LEVELING UP LANGUAGE PROFICIENCY THROUGH MASSIVE

MULTIPLAYER ONLINE ROLE PLAYING GAMES:

OPPORTUNITIES FOR ENGLISH LEARNERS

TO RECEIVE INPUT, MODIFY OUTPUT,

NEGOTIATE MEANING, AND EMPLOY

LANGUAGE-LEARNING

STRATEGIES

by

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STATEMENT OF THESIS APPROVAL

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ABSTRACT

The purpose of this study is to gain a better understanding of the usefulness of online videogames for promoting second language (L2) acquisition. To achieve this goal, I analyzed the specific types of interaction that take place between English language learners while playing the online videogame entitled *Guild Wars 2*. Previous research has shown that there can be positive results on L2 acquisition from interaction that occurs while playing video games known as massive multiplayer online role-playing games (MMORPGs). MMORPGs immerse players in virtual worlds that are populated by hundreds of other people, and all are participating in the game in real time. Learners who opt to play the game in a foreign or second language (L2) are exposed to target language input in a context-rich environment in which they can interact freely with native-speakers and other language learners. Although research into the benefits of MMORPGs for L2 learners is still relatively new, the findings so far have been overwhelmingly positive. This study aims to move beyond the question of *whether* MMORPGs are beneficial and instead asks why and how they may be beneficial. The data from this study are gathered from the recorded screens of 3 volunteer ESL students as they interact in *Guild Wars 2* for a period of about 10 hours over a 5-week period. In-game interaction is analyzed and placed into categories that are meant to capture the number and types of opportunities for negotiation of meaning and types of learning strategies used. This study suggests that MMORPGs are beneficial to L2 acquisition because they provide opportunities for L2 learners to produce large amounts of output, and the output produced by one player is a

meaningful source of input for other players. Input and output allowed for connected

interaction, in which focus on language form can lead to modified-output. Further,

players have the opportunity to negotiate input as a means to complete game tasks.

Finally, game tasks are similar to tasks believed to be beneficial in an L2 classroom.

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CHAPTER I

INTRODUCTION

Language is a way of making social meaning and is ultimately about communicating
with others. It is inseparable from enculturation, and activity is key to learning
(Sykes & Reinhardt, 2013).

Second language acquisition (SLA) researchers have stressed the importance of

interaction as a key factor in language acquisition (Gass, 1997; Lincoln-Porter, Paninos,

& Linneln, 1996; Long, 1983; Pica, Sykes & Reinhardt, 2013). Over the past several

decades, advances in technology and multimedia have provided language learners with

access to rich sources of second language (L2) input and opportunities for target-

language interaction. The Internet provides a seemingly unlimited source of television

shows, news, and magazine websites that are available in virtually any language currently

spoken. Websites, such as busuu.com and livemocha.com, have emerged recently that are

dedicated specifically to language learners. They connect language learners to native and

fluent speakers to practice their L2 skills in both text and voice formats.

Language teachers have incorporated online communication, such as chat rooms and

discussion boards, into course curricula to provide learners with opportunities to engage

with fluent and native speakers to accelerate the development of reading and writing

skills in the target language and the promotion of higher-order thinking (Beauvois &

Eledge, 1995; Lee, 2001). The interaction between language learners and fluent and

native speakers has obvious benefits when it comes to language exposure. Interaction

between two or more L2 learners, without a native-speaker, has also been shown to be beneficial and productive for L2 acquisition (Long, 1996; Pica et al., 1996).

Online classes and distance learning have grown significantly over the past several years. Online classes made up 25% of total enrollment in postsecondary education (Blake, 2011). Blake (2011) argues that online language learning "… stimulates students to spend more time engaged with second language (L2) materials, which ultimately promotes greater learning" (p. 21).

Outside of the classroom, L2 students may find it difficult to locate opportunities to engage in interactive target language use. If an L2 learner lives in a community where there are no native or fluent speakers of the target language outside of the classroom setting, then opportunities for interaction are obviously going to be limited. Even L2 learners living in communities surrounded by native-speakers, opportunity for authentic target language interaction can be very limited. As an ESL (English as a second language) instructor at the University of Utah, I have had a number of my ESL students report to me that they do not have the opportunity to use English in meaningful ways outside of the classroom context despite living in a community in the United States where the majority of inhabitants are native speakers of English. They find themselves spending free time only with those who speak the same native language; thus, they rarely use English outside of the context of a classroom. They add that making American friends can be difficult at best. Due to their self-consciousness, L2 learners often feel that their English proficiency is not high enough to keep up with native speakers.

One source that L2 learners can use to engage with native speakers is online videogames. Recent research on the use of online videogames as they relate to second

language acquisition theory reports some very positive results, specifically in the genre of massive multiplayer online role-playing games (MMORPGs; Blake, 2011; Cook-Plagwitz, 2008; Kongmee, Strachan, Montgomery & Pickard, 2011; Lee, 2001; Palmer, 2010; Peterson, 2010, 2011, & 2012; Rankin, Gold & Gooch, 2006; Rankin, Morrison, McNeal, Gooch, & Shute, 2009; Sykes & Reinhardt, 2013; Sylvén & Sundqvist, 2012). The interaction that takes place in MMORPG environments offers potential for ESL students to engage with native-speakers and other English learners in meaningful ways and in low-stress environments. This type of interaction and input offer ESL students opportunities for engagement in English that they might otherwise not have, despite their efforts to do so in the real world.

MMORPGs are played online in virtual worlds that, as the name suggests, are indeed massive. One player illustrates the substantial size of the world in the MMORPG entitled *Guild Wars 2*, writing in an online blog that after 32 hours of gameplay he had only completed 12% of the world (Tobold's Blog, 2012). The game's size offers players seemingly unending opportunities for exploration in a highly contextualized environment. During exploration, players are able to see and communicate in real-time with other players who are logged into the game. Players complete game tasks with defined rules and goals which can raise a person's self-confidence as they construct meaning and feel they are competent problem solvers (Blake, 2011). As self-confidence increases the motivation to learn, an L2 increases (Gardner, 1985).

Krashen's (1982) well-known input hypothesis argues that a high affective filter hinders language learning. The complexity of social relationships can hinder a learner's opportunity and their willingness to engage in the target language in a context in which

they feel comfortable (Peirce, 1995). In the game environment of MMORPGs, players'

affective filters are potentially low because, as players, they can be somewhat

anonymous, a situation that allows them the freedom to experiment in an L2 in ways that

might otherwise be uncomfortable in a face-to-face conversation.

An animated avatar, often referred to as a *character*, whose appearance can be

customized in just about any way imaginable, represents players. Communication

happens through text displayed on screen, allowing players to message a person or

persons who are simultaneously playing the game (see Figure 1.1).   Messages can be

sent to a specific player, other players on one's own team or party (as it is typically

called), or all players in a specific area. Communication is used to find teammates to

complete tasks, trade items with other players, or ask questions both related and unrelated

to the game. The quests that players work to complete often require coordination and

cooperation among players to be successful. The cooperative nature and social
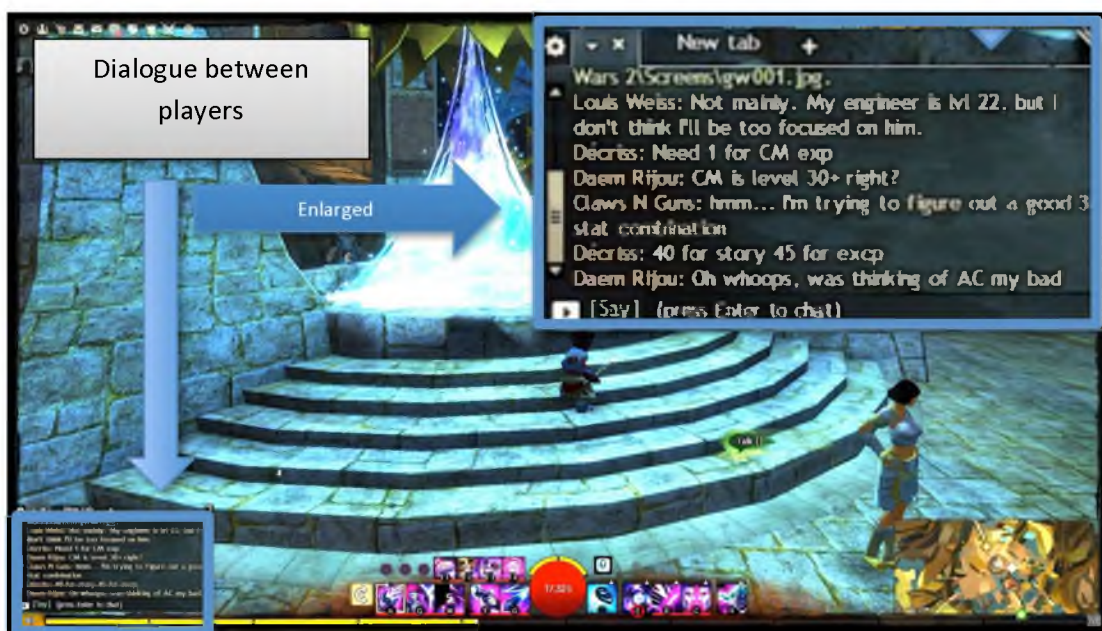
Figure 1.1 Dialogue between players. Screen shot of text chat from *Guild Wars 2*.

engagement elements of MMORPGs are very similar to elements deemed crucial for language learning in terms of sociocultural theory (Atkinson, 2002; Blake, 2011; Block, 2007; Firth & Wagner, 1997). Language develops through a social context as learners keep their conversation flowing and avoid a fatal breakdown that could be caused by conflicting activity (Chapelle, 2009). Players in MMORPGs complete tasks cooperatively and conversation can flow as they focus on tactics for success.

