in the data represented transfers of behaviours designed to facilitate social interaction in face-to-face communication. Transfer strategies utilized by the participants focused on the use of types of positive politeness designed to show familiarity, rapport, and signal a desire to obtain group membership (Brown & Levinson, 1987). Noteworthy instances of positive politeness identified in the transcript data included the appropriate use of informal greetings (excerpt eight), leave-takings (excerpt nine), the occasional use of humour (excerpt ten), and small talk incorporating informal language (excerpt eleven):

- (8)
 - 1. Learner 6: hi
 - 2. Player: hello
- (9)
 - 1. Learner 1: thanks! see you
 - 2. Player: see you again later
- (10)
 - 1. Learner 2: You must be a politican or something haha (3 lines of text)
 - 2. Player: No sir, but I do enjoy politics heh
- (11)
 - 1. Player: There's always so much work to do
 - 2. Learner 4: yeah to much!

Through the use of these strategies, the participants attempted to signal interest, minimize social distance, and build positive collaborative relationships with fellow players. As will be shown at a later stage of this discussion, although these efforts were not always successful, the use of positive politeness strategies mirrors findings reported elsewhere (Rankin et al., 2009), and demonstrates that the majority of the participants

made efforts to actively engage in collaborative social interaction with other players during game play.

Research on interaction in MUD worlds has shown that language learners employ adaptive strategies in order to provide feedback (Peterson, 2008). The data contained evidence of strategies designed to signal feedback and emotional states in an environment where the communication is carried out by means of typed text and the social context cues that influence face-to-face interaction are greatly reduced. Adaptive feedback strategies identified in the data focused on combinations of keyboard symbols used to display emotional states. An instance of this type of strategy can be seen in excerpt twelve:

- (12) 1. Player: ideology..i ike that name :-)
 2. Learner 2: Thanks ^_-

As the above excerpt shows, learner two utilizes an emoticon that incorporates the use of several keyboard symbols in order to display positive feedback. Further adaptive strategies that appeared in the data reflect the real time computer-based nature of the interaction. These include time saving devices that involved the use of abbreviation and acronyms (excerpt thirteen), the splitting of long turns as a means to attract attention, and supply additional information (excerpt fourteen):

- (13) Learner 4: u are funny LOL!

- (14) Agent: Today is another wonderful day!
 Learner 3: seems like this is the only place we can talk to people
 Learner 3: nobody has ever answered me outside of this place
 Player: hi
 Learner 3: hello! how r u?

The data shows how the participants took an active role in managing their target language interaction. Moreover, the above excerpts draw attention to the manner in which the learners adapted their communicative practices in order to deal with the real time computer-based nature of the interaction. Data analysis further revealed how the learners effectively utilized discourse management strategies in combination in order to achieve successful interaction.

Successful interactions. The data contained evidence of interactions between the participants and their interlocutors where strategies were utilized in combination in order to facilitate successful interaction. This interaction focused on aspects of in-game communication and activities. A typical example occurred during the early stages of the first session, where learner four, a novice user, made a help request focusing on in-game communication directed towards the other players in her location:

- (15) 1. Learner 4: does anyone know how to talk directly to other people?
 2. Player 1: whispers: whispering
 3. Learner 4: thanks. but how can i whisper?
 4. Player 2: whispers: like this?
 5. Learner 6: yeah. do we need some special commands?
 6. Player 2: whispers: one way is to click on person's name in chatbox
 7. Player 3: whispers: click on the character and talk
 8. Player 4: click on his name

9. Player 4: write whisper <name>
10. Learner 4: wow that must be helpful
11. Learner 4: thank you so much for your help

As may be observed in excerpt fifteen, the request made by learner four in line one meets with a swift response. In line two, player one suggests use of the whispering command, which facilitates private communication between players. In the next turn, learner four responds using positive politeness, and then signals that further assistance is required. This appeal to the group elicits helpful feedback from player two. In line five, learner six first provides positive feedback in the form of an informal utterance signalling agreement, and then makes an additional request. In the following four turns, this request is met with appropriate feedback on effective use of the whisper command from three players. In line ten, learner two signals that the problem has been successfully resolved, through the use of an utterance incorporating positive feedback. This is followed by a rare instance of negative politeness, where formal language is used to emphasize social distance, and respect for the addressee (Brown & Levinson, 1987).

Another instance of a successful interaction involving a positive response to a request for help occurred in session two. In this interaction, learner one who was an experienced gamer, makes a request relating to game navigation and terminology:

- (16)
1. Learner 1: does anybody know what and where "giant city termite" is?
(5 lines of text)
 2. Player: whispers: pull out your map, they should be south of you
(5 lines of text)
 3. Learner 1: oh thanks alot! (1 line of text)
 4. Player: whispers: np

As excerpt sixteen shows, this utterance includes an interesting adaptive strategy, namely, the use of quotation marks as a means to display emphasis and attract attention. After a delay of five turns, this request for assistance meets with a helpful response from another player that contains accurate feedback. After a further delay, in line three, learner five signals that the problem has been resolved through the use of positive feedback and positive politeness.

Failed communication attempts. Although most interactions involving participants were conducted successfully, the data also showed that, on occasion, a request for assistance did not meet with a response. Observation and transcripts revealed that failed communication attempts occurred involving both novice and experienced participants. An instance where a help request made by experienced learner was ignored occurred in session one:

- (17)
1. Player 1: the league will soon crumble
 2. Learner 3: can you help me out?
 3. Player 2: Are there any kind souls that would help me out?
 4. Player 2: Are there any kind souls that would help me out?
 5. Player 6: I like that
 6. Player 3: Spare a coin for some food..?

As the above interaction shows in line two, learner three makes a help request incorporating politeness that is directed at another player. However, as can be observed in the following turns, this request does not meet with a response.

Moreover, there were instances when attempts to elicit a response from the group were unsuccessful. An instance of this phenomenon occurred during session two, when learner four attempted to contact other players through the use of an informal greeting:

- (18)
1. Player 1: is a Reaver better than a Brute?
 2. Learner 4: hi all
 3. Agent: welc0me to allods 4 gold, com 200g0ney6. 28 eeur
 4. Agent: welc0me to allods 4 gold, com 200g0ney6. 28 eeur
 5. Agent: welc0me to thep0werlevel, c0 m 10% Bonus 200g0ney6.28eeur
 6. Agent: www.goldicq.com Selling the cheapest g0ld 55mil 18\$
 7. Player 2: Reaver is tank, brute is damage dealing
 8. Agent: welc0me to allods 4 gold, com 200g0ney6. 28 eeur

As can be seen in the above excerpt, the attempt by learner four to elicit a reaction from other players meets with no response. Data analysis confirmed that in both of the sessions there were occasions in which requests for help or attempts to elicit interaction from learners met with no response. Possible explanations for this finding are difficult to ascertain with certainty from the transcripts. However, researcher observation indicated that the large number of players present frequently produced instances were messages scrolled rapidly. This may have led to situations where learner comments were missed by other players. Moreover, the researcher observed that on occasion, particularly during the first session, the novice learners did not respond to player messages promptly. This situation appeared in some instances, to have resulted in players moving on to contact other users.

Learner attitudes and perceptions

In order to obtain data on learner attitudes, a questionnaire was administered after the second session. The questionnaire was completed by six of the participants, and contained ten Likert scale statements. The learners were requested to select one response from the following: 1 strongly disagree, 2 disagree, 3 no opinion, 4 agree, and 5 strongly agree. Analysis of the responses is provided in table 2. The first three questions focused on eliciting learner feedback regarding usability and communication features. In response to question one, the responses averaged 2.7 this indicates that the majority of the learners experienced problems playing the game. Researcher observation and transcript data confirm this finding. However, as has been noted previously, the majority of participants with one exception were eventually able to overcome interface and system issues by the second session. In reaction to question two, the participants averaged 4.0. This finding is not unexpected and draws attention to the problems faced by the lower level learners who, on occasion, faced difficulties in dealing with the fast paced nature of the real time interaction. Answers to question three averaged 4.8, this finding suggests that the availability of personal avatars strongly enhanced the level of telepresence experienced.