The MMORPG *Guild Wars 2* used in this study was released in the summer of 2012. It has become one of the most popular MMORPGs on the market, reaching 3 million copies sold as of January 2013 (Pinchefsky, 2013). Adding to its success is the fact that *Guild Wars 2* does not require the monthly subscription fee that many MMORPGs require, thereby adding to its popularity. Cooperation and communication among players is built into the game mechanics in order to create a highly social experience. Players can form parties with friends or participate with players that they come across during exploration.

The game could be played without interaction with others, but the game has many ways of encouraging players to casually jump in with others. One such way is by joining *group events* that are found in all areas of the game (see Figure 1.2). These events are designed to bring players in close proximity together to work towards the completion of a common goal. Cooperation and coconstruction are key elements for learning an L2 in sociocultural theory. Cooperative learning is typically used to describe classroom activities in which students work in small groups to complete tasks and receive rewards or recognition based on their group's performance (Slavin, 1980).

At later stages of the game, players encounter *group dungeons* in which five players

Figure 1.2 Group events. Screen shot of a player's map from *Guild Wars 2*.

work together to complete a dungeon and by doing so are rewarded with some of the best items available in the game. These group dungeons usually take at least an hour to complete. Teams of players can also compete against other teams of players in what is called PvP (Player vs. Player). From the start of the game, players can choose to play alone or form a party with anyone else playing the game. Casual participation is encouraged in *Guild Wars 2*, making the social experience a more focused aspect compared to other MMORPGs.

The focus of the current study is on analyzing the interaction and tasks that take place in the virtual world of an MMORPG entitled *Guild Wars 2*. The study breaks down participants' interaction into categories associated with 2 types of strategies—language learning and communication. The participants are 3 ESL students at a university who play *Guild Wars 2* cooperatively for about 12 hours. By interacting with fellow

participants as well as other players in the *Guild Wars 2* game world, I hypothesize that

ESL students will engage in a wide variety of learning strategies in the target language

that have the potential to facilitate language acquisition through interaction and exposure

to meaningful input. Furthermore, L2 learners will have multiple opportunities to

negotiate meaning during gameplay. Opportunities to negotiate meaning are beneficial to

the L2 participants' development of English both during in-game time and in the real

world.

CHAPTER II

LITERATURE REVIEW

Over the past several years, researchers have begun to investigate the benefits that online gaming has for language learners (Blake, 2011; Cook-Plagwitz, 2008; Kongmee, Strachan & Montgomwey, 2011; Palmer, 2003; Peterson, 2010, 2011, & 2012; Rankin, Gold, & Gooch, 2006; Rankin, Morrison, McNeal, Gooch, & Shute, 2009; Sykes & Reinhardt, 2013; Sylvén & Sundqvist, 2012; Thorne, Black & Sykes, 2009). Online gaming provides opportunities for language learners to use the target language in a meaningful fashion with native-speakers while engaging in tasks in the virtual game world. MMORPGs share many features with Content and Language Integrated Learning (CLIL) or Content-based Instruction (CBI) by immersing players in a context-rich environment that fosters authentic language use (Sylvén & Sundiquist, 2012). Communication in the game world is primarily via text, researchers have argued that it provides an ideal learning environment for second language acquisition (Peterson, 2011; Rankin et al., 2009; Sylvén & Sundiquist, 2012).

Research on MMORPGs

Massive multiplayer online role-playing games (MMORPGs) have been 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" (Peterson, 2011, p. 56). ESL students who are new to MMORPGs can learn to play the

game from more experienced players in the game world while simultaneously learning English. This context, in which novice players are collaborating with experts to achieve a goal, provides a perfect example of what Vygotsky (1978) calls the Zone of Proximal Development (ZPD; Sylvén and Sundiquist, 2012). The ZPD is "the distance between the actual developmental level as determined by independent problem-solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p. 86).

This context, in which novice players are collaborating with experts to achieve a goal, provides a perfect example of the Zone of Proximal Development. A central idea of the ZPD is that students who work together on language tasks are stronger in a group than any one person would be on their own. In essence, a group's potential language growth is more than its individual parts. Basically, the ZPD is the distance in language development between what you can learn on your own and with an expert. Social interaction between a novice and an expert or native speaker can lead to negotiation that develops the learners language ability beyond what he would be able to do on his/her own. Interaction increases the learner's L2 cognitive ability. By having people in your proximal "zone" you are able to develop beyond your individual potential.

Some benefits of engaging with native speakers in an online gaming environment are highlighted in the study by Yolanda Rankin and her colleges (2009) entitled, "Time Will Tell: In-Game Social Interactions that Facilitate Second Language Acquisition." In this study the authors asked the question whether ". . . MMORPGs increase second language

(L2) vocabulary acquisition and if so how" (Rankin, Morrison, McNeal, Gooch, & Shute, 2009, p.161).

Eighteen advanced ESL students participated in the study. They were broken down into 3 groups, 6 ESL students attended 3 hours of classroom instruction, 6 students played *EverQuest II* for 4 hours, and 6 were grouped with native English speakers to play *EverQuest II*. The researchers chose 12 college-level vocabulary words to assess the participants' acquisition.

The results of their study found that the traditional classroom instruction group did better than the gaming group. The traditional classroom group had significantly higher scores on the vocabulary posttest than the gaming group. The traditional group had an average score of 54%, the gaming group had an average score of 16%. One reason the results may have favored the traditional group was that the posttest required the students to define the target words and use them in a sentence, which was very similar to the activities employed in the traditional classroom setting. Therefore, the authors felt that the design of the posttest gave the traditional classroom participants an advantage. A second posttest was given to test vocabulary in the context of the game. The authors found a significant difference in favor of those that played *Ever Quest II*. The participants who played the game with native-speakers scored an average of 83% compared to the average score of 60% for the traditional classroom group and 57% for participants who played the game alone. The researchers concluded that, in-game social interactions between ESL students and the native speakers in the study had a positive impact on L2 vocabulary acquisition (Rankin et al., 2009, p. 163). Interaction was thought to play a key role in the acquisition of vocabulary.

Outside of vocabulary acquisition, there were several examples in the Rankin study of interaction between ESL students and native-speakers that the authors thought were

worthy of attention. After a single gaming session the ESL students attempted to influence the future actions of the native-speaker teammates, which the authors felt showed an increased level of comfort in using the target language and contributed to the ESL students social and communicative English competence. This benefitted performance because it showed that participants were more comfortable in conversations and output production that came out of working together to complete game objectives.

The authors note that the study was limited by the low number of participants and the amount of time the game was played. In the study 6 participants played the game for a 5-hour period. The authors state that they cannot generalize the findings, but it does illustrate the potential benefits of MMORPGs for these participants.

Mark Peterson (2010, 2011, & 2012) conducted several studies involving MMORPGs and language learning. One of which was an experimental qualitative study conducted in Japan with ESL students who played *Allods Online*, which is another type of MMORPG, during the course of a semester. The study revealed that English learners, "took the lead in managing their discourse and actively engaged in collaborative social interactions involving dialog in the target language" (Peterson, 2011, p. 56). He writes that the benefits of the in-game interaction "include access to an engaging social context, enjoyment, exposure to new vocabulary, reduced anxiety, and valuable opportunities to practice using a foreign language" (p. 56).

Peterson's study found that the participants used transfer strategies to build in-game social relationships among other players in the gaming world. Transfer strategies include the use of previous linguistic knowledge or prior skills to assist comprehension or production (Chamot & O'Malley, 1992, p. 56). Specifically, the transfer strategies

mentioned by Peterson refer to types of positive politeness strategies that are seen in face-to-face interaction, such as showing familiarity, developing rapport, and signaling a desire to obtain membership in a particular social group (Brown & Levinson, 1987).

Similar to Rankin et al., (2009), Peterson's (2011) participants made efforts to engage in social interaction and manage target language interaction with native speakers of English. Many successful communication attempts were recorded as well as some failed attempts. After the experiment concluded, Peterson gave the participants a questionnaire to assess their attitudes and perceptions pertaining to language use in the game. The responses from the questionnaire reported that students felt free to express themselves in the context of the game and showed little inhibition in doing so. A majority of the students also reported that playing the game facilitated vocabulary learning. However, the proficiency level and prior gaming experience were major factors influencing the participants' success and enjoyment in the game.

Steven Thorne (2008) observed the interaction of 2 people playing the MMORPG *World of Warcraft*, finding that the players engaged in beneficial forms of target language interaction. One player was from North America and the other from Ukraine. These 2 players happened to find each other in the same game area and decided to work together to accomplish in-game tasks that would be easier to complete working cooperatively. After this initial cooperative gaming session, the 2 players agreed to meet again in the game at a later date. During their gaming sessions the North American player would find Russian phrases, from outside sources, to try out on his new Ukrainian friend. The Ukrainian player would provide feedback and encouragement on his effort to use Russian. This was followed by successful repair sequences on the part of the North

American player. He then went on to express a strong interest in beginning Russian language courses. Thorne writes that these online environments share attributes with the L2 classroom such as negotiation, repair sequences, explicit corrective feedback, and requests for assistance (Thorne, 2008).

Sylvén and Sundquist (2012) illustrate the parallels of Content and Language Integrated Learning (CLIL) and *World of Warcraft* in terms of learning principles first proposed by James Gee (2003) in his book *What Video Games Have to Teach Us about Language and Literacy*. Of Gee's 36 learning principles, 11 were present in CLIL classrooms. Of the 11, Sylvén and Sundquist claim that 8 apply to the gaming environment of *World of Warcraft*. They discuss in detail the 8 principles and how an English learner could in fact benefit from playing the game. The authors argue MMORPGs are beneficial for language learners because the games provide opportunities to produce output and collaborate with others in the target language. The paper argues for the potential of video games as language tools because they resemble a CLIL learning environment. They review previous studies that claimed students' vocabulary gains stemmed from the video games played in their free time (Gold & Gooch, 2006; Piiraninen-Marsh & Tainio, 2009; Rankin, Gold & Gooch, 2006; Sundqvist, 2009). They highlight another study conducted in Sweden that found that undergraduate participants who frequently played the MMORPG *World of Warcraft* did better on the national English exam than those who did not play the game (Astrén, 2010).