Table 2: Mean scores on post-study questionnaire

Statement	
1. I had no problems playing the game	2.7
2. It was sometimes difficult to follow the interaction	4.0
3. Having my own avatar made me feel more present	4.8

4. I could express my opinion more freely than in a regular class	3.8
5. I could learn new words and expressions	3.6
6. I could work at my own pace	2.4
7. Playing the game was not so useful	2.1
8. I enjoyed playing the game	3.8
9. Chatting in the game was a good way to improve my English	3.6
10. I would like to play the game again in the future.	3.8

Questions four through eight explored attitudes toward specific aspects of the interaction. In response to question four, the participants averaged 3.8, a finding which suggests that the learners found playing the game somewhat conducive to free expression. This positive finding draws attention to the value of online gaming in Japan, where the literature identifies reticence and associated status concerns among peer groups as major factors inhibiting learner performance in institutional contexts (Anderson, 1993). Responses to question five averaged 3.6, indicating that in the view of a majority of the learners, playing the game facilitated vocabulary learning. The response to question six was 2.4. The level of disagreement with this statement highlights the challenging nature of the interaction particularly for the lower level learners. There was general disagreement with statement seven where responses averaged 2.1, a finding which confirms that the learners viewed playing the game as a useful activity. In a further positive finding, there was general agreement with statement eight that playing the game was enjoyable, where responses were 3.8. The final two questions were designed to obtain feedback on the overall benefits and issues raised by participants in this research. The somewhat positive reaction to statements nine and ten, where the mean scores were 3.6 and 3.8 respectively, draws attention to the beneficial effects of participation, and reflects a general desire to play the game in the future.

In order to obtain additional perspectives on learner attitudes, post-study interviews were conducted. In their comments, the learners drew attention to a number of issues relating to the challenging nature of the environment provided including initial difficulties in avatar, command, and communication system utilization. In this regard, the interviews revealed the following comments:

At first the control of the character (e.g. Equipment, fight or item use) seemed very difficult, as there was not much support on how to do it.

Most of the other games I play are simple enough to manage without any help, but this one required me to consult with them so many times, which made me annoyed.

In their feedback, the novice users claimed that after the first session, they consulted the online beginners guide and frequently asked questions page, and that the information provided assisted them in better utilizing their avatars and the communication system. These claims appear borne out by the data. As has been noted at a previous stage of this discussion, transcript data and researcher observation confirmed that with the exception of one novice, the remainder of the participants displayed a higher level of comfort with the communication system, commands, and avatar manipulation by the second session. Other issues that arose in the discussion included problems caused by a lack of prior gaming experience, knowledge of gaming culture, and activities. The novice participants were most vocal in raising these issues. These learners claimed that the above factors appeared to limit the opportunities for interaction:

My lack of experience and knowledge in the online gaming culture. I was there to talk, but others were there to play (to trade, to fight, etc).

I saw many people chatting for the purpose of the game (selling and buying items). I was there to have a conversation and people around me did not seem to want to have a conversation.

The participants also commented positively on certain aspects of game play. One area where the interaction appeared to be beneficial was awareness raising relating to new vocabulary. In their feedback, both the advanced and intermediate level learners identified a number of previously unknown words including, *whisper, cheers, spell, interrupted, village, quest* and *damn*. Although following the interaction could be challenging, the computer-based nature of gaming provided a number of benefits. Two learners commented that they made use of scrolling in order to revisit previous utterances and monitor the ongoing interaction:

Sometimes I forgot what the partner had said before, so I had to scroll back to keep up with the conversation.

I sometimes scrolled the text back and looked at the whole interaction, just thinking wow this is what I did.

Several participants stated that they reviewed their transcripts after each session. They also claimed that taking part in real time interaction helped the development of reading and discourse management skills. The learners further commented on the interesting and stimulating nature of the interaction. Moreover, the anonymity provided appeared to reduce anxiety and status concerns:

I thought it is fun to have your avatar with new name.