Learning Strategies

Chamot and O'Malley (1992) present a taxonomy of learning strategies that pertains to their use in content and language integrated contexts. They argue that the benefits of

using such learning strategies in an ESL classroom enable students to be more effective learners because they are more mentally active. The strategies are broken down into three categories: metacognitive strategies, cognitive strategies, and socioaffective strategies. The authors' definitions of each learning strategy category are given below.

1. Metacognitive strategies: These involve executive processes in planning for learning, monitoring one's comprehension and production, and evaluating how well one has achieved a learning objective (Chamot & O'Malley, 1992, p. 51).

2. Cognitive strategies: The learner interacts with the material to be learned by manipulating it mentally (as in making mental images or relating new information to previously acquired concepts or skills) or physically (as in grouping items to be learned in meaningful categories or taking notes on or making summaries of important information to be remembered; Chamot & O'Malley, 1992, p. 51).

3. Socioaffective strategies: The learner either interacts with another person in order to assist learning, as in cooperation or asking questions for clarification, or uses some kind of affective control to assist learning (Chamot & O'Malley, 1992, p. 51).

The authors apply these learning strategies as part of their Cognitive Academic Language Learning Approach (CALLA). They describe learning-strategy instruction as "... a cognitive approach to teaching that helps students learn conscious processes and techniques that facilitate the comprehension, acquisition, and retention of new skills and concepts" (Chamot & O'Maley, 1992, p. 50). Their intention in providing a taxonomy for learning strategies is to provide " . . . a bridge between bilingual or ESL instruction and academic mainstream classes" (Chamot & O'Malley, 1992, p. 55).

The current study uses the language learning strategies described by Chamot and O'Maley (1992) and applies them to the game environment in *Guild Wars 2* to illustrate how the strategies can be used to support language learning in the realm of the game. The tasks used to facilitate language learning in a content-based ESL class are similar to the tasks players engage in while playing *Guild Wars 2*. For example, the learning strategy imagery is defined as using visual images to understand and remember new information. This strategy is applicable to the context of the game environment of *Guild Wars 2*. For each item that can be found in the game there is an illustrated icon that goes along with it. If a player picks up a blueberry then an icon is placed in their inventory screen that resembles a blueberry. Placing the mouse over the icon gives players a written message giving the name and description of the item (see Figure 2.1). An ESL student playing *Guild Wars 2* might want to tell his teammate that they need a blueberry to complete a quest. If the player has forgotten the word for blueberry he might open his inventory and

Figure 2.1 Player's inventory. Screen shot of player's inventory from *Guild Wars 2*.

see the icon and then make the connection to the lexical item. The learning strategies put into a gaming context illustrate the potential that MMORPGs such as *Guild Wars 2* have to benefit language learners, as learners either consciously or subconsciously use the learning strategies while playing the game. However, many of the strategies are difficult if not impossible to observe in a research study. Without a way to explicitly record the internal thoughts of a player, it would be impossible to know if someone is employing metacognitive strategies (i.e., thinking about their own thinking). However, there are strategies in the cognitive and socioaffective domains that are observable in a research study, and they are used as a categorical framework for analyzing participant interaction in the current study.

Some of the learning strategies defined by Chamot and O'Maley (1992. pgs. 55-56) are given herein and followed by examples from *Guild Wars 2* that demonstrate how players could employ the learning strategies in the context of the game.

Metacognitive Strategies

The learning strategies described below outline cognitive, metacognitive, and social strategies that language learners can employ to benefit their language development. In this section, the metacognitive learning strategies *advanced organization, selective attention, self-monitoring,* and *self-evaluation* are defined and followed by an example of how they could be employed in a gaming context.

Advanced organization is defined as: previewing the main ideas and concepts of the material to be learned, often by skimming the text for the organizing principle (Chamot & O'Maley,1992). Advanced organization could occur in *Guild Wars 2* when the player is given a quest. He then skims the text in the quest description to determine the actions that

will be needed. In the screenshot (Figure 2.2), the top right hand corner shows the quest

objectives that need to be completed to succeed in the quest (see Figure 2.2). The player

can skim the text for key words such as "eliminate and spar" and plan for what actions

need to be taken next.

Selective attention is defined as: deciding in advance to attend to specific aspects of

input, often by scanning for key words, concepts, and/or linguistic markers (Chamot &

O'Maley, 1992). Selective attention could occur when the player decides to pay attention

to specific key words needed to complete the quest. If he needs to defeat X, or find item

Y, he will decide to pay attention to visual and textual cues in the area that will lead him

to X or Y.

Self-monitoring is defined as: checking one's comprehension during listening or

reading or checking the accuracy and/or appropriateness of one's oral or written

production while it is taking place (Chamot & O'Maley, 1992). A player will check his

Figure 2.2 Tasks in *Guild Wars 2*. Screen shot of objectives from *Guild Wars 2*.

comprehension of the message received from fellow party members and the appropriateness of his responses.

Self-evaluation is defined as: judging how well one has accomplished a learning activity after it has been completed (Chamot & O'Maley, 1992). Self-evaluation can occur after the success or failure of a group dungeon or task, the player will judge how well it went and decide whether or not to alter future actions in similar tasks or dungeons.

Cognitive Strategies

In this section, the cognitive learning strategies *resourcing, grouping, summarizing, deduction/induction, imagery, audio representation, elaboration, transfer,* and *inferencing* are defined and followed by an example of how they could be employed in a gaming context.

Resourcing is defined as: using target language reference materials, such as dictionaries, encyclopedias, or textbooks (Chamot & O'Maley, 1992). If a player does not understand the vocabulary used in a text from a party member or a quest giver he uses a dictionary, or he could simply ask other players by texting "what does X mean?"

In the screen shot of *Guild Wars 2* below, a player asks the general public of the game, "What does 'shredding' mean for a Mesmer" (see Figure 2.3). A player responds by stating that shredding is an ability used by some players of the game. Seconds later, another player responds, "Shredding recharge rate is the unique Mesmer attribute that reduces rate on all shatter abilities."

Grouping is defined as: classifying words, terminology, or concepts according to their attributes (Chamot & O'Maley, 1992). Quests often have similar objectives but require very different ways to accomplish that objective. Quests might require a player to defeat,

Figure 2.3 Asking questions. Screen shot of a player asking another player a question from *Guild Wars 2*.

kill, vanquish, exterminate X or gather, find, bring, destroy Y. The player groups these words together to accomplish varying quests.

Summarizing is defined as: making a mental, oral, or written summary of information gained through listening or reading (Chamot & O'Maley, 1992). A quest or player may give a lengthy description of what needs to be done to accomplish a task. A player will simply summarize what is said by understanding that he simply needs to defeat X.

Deduction/induction is defined as: applying rules to understand or produce the second language or making up rules based on language analysis (Chamot & O'Maley, 1992). By accomplishing quests alone or with other players, a player is exposed to a lot of input through both recorded voice and text. The player can infer grammar rules and vocabulary use and test his hypothesis when interacting with other players.

Imagery is defined as: using visual images (either mental or actual) to understand and

remember new information (Chamot & O'Maley, 1992). There are thousands of items and gear in *Guild Wars 2*, each of which has an icon that a player can place the mouse pointer on to see the item's name. The world is graphically rich and visually stimulating. New vocabulary will most likely be accompanied by an item, environment, or action seen in the game.

Auditory representation is defined as: playing back in one's mind a sound or a word, phrase, or longer language sequence (Chamot & O'Maley, 1992). There are many hours of recorded audio in *Guild Wars 2* that enhance the game experience. Players can listen to characters speech and play the recording back in their head, giving them vast exposure to English phonology.

Elaboration is defined as: relating new information to prior knowledge, relating different parts of new information to each other, or making meaningful personal associations with the new information (Chamot & O'Maley, 1992). Successful completion of quests in *Guild Wars 2* often requires a lot of trial and error. New quests can require players to draw on information from prior quests, and relating new information such as new skills attained by increasing a player's level to defeating more difficult enemies. The rewards given for completing quests can be specific to a player's character in the game, making new items meaningful to specific players.

Transfer is defined as: using previous linguistic knowledge or prior skills to assist comprehension or production (Chamot & O'Maley, 1992). Once players are successful in using English to request information from other players, they can use these new linguistic skills to assist them in other aspects in the game such as trading items or giving commands or information to others.

Inferencing is defined as: using information in an oral or written text to guess meanings, predict outcomes, or complete missing parts (Chamot and O'Maley, 1992). When participating in a group quest or event, a player must be able to understand the text that is used by his fellow party members to succeed in the task at hand.

Socioaffective Strategies

In this section, the socioaffective learning strategies *questioning for clarification, cooperation,* and *self-talk* are defined and followed by an example of how they could be employed in a gaming context.

Questioning for clarification is defined as: eliciting from a teacher or peer additional explanation, rephrasing, examples, or verification (Chamot & O'Maley, 1992). At any point in the game, a player can use the chat function to text all other players in the same area. Players often ask for the location of an item, place, enemy, or how to accomplish something. ESL students can ask what a word means or ask someone to rephrase text they received from another source (see Figure 2.4).

Cooperation is defined as: working with peers to solve a problem, pool information, check a learning task, model a language activity, or get feedback on oral or written performance (Chamot & O'Maley, 1992). Cooperation is a major theme of *Guild Wars 2.* It is essential to completing group activities, solving in-game puzzles, and providing information in order to be successful in quest completion. Players need to pool information, request information, plan a mode of attack, coordinate the next area to go, and give each other feedback on their performance.