Learners do not have any reasons to be afraid of making mistakes when they chat in English.

Finally, a high level learner commented positively on the opportunities provided to interact with native speakers:

I was delighted at establishing a successful conversation between me and a native speaker.

Conclusion

As an experimental study, this research was subject to limitations. Due to factors outside the researcher's control, it was not possible to schedule additional training and game sessions. Moreover, the number of participants was limited. These factors require acknowledgement in any interpretation of the findings. However, this study nonetheless has provided interesting findings. Although the experimental nature of this research precludes any definitive conclusions regarding the value of participation in MMORPGs for foreign language learning, the analysis draws attention to a number of significant areas.

In the context of answering the research questions, the data suggests that learner performance and attitudes toward gaming appear heavily influenced by prior gaming experiences and proficiency level. Researcher observation and transcript data indicate that in the initial stages of this research, the learners of lower level language proficiency who possessed no prior experience of playing a MMORPG, experienced difficulties in

managing the interface and contributing to the interaction. Although these difficulties were, with one exception, overcome by the second session, the presence of technostress and the negative feedback provided by a minority of these learners remain a cause for concern. These significant findings draw attention to the need for sufficient learner training. They suggest that the communication environment provided can be challenging, and may be most appropriate for learners who possess higher levels of language proficiency.

In contrast, in a significant finding, the data further shows that the learners who possessed prior experience of online gaming, and who were of a higher proficiency level, successfully engaged in coherent target language interaction with native speakers through the use of discourse management strategies. These included the use of adaptive strategies appropriate to the online medium. Types of strategy identified in the data that have not been reported in the literature on language learner interaction in MMORPGs include the use of keyboard symbols to display feedback, abbreviations, acronyms, quotation marks, and the splitting of long turns. In contrast to findings reported elsewhere (Rankin et al., 2009), the transcript data analysed in this discussion demonstrates that this group did not simply follow the lead of their interlocutors; they took active responsibility for managing their interaction. The findings confirm that these learners not only initiated successful target language interactions with other players, they actively engaged in types of collaborative social interaction involving target language dialogue that are held to be beneficial in the sociocultural account of second language acquisition (Thorne, 2008). They made frequent and effective use of positive politeness incorporating greetings, leave-takings, humour, small talk, and informal language in order to create a supportive context conducive to continuing interaction.

In a further positive finding, the participants provided broadly positive feedback. This indicates that for the majority, participation provided valuable fluency practice in managing purposeful target language interaction, and also provided exposure to new vocabulary. The computer-based nature of the interaction offered additional benefits. Learner feedback indicates that the availability of scrolling appears to facilitate monitoring. Furthermore, the participants claimed that the presence of personal avatars enhances immersion and engagement. In addition, the anonymity afforded by the use of avatars and text reduces social context cues facilitating self-expression, motivation, and the reduction of anxiety. This latter finding emphasizes an advantage of participation in MMORPG-based interaction in the Japanese educational context, where learner reticence and status concerns frequently represent major barriers to learning (McVeigh, 2002). Moreover, the claim made by some learners that they studied their transcripts on their own initiative, suggests that participation in online gaming may facilitate the autonomy that plays an important role in language learning (Little, 1991).

The preliminary findings reported here though not conclusive, are encouraging, and draw attention to the need for further research. A number of promising areas for future investigation highlighted by the findings reported here relate to the role played by proficiency level, and prior gaming experiences. Additional longitudinal studies are required to establish if commercial MMORPGs are viable platforms for computer assisted language learning projects involving learners with limited experience of online gaming, and intermediate levels of language proficiency. Investigation of the role played by learner training, will assist in clarifying the influence of this factor on the performance of the above learner groups. Large-scale investigations of learner attitudes will shed new light on learner experiences. The role of “modding”, that is, the modification of existing game platforms to better meet the specific needs of language learners presents another area of research rich in possibilities. Preliminary work focusing on the creation of an MMORPG designed to facilitate the learning of Chinese as a

foreign language has recently been reported (Zhao & Lai, 2009). Further investigation of this approach, offers the prospect of gaining important insights into how MMORPGs can be most effectively utilized in order to provide the conditions in which language development may be facilitated.

References

- Anderson, F. E. (1993). The enigma of the college classroom: Nails that don't stick up. In P. Wadden, (Ed.), *A handbook for teaching English at Japanese colleges and universities* (pp.101-110). New York: Oxford University Press.
- Anderson, T.A.F., Reynolds, B.L., Yeh, X-P., & Huang, G-Z. (2008). Video games in the English as a foreign language classroom. In M. Eisenberg, Kinshuk, M. Chang, R. McGreal (Eds.), *Proceedings of second IEEE international conference on digital games and intelligent toys based education* (pp. 188-192). Banff, Canada: IEEE.
- Ang, C., & Zaphiris, P. (2008). Computer games and language learning. In T. Kidd & H. Song (Eds.), *Handbook of research on instructional systems and technology* (pp.1-31). Hershey: Information Science Reference.
- Bachman, L. (1990). *Fundamental considerations in language testing*. Oxford: Oxford University Press.
- Bartle, R. (2003). *Designing virtual worlds*. California: New Riders Publishing.
- Brown, P., & Levinson, S. (1987). *Politeness: Some universals in language usage*. Cambridge: Cambridge University Press.
- Bryant, T. (2006). *Using World of Warcraft and other MMORPGs to foster a targeted, social, and cooperative approach toward language learning*. Retrieved June 21, 2009 from <http://www.academiccommons.org/commons/essay/bryant-MMORPGs-for-SLA>
- Coleman, D. W. (1990). Computerized simulations and games for language learning: Part 1. *Simulation & Gaming: An Interdisciplinary Journal of Theory, Practice and Research*, 21(4), 443-444.
- dehaan, J., Reed, W.M., & Kuwada, K. (2010). The effect of interactivity with a music video game on second language vocabulary recall. *Language Learning & Technology*, 14(2), 74-94.
- Ellis, R. (2005). Principles of instructed language learning. *System*, 33(2), 209- 224.
- Firth, A. & Wagner, J. (1997). On discourse, communication, and (some) fundamental concepts in SLA research. *The Modern Language Journal*, 81(5), 285-300.
- Garcia-Carbonell, A., Rising, B., Montero, B., & Watts, F. (2001). Simulation/gaming and the acquisition of communicative competence in another language. *Simulation & Gaming: An Interdisciplinary Journal of Theory, Practice and Research*, 32(4), 481-491.
- Gee, J.P. (2003). *What videogames have to teach us about learning and literacy*. New York: Palgrave Macmillian.
- Gee, J. P. (2005). *Why are video games good for learning?* Retrieved November 9, 2009 from <http://academiccolab.org/resources/documents/MacArthur.pdf>.
- Hayes, C., & Holmervik, J.R. (Eds.). (2001), *High wired: On the design, use and theory of educational MOOs*. Michigan: The University of Michigan Press.
- Horwitz, E. K., Horwitz, M. B., & Cope, J. (1986). Foreign language classroom anxiety. *The Modern Language Journal*, 70(2), 125-132.
- Kam, M., A., Kumar, A., Jain, S., Mathur., A., & Canny, J. (2009). Improving literacy in rural India: Cellphone games in an after-school program. In R. Heeks & M. Bernardine Dias (Eds.), *Proceedings of the ICTD Conference on Information and Communication Technologies and Development* (pp. 139-149). Qatar: Carnegie Mellon University.