Self-talk is defined as: reducing anxiety by using mental techniques that make one feel competent to do the learning task. Because in-game communication is done without
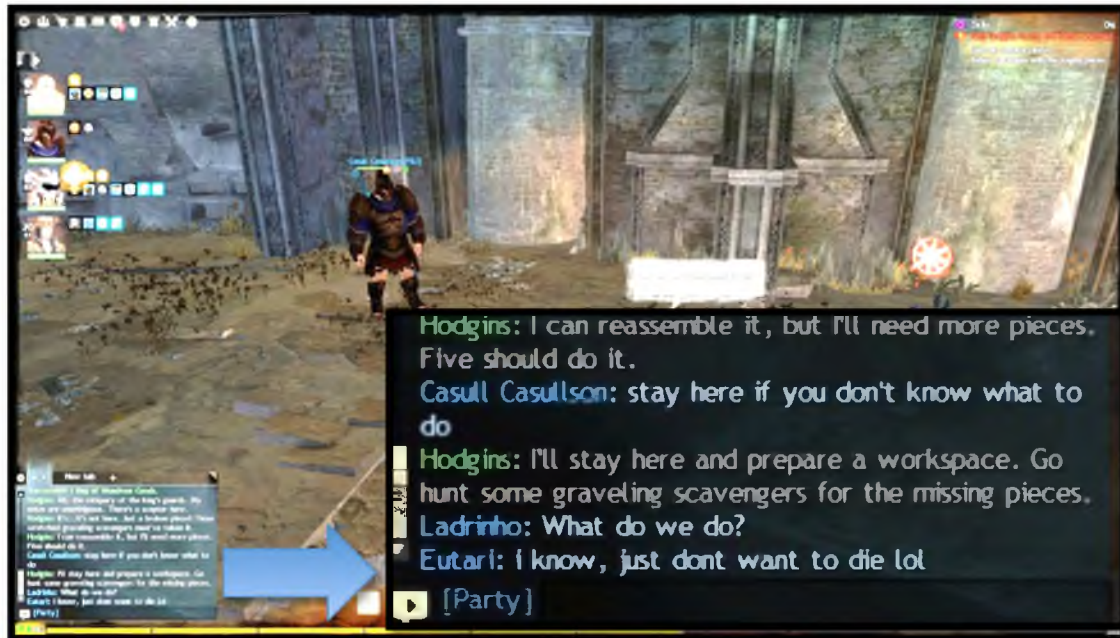
Figure 2.4 Cooperation to complete task. Screen shot of players cooperating to complete a dungeon from *Guild Wars 2*.

ever having to see the actual person, anxiety is low and making language errors can be done safely behind the guise of a player's character.

Although most learning strategies have been paired with a specific example of their potential in-game use, many of the learning strategies are not observable, making it difficult to determine the number of times the strategies are used by each player. Other strategies, such as questioning for clarification, may overlap with the strategies for negotiating meaning that are outlined in the following section. Therefore, only five observable learning strategies from the list above will be examined in this study; these are *resourcing, imagery, transfer, inferencing*, and *cooperation*.

Communication Strategies

Communication strategies expand on the social and interpersonal aspects of the learning strategies and are used by language learners to negotiate meaning. Although

there is some overlap with learning strategies, communication strategies describe the different types of interactions that take place between interlocutors when there is a breakdown in communication. The process of breakdown and repair in communication is often referred to as *negotiation of meaning*.

During interaction, the negotiation of meaning that occurs is also thought to be a beneficial factor as interlocutors work out a misunderstood message or utterance (Schmidt, 1990; Swain, 1995). "Negotiation… takes place during the course of their interaction when either one signals with questions or comments that the other's preceding message has not been successfully conveyed" (Pica, 1996, p. 61). Negotiation of meaning employs strategies such as *confirmation checks, clarification checks*, and *comprehension checks* among others (Gass & Varonis, 1994). These strategies are often referred to as communication strategies.

Communication strategies have been defined as, "potentially conscious plans for solving what to an individual presents itself as a problem in reaching a particular communicative goal" (Claus & Kasper, 1983, p.36). Language learners produce output and receive input to negotiate meaning in the target language, which allows for feedback between speakers. The message can then be modified based on the received feedback. This type of engagement among learners is crucial to language development (Lee, 2001; Long, 1985). The strategies allow learners to get feedback from the person with whom they are communicating with or allow them to notice their mistakes and make future repairs. Interaction also facilitates L2 learning from a social perspective, allowing learners to build social language competence (Gass & Varonis, 1994; Pica, 1996).

Researchers have worked to come up with a list of communicative strategies (Faerch

& Kasper, 1983). Over the past few decades, researchers have revised and refined communication strategy definitions; however, the list often includes strategies such as comprehension checks, confirmation checks, and clarification requests. Lee (2001) employed a list of communication strategies derived from definitions by Long (1985), Pica and Doughty (1985), and Tarone (1980) in a study that examines the communication strategies employed by Spanish learners as they spoke to one another via text in an online chat room. The communication strategy definitions below are taken from Lee's study (2001, pp. 236-239).

1. Comprehension checks. Comprehension checks refer to the questions asked by the speaker to make sure that the listener has understood what s/he has said (Long, 1980; Pica & Doughty, 1985).

2. Clarification checks. Clarification checks occur when the listener asks wh-questions, uses tag questions, or responds to the statement using "I don't understand" (Long, 1980; Pica & Doughty, 1985).

3. Confirmation checks. Confirmation checks refer to the repetition of all or part of the statement or question heard by the listener to ensure that what s/he has heard is correct (Long, 1980; Pica & Doughty, 1985).

4. *Use of native language*. In this strategy speakers use their native language (L1), when possible, to express lexical items or ideas unknown to the speaker.

5. *Self-corrections*. Self-corrections are composed by the speakers or the listeners using correct words or grammatical structures after speakers realize that errors have been made. Although self-corrections may not seem to contribute directly to the negotiation of meaning, the self-correction process reinforces the correct selection of

words and usage of structures and thereby, contributes indirectly to meaning making.

6. *Word invention.* When learners do not know a certain vocabulary word in the target language, they make up words.

7. *Requests.* When receiving incomprehensible input, learners seek help by asking questions, such as "What is this?" or "What do you mean?" to understand the input.

8. *Use of approximations.* Learners make generalizations about the meaning of words in the target language without looking them up in the dictionary. For instance, they use bola (ball) to express globo (balloon) and pájaro (bird) to substitute for pavo (turkey) in Spanish.

The communication strategies identified by Lee (2001) were used to categorize online chat room text interactions. In the study 40 intermediate Spanish learners were placed into groups that met for approximately 1 hour a week in an online chat room. The author gave the participants general topics to discuss such as holidays, celebrations, or seasonal events. Two hundred eighty-nine instances of negotiation of meaning were recorded and categorized into the communication strategies defined above.

The data collected from the chat room interactions showed that clarification checks were the most common type of strategy used by the participants in an instance of negotiation. Participants would type, in Spanish, "can you explain that" or something similar in order to request clarification of a chat room message that was not fully understood. Lee provided the following example from the students' chat room text to illustrate a clarification check that took place in the chat room: (2001, p. 240-241).

Student A: Yo pienso que hoy día los jóvenes son diferentes.

(I think nowadays young adults are different.)

Student B: ¿Cómo son diferentes?

(How are they different?)

Lee (2001) also concluded "… the participants used communication strategies similar to those used during face-to-face interaction" (p 242). The author went on to argue that the interaction that took place was meaningful and beneficial to participants in terms of their Spanish development. It allowed them to try out new vocabulary and structures through which mutual understanding occurred.

Lee's communication strategy categories are used as a framework in the current study to determine how L2 learners negotiate meaning; the current study analyzes real-time interaction through online text. However, the environment of *Guild Wars 2* provides a much richer context for target language use than the chat rooms in Lee (2001). In the Lee (2001) study, participants were given topics to discuss and were asked to stay on topic so as to keep things consistent. In the current study, the participants will have an encompassing interactive environment that is rich with visual and audio cues, thereby eliminating the need for predetermined topics. Participants will simply interact in the game as a result of cooperating to complete quests. The online text log that participants generate during game play is used to categorize instances of negotiation of meaning. The categories employed in this study mirror those used in Lee's (2001) study.

Motivational Factors in MMORPG Environments

Individual learners' motivation to learn a language can greatly influence the level of success they have in their L2 acquisition endeavors, and motivation is argued to be the strongest predictor of success (Gass & Selinker, 2001). Gardner describes four components of motivation, "a goal, effortful behavior, a desire to attain the goal, and

favorable attitudes toward the activity in question" (Gardner, 1985, p. 50).

In 2012, while working for a local CBS TV News Affiliate, I was assigned to cover a convention that celebrated Japanese animation and pop culture. Inside the convention center, hundreds of teenagers and even a large number of adults were dressed in elaborate costumes expressing adoration of their favorite video game, comic book, or Japanese cartoon character. I was recording video just outside the entrance where several teenagers were standing admiring each other's costumes when an American teenage girl began singing a song in Japanese. A teenage boy stood wide-eyed next to her, watching in astonishment. Afterwards he said to her, "Wow, that is so cool you can sing that song in Japanese. How long did it take you to be able to do that?" She responded by explaining that she simply listens to a lot of J-pop (Japanese pop music) and had been learning Japanese through the music. After several more compliments the boy expressed a strong desire to learn Japanese so that he too could one day sing J-pop in Japanese. Whether his motivation to learn Japanese came from a desire to sing Japanese songs (and by doing so being able to further integrate into the Japanese Anime culture) or a desire to impress girls at future conventions (a future reward) is hard to say. However, from what I witnessed, he had definitely found a motivation for studying a foreign language. Gardner writes that language-learning motivation stems from two main factors, one being a desire to integrate and the other a potential for future rewards (Gardner, 1985).

L2 researchers often distinguish between integrative and instrumental. "Integrative motivation refers to motivation that comes from a desire to integrate with the TL community. Instrumental motivation comes from the rewards that might come from learning" (Gardner, 1985; Gass & Selinker, 2001, p. 352). The current study argues that

Gardner's description of motivation is relevant in the online gaming culture. Online gaming, specifically MMORPGs, foster an environment in which both types of motivation Gardner describes are present.