- Lafford, B.A. (2007). Second language acquisition reconceptualized? The impact of Firth and Wagner (1997). *The Modern Language Journal*, 91(5), 735-756.
- Lankshear, C. & Knobel, M. (2003). *New literacies: Changing knowledge and classroom learning*. Buckingham: Open University Press.
- Little, D. (1991). *Learner autonomy 1: Definitions, issues and problems*. Dublin: Authentic.
- McVeigh, B. J. (2002). *Japanese higher education as myth*. New York: East Gate.
- Nardi, B., & Harris, J. (2006). Strangers and friends: Collaborative play in World of Warcraft. In J. Turner & R. Kraut (Eds.), *Proceedings of computer supported collaborative work '06* (pp. 149-158). New York: ACM Press.
- Nation, I.S. P. (2001). *Learning vocabulary in another language*. Cambridge: Cambridge University Press.
- Peterson, M. (2006). Learner interaction management in an avatar and chat-based virtual world. *Computer Assisted Language Learning*, 19(1), 79-103.
- Peterson, M. (2008). An investigation of learner interaction in a MOO-based virtual environment. Unpublished doctoral thesis the University of Edinburgh.
- Peterson, M. (2010a). Massively multiplayer online role-playing games (MMORPGs) as arenas for language learning. *Computer Assisted Language Learning*, 23(5), 429-439.
- Peterson, M. (2010b). The use of computerized games and simulations in computer assisted language learning: A meta-analysis of research. *Simulation & Gaming: An Interdisciplinary Journal*, 40(1), 863-885.
- Piirainen-Marsh, A., & Tainio, L. (2009). Other-repetition as a resource for participation in the activity of playing a video game. *The Modern Language Journal*, 93(2), 153-169.
- Rankin, Y., Gold, R., & Gooch, B. (2006a July). *Evaluating interactive gaming as a language learning tool*. Paper presented at SIGGRAPH 2006, Boston, MA.
- Rankin, Y., Gold, R., & Gooch, B. (2006b). 3D Role-playing games as language learning tools. In E. Gröller & L. Szirmay-Kalos (Eds.), *Proceedings of EuroGraphics 2006*, 25(3), New York: ACM.
- Rankin, Y., McKenzie, M., Shute, M.W., & Gooch, B. (2008). 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* (pp. 43-49). New York: ACM.
- Rankin, Y., Morrison, D., McKenzie, M., Gooch, B., & Shute, M. (2009). Time will tell: In-game social interactions that facilitate second language acquisition. In R. Michael Young (Ed.), *Proceedings of the 4th international conference on foundations of digital games* (pp. 161-168). New York: ACM.
- Savignon, S.J., & C.Wang. (2003) Communicative language teaching in EFL contexts: Learner attitudes and perceptions. *International review of applied linguistics and language teaching*, 41(3), 223-249.
- Schmidt, R. (1992). Awareness and second language acquisition. *Annual Review of Applied Linguistics*, 13, 206-226.
- Shaffer, D. W., Squire, K.D., Halverson, R., & Gee, J.P. (2005). Video games and the future of learning. *Phi Delta Kappan*, 87(2), 105-111.
- Squire, K. & Jenkins, H. (2004). Harnessing the power of games in education. *Insight*, (3)1, 5-33.
- Steinkuehler, C. A. (2004). Learning in massively multiplayer online games. In Y.B. Kafai, W.A. Sandoval, N. Enyedy, A.S. Nixon & F. Herrera (Eds.), *Proceedings of the 6th international conference on learning sciences* (pp. 521-528). Santa Monica: International Society of the Learning Sciences.
- Steinkuehler, C. (2007). Massively multiplayer online gaming as a constellation of literacy practices. *E-Learning*, 4(3), 297-318.
- Svensson, P. (2003). Virtual worlds as arenas for language learning. In U. Felix (Ed.),

- Language learning on-line: Towards best practice* (pp. 123-142). Amsterdam: Swets & Zeitlinger.
- Taylor, M. (1990). Simulations and adventure games in CALL. *Simulation & Gaming: An Interdisciplinary Journal*, 21(4), 461-466.
- Thorne, S. 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., Black, R.W., & Sykes, J.M. (2009). Second language use, socialization, and learning in Internet interest communities and online gaming. *The Modern Language Journal*, 93, 802-821.
- Vygotsky, L.S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge: Harvard University Press.
- Zhao, Y., & Lai, C. (2009). Massively multi-player online role playing games (MMORPGS) and foreign language education. In Ferdig, R. (Ed.), *Handbook of research on effective electronic gaming in education* (pp. 402-421). New York: IDEA Group.

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