"…MMORPGs offer a motivating context that elicits engagement in beneficial forms of target language interaction" (Peterson, 2010, p. 429). An MMORPG gamer has integrative motivation that stems from a desire to integrate with the other players in the virtual world of the game. By becoming further integrated with other players, the gamer has more opportunity to find others willing to "team up" to accomplish tasks that would be impossible playing the game alone. Integration in the game world also makes it possible to trade in-game items, or gear, as it is commonly called, with other players in the game. In order to advance in *Guild Wars 2*, players must form a party of five players to enter group dungeons. To find other players, one must use the in-game chat function and ask other players if they would like to join their party. Once a party is formed, communication and coordination between party members is essential to completing the group dungeon tasks. For example, players may need to tell each other which enemy in the game to attack first, or have some players activating switches that spring traps while others lure enemies into that trap. The language needed to communicate with fellow team, or party members fosters instrumental motivation in that the rewards that come with accomplishing group tasks are far greater than rewards one can get playing alone.

Another factor influencing motivation is learners' perceptions of success. Success rate can alter one's motivation to learn a language over time. However, researchers have questioned whether success predicts motivation or motivation predicts success (Gass & Selinker, 2000). The teenage boy at the anime convention in the scenario above illustrates

an example of a person who is setting a long-term goal of learning Japanese, which he may or may not have realized is a long-term goal. The success rate for his long-term goal depends on the success of a series of short activities (Gass & Selinker, 2000). If he is serious about learning Japanese he is likely to expose himself to comprehensible input in the form of J-pop music. To accomplish his long-term goal he might engage in a series of short activities over time. First he might memorize a J-pop song one line at a time until he has an entire song down. If he succeeds in doing so he may seek out a place in which he can show off his new ability. At another anime convention he could sing the memorized song to people around him. How his peers react to his performance can affect his motivation and attitude towards learning Japanese. Obviously a positive response from his peers could increase motivation while a negative one might cause him to give up.

Videogames also provide situations in which a long-term goal is broken up into a series of short activities. The goal may be to complete the game or to build a more powerful character. In *Guild Wars 2*, the motivation to keep playing is to build a more powerful character. By completing short activities, players are rewarded with in-game items, or loot as it is often called, that better their character's abilities (see Figure 2.5). The best loot comes from completing group activities such as dungeons. Completing a dungeon usually takes at least an hour, and, even then, success is not guaranteed. If players cannot work together effectively to complete the dungeon tasks, they will often be defeated and have to start the dungeon over. Similar to the teenage boy learning Japanese, players who find themselves successful may increase their motivation to play the game especially with other players, whereas a high rate of failure may result in decreased motivation. Therefore, a high success rate playing *Guild Wars 2* leads the

Figure 2.5 Reward for completing *group dungeons*. Screen shot of a group of players that completed a dungeon from *Guild Wars 2*.

participants to play the game more often and, thus, have more English input and output.

Because the participants in the current study are academic L2 learners in an institution of higher education (IHE) in the U.S., they have already set a long-term goal of improving their ability to use English. They are studying at an IHE and need to have a certain level of proficiency, as measured by the Test of English as a Foreign Language (TOEFL; or a similar standardized test), in order to be able to begin their studies. They are engaged in a series of short activities to improve their proficiency by taking ESL classes. It is unknown to me what short activities they engage in to improve proficiency outside the classroom, but it is assumed that they are at least getting input from completing everyday tasks in the L2 context, such as grocery shopping, navigating public transportation, obtaining public services, and exploring the city.

It is important to strive for an optimal success rate. Too much success can, in fact,

lead to decreased motivation. In other words, if the tasks are too easy, players may become bored with them. Motivational arousal is greatest for tasks that are assumed to be of moderate difficulty (Gass & Selinker, 2000). The creators of *Guild Wars 2* seem to have been aware of this possibility because the dungeons get more difficult and require more coordination as players move up in level.

There have been a number of studies investigating the potential for MMORPGs as language learning tools, and many have found positive results. Researchers laud MMORPGs as low-stress activities L2 learners can use to engage in the target language in an input-rich and authentic language use environment. Before any definitive conclusions can be drawn about their usefulness for second language acquisition, more research is needed. Specifically, future research is needed on exactly *how and why* MMORPGs are beneficial (or are not beneficial). Kongmee, Strachan, Montgomery, and Pickard (2011) state that a deeper analysis of participants' interactions is needed to further understand how these games foster second language acquisition. To investigate *how and why*, many more hours of recorded data are needed of language learners interacting in MMORPGs. Many studies cite being limited by the small amount of recorded data they had collected; some studies were based on as few as 5 hours of gameplay or less. Researchers also stress the need for different games being employed in studies. Many studies have used *World of Warcraft* as their medium.

In order to address these limitations, this study seeks to answer the following research questions:

1. What types of learning strategies are used while learners of English play *Guild Wars 2*?

2. How many learning strategies of each type are used?

3. Does *Guild Wars 2* provide opportunities for English language learners to negotiate input?

4. What specific communication strategies do participants employ in negotiating input?

5. What effect does playing *Guild Wars 2* have on the participants' attitude towards their English proficiency?

6. Does playing *Guild Wars 2* increase the participants' motivation to learn English?

CHAPTER III

RESEARCH DESIGN

Participants

In order to recruit participants for this study, I gave several university ESL classes a survey. The survey asked students a variety of questions, including questions about whether they played online videogames often, whether they ever did so in English, and whether or not they would be interested in participating in a research study involving online video games. The survey also asked if they had personal computers that could run *Guild Wars 2* (the system requirements were indicated in the survey) and whether they thought they would have time to play an online video game for a few hours a week over the course of a month. Another reason for the pregame screening questionnaire was that participants needed to be familiar with playing video games so that the learning curve of each individual participant would be similar.

After receiving about 75 surveys, I contacted around 10 students asking them to participate in the study. The choice of participants was based on whether they expressed an interest in video games, whether or not they thought they would have time to play, and whether they had a computer that could run *Guild Wars 2*. Many students declined to participate, but eventually I identified 3 students who agreed to participate. All 3 students' native language was Chinese.

They were all undergraduate students in their first or second year of study at the

University of Utah and were enrolled in ESL classes during the 2013 Summer term. They were all in their early 20s.

The 3 students signed a consent form and agreed to play *Guild Wars 2* until they completed a total of 12 hours of cooperative game play. I bought three copies of the game *Guild Wars 2*, and they were given to the participants at no cost to them. They were told they could drop out of the study at any time for any reason.

Instrumentation

The participants were asked to play *Guild Wars 2* together at the same time and told not to play the game unless all other players were able to do so. They were required to play the game in separate real-world locations so that all communication was done through the in-game text system. Participants chose to play the game in their campus dorms or apartments. None of the participants were roommates. In addition, they indicated that they would not play the game in the same dorm or apartment as another participant.

Gaming sessions were scheduled in advance to ensure that all participants could commit to a set schedule. There was no set time limit on how long a single gaming session could last; however, they were told that they must stop playing if any one player could no longer play and logged off. They were required to form an in-game party so that they could always see all other party members on their in-game map, which shows where other players are located and allows them to easily use the in-game chat function to communicate with one another.

The participants were asked to adhere strictly to the parameters set in this study: they must only play the game when everyone else is able to play and never play alone or with

a partial group. The participants were not given specific details of the study and its aims. They were told in general terms that the study aimed to look at English ability and video games.

Guild Wars 2 has five different "races" of characters to choose from, all of which place players in different "starting areas." For this reason, participants were required to agree on a single "race" and create characters for that race. Setting these parameters ensures that participants are able to see and interact with one another from the very first gaming session. After choosing a race, players can choose from eight different professions: engineer, necromancer, thief, elementalist, warrior, ranger, mesmer, and guardian. Each profession offers players unique skills, abilities, weapons, and armor. The participants were required to choose different professions so that each participant would have different skill sets and abilities. This allows each participant to contribute to the group's effectiveness in ways that are unique to their created character.

A training session took place before the first recorded session. The purpose of the training session was to familiarize each participant with the game and to demonstrate how it is played and how to use the screen-recording program. During training, the participants' in-game characters were created and were placed on the same game server. All participants needed to be on the same server to be able to form a party.

During the training session, I explained the basic aspects of playing *Guild Wars 2*. Participants learned how to form a party and use the chat function. They were made aware that they could not only use the chat function to communicate with one another, but also with other players in the game. Communication with other players could be used to ask general questions about the game, get help, trade items, or to simply say hello.

They were told how to employ the user interface and how to read icons on the in-game map. Other aspects of the game, such as inventory, equipping and using weapons and armor, and interacting with Non-Player Characters (NPCs) were also explicitly explained to the participants. *Guild Wars 2* offers an in-game tutorial that takes place during the early stages of the game, which further familiarizes players with game functions.

There was a total of five gaming sessions over the course of about a month. The sessions ranged from about 1.5 to 2.5 hours. The participants themselves determined the length of the sessions. There were times when some participants forgot to record their computer screens; however, at least 1 participant remembered to record for each of the session. As long as 1 participant recorded all text messages sent to and from all participants, all interactions would be recorded and could be seen. Each player's texts were displayed on each player's screen, so there was no loss of text data between participants.

The participants were told that they should use only English while playing the game and communicating with one another. They were asked to complete the in-game tasks together as a group and stay in close proximity to one another in the game world.

Data Collection

Data were gathered by recording the screens of each participant on their personal computers using a screen-recording program. It was the participants' responsibility to remember to run this program before each gaming session. By recording the participants gaming sessions, I could see each participant's chat messages in the context in which they were written.

The recorded data were transferred to a portable hard drive a few days after each

gaming session so that participants could delete the saved data on their personal computers and not take up their personal hard drive space. The portable hard drive was kept by me and never loaned to participants to ensure the safety of the data.

The game company ArenaNet developed *Guild Wars 2*. ArenaNet was contacted after my supervisory committee approved the thesis proposal to make the developers aware of the current study and request modest support for the research in the form of copies of the game for the participants. ArenaNet declined to support the study, so copies were purchased for the participants using personal funds and monies I received from a grant from the Second Language Teaching and Research Center (L2TReC) at the University.

Data Analysis

Recorded screen data are used to analyze the in-game interactions among players to answer the research questions in this study. There were a total of six gaming sessions; however, the first session was a training session and all participants were in the same room while playing the game, this first session was not used as part of the data analysis.

I also logged into *Guild Wars 2* at the beginning of most gaming sessions to ensure that all participants were playing at the same time and to remind participants to record their screens. Adding all the participants to the researcher's *Guild Wars 2* contact list enabled me to give participants reminders and ensure that all logged off at the same time. The contact list indicated which players were online. If one of the participants logged off, I could ensure that all other players did the same.

Data and text sent between players were not analyzed while I was logged into the game. Data analysis began after I logged off and the 3 participants were in a single party. The reason for this is because the focus of this study is on how ESL students

communicate with one another in the game environment; therefore, my presence in the game environment may have had an influence on how participants interacted with one another.

Research Questions #1 and #2

In order to answer Research Questions #1 and #2 (i.e., What types of learning strategies are used while learners of English play *Guild Wars 2*? How many learning strategies of each type are used?) it was necessary to identify the specific learning strategies that participants used while playing *Guild Wars 2*. The learning strategy categories were based on Chamot and O'Malley's (2001) work and their learning strategy categorical framework. The strategies were adapted to fit a gaming context. Categories that could not be observed through the recorded videos of the participants' gameplay were eliminated. In order to allow for more in depth analysis of interaction and better understand what the participants were doing in terms of language use and interaction, subcategories were created. For example, Chamot and O'Malley's (1992) category of cooperation is defined as "working together with peers to solve a problem, pool information, check a learning task, model a language activity, or get feedback on oral or written performance." Most of the interaction in *Guild Wars 2* could easily fit into this broad category of cooperation because the main purpose of the game is to work cooperatively with other players to complete tasks. To better understand the cooperation that took place in the game, cooperation was broken down into subcategories, which were used to better understand the ways in which the participants were cooperating with each other. The five subcategories of cooperation are *pooling information, modeling, giving*

commands, making statements, and *making suggestions.* Each subcategory is described in detail, and relevant examples from data collected are provided.

In order to keep data consistent in this study, each individual text was only placed in a single category. For example, a single text such as "look map" was not counted as both a command and an instance of pooling information.

Pooling information. Gameplay in *Guild Wars 2* is centered on completing tasks or quests, as they are often called. These tasks are displayed on the player's map and information on how to complete that task is given on screen. Whenever a participant produced a text that gave information related to completing a task or what needed to be done next, the text was counted as an instance pooling information. Often this came in the form of telling other players something they felt was important to completing a task and that perhaps the other players did not know. Another common occurrence of pooling information was when a player indicated to the other players that they had completed the objectives of a task. In that way the other players would know when they could move on. Although most tasks are done as groups, each individual needs to complete the objectives to get credit for the task. For example, one task might ask players to help the local farmers by killing predatory animals in the area. The players can work as a group to achieve this goal, but each player must participate and achieve an individual goal before the group is credited with accomplishing the task. This is why the participants often pool information.

In the in-game interaction below, the 3 participants are trying to figure out which task they should try next. This conversation happened during the first gaming session. (The names of the participants' in-game avatars have been changed so as not to give away

their actual avatars' names; thus, the participants can remain anonymous.)

Pine: Where should we go now

Thief: Let me think

Pine: Look at the map (Pine circles an area on the game's map)

Thief: I saw ok go

Mary: We need find the bear trop (misspelled "troop")

Pine: Look at the blue point.

In the conversation above Pine asks where they should go and then answers his own question by telling the others to look at their maps. Players can use the map to circle areas by holding down a button a using their mouse to draw something, which can be seen by all other players in the party. Thus, the text "look at map" followed by the visual of Pine drawing on the map was counted as an instance of pooling information because he is giving information related to completing, or in this case, starting a new task. Thief then confirms he saw the drawing. Mary's (Mary is male in "real-life," which is why the pronoun he is used throughout this study) text, "we need to find the bear trop" ("trop" was a misspelling of "troop") was also counted as an instance of pooling information because that was an objective of the task they were trying to complete. "Look at the blue point" was also counted as pooling information because it was also an attempt to share information related to the task at hand.

Command. The category of command is quite straightforward. A text was counted as an instance of command when a player directly told another player to do something specific. Commands were often used to tell players to go to a specific location or tell a player to wait. In the text above, "look map" was not counted as a command because the

purpose of the test was to share information with the others by circling something on the map. Below is an example of an instance of a command.

Thief: Follow me

Pine: Got it

Mary: Look map (Mary circles an area on the game's map)

Thief: Come here

Mary: Wait

Mary: We need finish the work

In the conversation above, two of the six texts were counted as instances of a command, "Come here" and "wait." Thief is telling another player to come to his location, to which Mary responds with another command, "wait." Both texts are telling the players to take, or not take, some sort of action. Again, "look map" was not counted as a command because the purpose of that text was to pool information by getting other players to see what he had marked on the map.

Statement. A text was counted as a statement when a player's text was very general or not related to a specific task or even not related to the game at all. A few examples from the study are when a player said, "This city is big," "I am so hunger," or "My connection is not good." Although statements are not necessarily a form of cooperation, it was included so that texts that were not game-related could be quantified.

Suggestion. When a player suggests a course of action or implies that another player do something it was counted as a suggestion. Commands and suggestions are similar but a suggestion is less direct and often includes words in the sentence such as should, maybe, or I think we need to. Below is an example of a conversation that includes two

suggestions.

    Thief: You should chose someting

    (used "chose" instead of "choose" and misspelled something)

    Thief: Yes

    Thief: Maybe you should finish this task

    Pine: How

    Pine: I did not

    Thief: I dont (instead of don't) know

    Pine: It says investigate the altar

In the example above, the players are trying to figure out how to finish the last part of a task. At the end of the task the players are supposed to choose one of three options in a dialogue with an NPC. Pine is having trouble deciding which option he should choose and Thief is trying to help him. "You should chose something" is counted as a suggestion because the contextual use of the modal should appears to be one of giving a suggestion and not of giving advice. The same is true for the text "maybe you should finish this task." Thief uses the word maybe, thereby creating a less direct form of a command that is interpreted as a suggestion.

    Modeling. Texts were counted in the category of modeling when the purpose of the text appeared to tell other players to follow the writer of the text's example. Often players would ask each other what they should do next by texting "follow me" or "talk to this person here." In this sense they are modeling or showing the other players exactly what they should do in order to progress. The other players did not always follow the example of the writer of the text but it was still counted as an instance of modeling. Although

modeling indicates that a participant is demonstrating a solution to a problem through action and not necessarily language, it may seem questionable to be deemed a language learning strategy. However, the fact that modeling is initiated through language use, i.e., "follow me," makes it linguistically interesting because language is being used as a solution to the problem, at least initially. In the example below, the participants are again trying to figure out what to do next and 1 of them had separated from the other 2 and had found a boss. (Boss is a term often used to refer to an enemy that is more difficult to defeat and gives better rewards for defeating.) Participants often left out end punctuation, which is why it is not seen in the participants' text below.

Thief: Where is (Mary). (The participant's real name was replaced with "Mary")

Pine: He is in another map

Pine: Hi (Mary)

Mary: Come here guys

Mary: Follow me

Mary: Just kill

Mary: Come here

Mary: There have boss

In this example, Mary tells the others to follow him and kill the boss that he is currently fighting. In essence, he is telling the others to do what he was currently doing on his own and thus modeling what he believes is the best action to take.

The learning strategies above may appear to be difficult to categorize using the text by itself. However, the text along with the game video gives clarification as to intended meaning of the texts. In the last example Mary's text, "follow me" might be seen as a

command to the other players if Mary was in the same approximate location as the others. However, since Mary was already fighting the boss the text "follow me" was written to tell other players that they should look at what he is doing and do the same thing.

Research Questions #3 and #4

In order to answer Research Questions #3 and #4 (i.e., Does *Guild Wars 2* provide opportunities for English language learners to negotiate input? What specific communication strategies do participants employ in negotiating input?). I analyzed how learners negotiated meaning during gaming sessions by tallying the number and type of communication strategies that were employed. Participant-produced texts were used as the means of counting communication strategies, similar to the learning strategies discussed previously. Each time one of the strategies occurred in the data, a tally was placed in the appropriate category and the time code was recorded.

In the context of *Guild Wars 2*, there are two types of input that can lead to negotiation. The first is the text messages that are received as players communicate during gameplay. One player's output is input for the other two players. The other type of input is the environment of the game. This can be a task that players need to complete to progress, a player's inventory and abilities, NPCs, enemies, the map, or anything else the players interact with while playing the game. Environmental input that is not understood by one player can initiate negotiation among all the players of group by a player indicating to other group members that they did not understand something in the game environment. Negotiating can then take place as the other players work to explain the environmental input that is not understood to the player that indicated he did not understand. Often, environmental input that was not understood by one player was also

not understood by the other players. This would initiate negotiation among the group as a whole and they worked together to understand the environmental input by sending messages to one another.

The texts that participants sent back and forth to one another were analyzed for the number and types of communication strategies used to negotiate environmental input during game play. For example, the players had a task they needed to complete, and they were unsure of what they needed to do. In order to figure out what needed to be done, the participants asked each other questions and gave their opinions. Eventually they agreed on what needed to be done and tested it by trying it out. They learned from either failing or succeeding in the task.

For the purposes of this study the communication strategies for both environmental input and human input were analyzed, however, they are not separated in the data analysis. The difference between the two is what caused the negotiation to take place between participants in the first place. Obviously, negotiation can only occur between humans, but it can originate form either not understanding another human or from not understanding something in the game environment. Negotiation of environmental input is linguistic in nature in that it stems from not understanding the computer-generated text for a task.

An example of how environmental input was analyzed through players' texts is as follows. A player might ask, "Where is the main boss?" To which he might receive a response such as, "he is by the farm." To which the other may reply, "I don't know where that is, can you show me?" Then, the players engage in a series of questions and answers in order to find the main boss. Environmental input elicited a situation in which the

participants worked together to find the main boss because one player did not know

where to find the boss. The texts they use to figure out how to get to a particular task or

how to complete the task are categorized into communication strategies as they negotiate

the environmental input. The same set of communication strategies is used for both

human and environmental negotiation of meaning. Again, the two are not separated in

data analysis.

Lee's (2001) study was used as a framework for analyzing the communication

strategies in this study. Lee's categories were adapted to fit the context of this study.

Below are descriptions and relevant examples of each of the communication strategies

used in this study. The categories are *requests, checks, use of the L1, self-correction*, and

peer-correction. Requests were further broken down into three subcategories: *general

requests for information, specific requests for information*, and *requests for action*.

Checks also have three subcategories, which are *clarification checks, confirmation

checks*, and *comprehension checks*.

Requests. Texts were placed into the communication strategy category of requests

when a participant asked other players for information. This could be a request for

information about a player, such as their location or inventory, as well as a request about

the game environment, such as how to complete a task or where they should go next.

Texts that were determined to be requests were further analyzed and placed in one of

the three subcategories: specific requests, general requests, or requests for action. A

specific request is accomplished when one participant asks another participant for

information on a specific task, object, place, player, or any other element within the

game, whereas a general request is accomplished when one participant asks a broader

question in which he does not ask about any one thing in particular. The example below illustrates the difference between a specific request and a general request.

Mary: Where going?

Thief: I don't know

Mary: To do the main task?

Pine: We can try now

In the conversation above, Mary asks where they are going. This is categorized as a general request because the player is not asking about a specific place but is simply asking where they are going in general. Mary then asks if they are going to do the main task which is categorized as a specific request because Mary is asking about something specific, the main task.

A request for action is a request that asks another player to do something. Requests for action are similar to commands in that one player is trying to influence an action of another player, however, requests for action come in the form of a question while commands do not. Most requests for action came in the form of asking another player for some sort of help. In several instances a player's character was defeated in the game, and he would request help by writing "Can you heal me?" Players can revive one another's characters in the game by going to the downed character and clicking the revive option that appears above the downed character.

Checks. Checks occurred when a player indicated that he did not fully understand a previous text from another player or a writer of a text wanted to confirm that an earlier text was understood. Checks were broken down into three subcategories—clarification, confirmation, and comprehension checks.

A player's text was counted as a clarification check when a player wrote a text and another player responded with a question asking for more information. Clarification checks were initiated by the receiver of a text, in essence the listener, and directed towards the person who wrote the first message, in essence, the speaker. The listener indicated in his response that the original text was not fully understood. Thus, they were negotiating meaning as they worked out what the speaker of the initial message was trying to communicate to another player.

Below is an example from the data in this study. In this example, the player Mary was trying to figure out if the player Thief had finished a particular task. Thief was not certain which particular task Mary was asking him about.

Mary: We need to do the mainly work

Mary: Follow the green line

Thief: I don't know how to do this

Mary: What do u need to do?

Thief: Nothing

Mary: U did not finish that?

Thief: Finished what?

Mary: Wait him

Pine: Do you get the task (Thief)?

Thief: Which?

Thief: Twilight of the wolf

Mary: Follow the green line

In the text above there were three clarification checks that occurred. In the fourth line

Mary asked Thief, "What do u need to do?" Mary responds by typing, "nothing." Mary apparently did not understand what Thief meant by "nothing," and attempted to get more information about what Thief meant by asking, "U did not finish that?" This question was counted as the first clarification check. Thief's next question, "Finished what?" was counted as the second clarification check because Thief did not understand what "that" referred to in Mary's previous question, "U did not finish that?" Similarly, Thief later asked "Which?" when asked by Pine "Do you get the task?" It was apparent that Thief did not know which particular task Pine was asking him about. This was counted as the third clarification check.

A text was counted as a comprehension check when a player wrote two texts, the second of which was to make sure that the listeners understood the initial text. The example below illustrates a comprehension check from this study.

Thief: We should let NPC go first

Mary: Don't let them fight me

(A few seconds go by and Mary does not receive a response)

Mary: Ok?

Mary wanted the other 2 players to protect him from the enemies in the area. When he did not receive a response from either of the 2 players, he wanted to make sure that the other 2 understood by writing "Ok?"

Confirmation checks occurred when a player wrote a text and another player responded to that text by producing a text to make sure that he understood the initial message. Confirmation checks are different from clarification checks in that the listener may have understood the initial message, and, therefore, did not need clarification, but

instead wanted to make sure that his interpretation of the initial message was the same as the speaker's intention. Below is an example of a confirmation check from the study.

Thief: I need help

Thief: Look map

Thief: Come here

Thief: Hey guys

Thief: Hello

Thief: Hello?

Pine: Can you say again?

Thief: Look map

Pine: You need help?

Thief: Yes

Thief was in a different location than the other 2 players and found that he was too weak to fight alone and requested help. He did not get a response and typed several other texts to try to get the others' attention. Finally, Pine noticed Thief's messages and wanted to confirm that he understood that Thief did indeed need help and asked, "You need help?" Because he was confirming his understanding of a previous message from Thief, this interaction was counted as a confirmation check.

Use of the L1. When a player typed a message in Chinese (all 3 participants' native language is Chinese) that text was categorized as a use of L1. The participants were asked to only use English when playing the game, and they followed this request almost perfectly. During the 5 gaming sessions only 7 of 886 texts showed evidence of L1 use.

Self-correction. If a participant typed a message that he felt contained a spelling or

grammar error, and, in a subsequent message, corrected himself, this interaction was categorized as a self-correction. One example from the data occurred when a participant told the other 2 players that he was going to take a break and go outside and smoke a cigarette. He first typed, "I am somke." Seconds later he typed another message and wrote "smoke" to correct his earlier message and then added another correction typing, "smoking-" This would count as two self-corrections.

Peer-correction. If 1 player typed a message correcting the grammar or spelling of another player's earlier text this was categorized as a peer-correction. An example of peer-correction occurred when a player made a comment on the damage a stone inflicted on an enemy they were fighting, as seen in the text below.

Pine: The stone's damage is too high

Thief: Yes

Thief: So high

In order to better understand the use learning and communication strategies in the interaction that took place among players, I also tallied the number of times that a text was part of a connected interaction. Each time a player responded, answered, or reacted to another player's message by producing another text, it was recorded and categorized as an instance of connected interaction.

Research Questions #5 and #6

Research Question #5 and #6 (i.e., What effect did playing *Guild Wars 2* have on the participants' attitude towards their English proficiency, and did playing *Guild Wars 2* increase the participants' motivation to learn English?) are answered using poststudy questionnaires and in-person interviews. These data collection tools focused on

participants' attitudes about the game, how they felt it affected their ability and

confidence to use English, and their future language goals as English language learners.

CHAPTER IV

RESULTS

During the 5-recorded gaming sessions, data were analyzed starting at the point at which I logged off and the participants began playing the game by themselves. Sessions continued until the point at which all participants logged off. The total time played and the total number of texts for each gaming session are given in Table 4.1. Across all 5 gaming sessions there was a total of 886 texts produced by participants while playing *Guild Wars 2*. The analyzed data incorporated a total of 537 minutes, which is an average of 1.65 texts per minute. Table 4.2 shows the number of texts per minute per session.

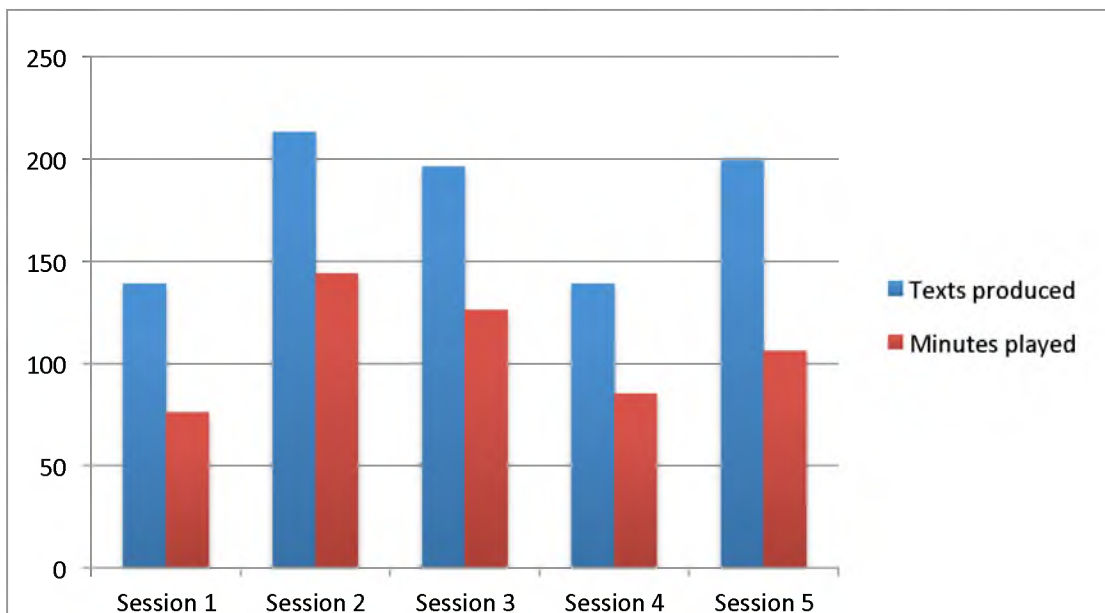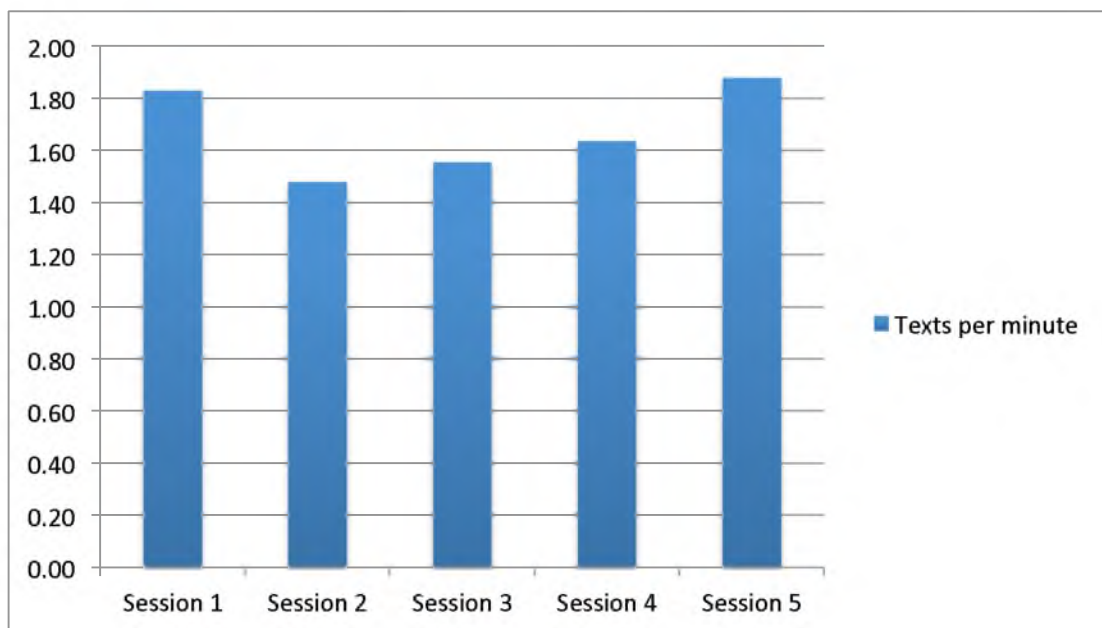Table 4.1 Total texts produced and minutes played

Table 4.2 Texts per minute

Learning Strategies

Research Questions 1 and 2 ask the following: What types of learning strategies are used while learners of English play *Guild Wars 2*? How many learning strategies of each type are used?

In the learning strategy category the results indicate the most commonly used learning strategy by participants was in the category of pooling information. Of the 886 total texts produced by participants during the study, 207 fell into the pool information category, which made up 23.4% of the total texts produced (see Table 4.3). The next most commonly used learning strategy was giving commands, which totaled 80 texts or 9% the total texts produced. Giving commands was closely followed by the category of statements, which totaled 71 texts or 8%. The two least used learning strategies were making suggestions and modeling tasks, which were 4.3% and 3.2% of the total texts produced during all five gaming sessions, respectively.

Table 4.3 Learning strategy percentages of total texts produced
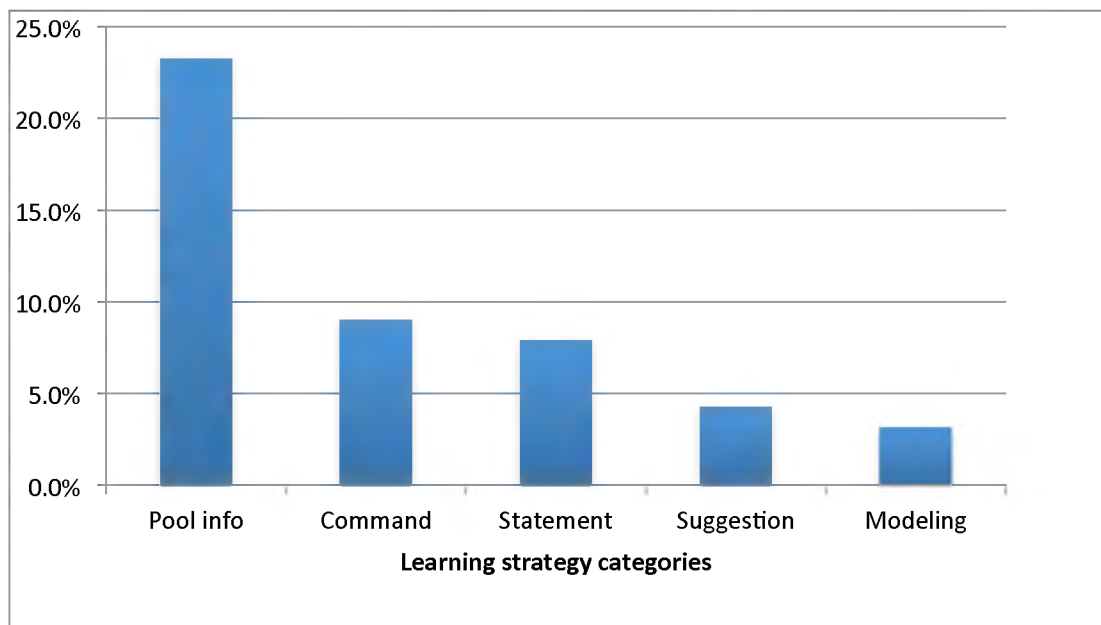
The learning strategies employed during each individual gaming session are displayed in Table 4.4. Each learning strategy category is shown as the percentage of total texts produced in that particular gaming session. For example, there were 139 texts produced during Session 1 and 31 of those fell into the category of pooling information; therefore, 22.3% of the total texts in Session 1 were categorized as pooling information.

By examining the percentage of total texts per learning strategy for each gaming session we can see that pooling information was not only the most common learning strategy overall, but was also the most common one for each individual gaming session as well. However, in Session 5 pooling information was only 1% more than the category of statements. From Session 1 to Session 5, pooling information dropped slightly, except in Session 3 where it spiked reaching the highest rate of 37.2%. The second highest strategy used overall was commands. However, per session, it is seen that it was lower than the statement category in both the Session 1 and 5. In Session 2, commands were

Table 4.4 Learning strategy percentages per session
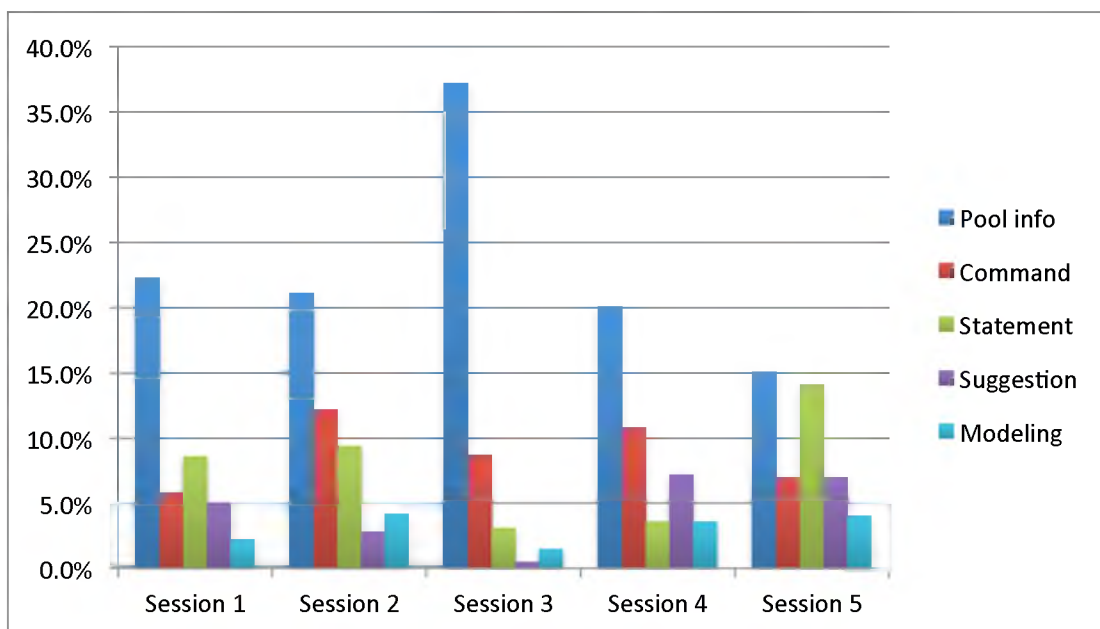
only slightly higher than statements, but commands more than doubled the number of statements in both the third and fourth sessions.

The category of modeling remained relatively low across all five gaming sessions with the highest rate occurring in Session 2, accounting for 4.2% of the 213 texts produced as seen in Table 4.4.

Communication Strategies

Research Questions 3 and 4 ask the following: Does *Guild Wars 2* provide opportunities for English language learners to negotiate input? What specific communication strategies do participants employ in negotiating input? *Guild Wars 2* does provide opportunities for English language learners to negotiate input, and this will be discussed in detail in Chapter V. The most common communication strategy used by participants was in the category of requests, which occurred 152 times, accounting for

17.2% of the 886 total texts produced by participants over all five gaming sessions (see Table 4.5). The checks category had the second highest rate, occurring 63 times and accounting for 7.1% of the total texts. The use of L1, self-correction and peer-correction rarely occurred in the data. None of these categories reached over 1% of the total texts across all five gaming sessions.

The results of the percentage of total texts produced for each communication strategy category per gaming session are shown in the Table 4.6. Requests had the highest rate of occurrence over all, but the highest rate for each individual session as well. Requests stayed relatively even across gaming sessions with the lowest rate occurring in Session 2 and accounting for 16% of the 213 total texts and the highest rate in Session 1 at 19.4% of the total 139 texts. Checks had a large spike in Sessions 2 and 3, reaching 8.5% in Session 2 and the highest rate in Session 3 at 11.7%. The causes are of this spike are discussed in the next chapter.

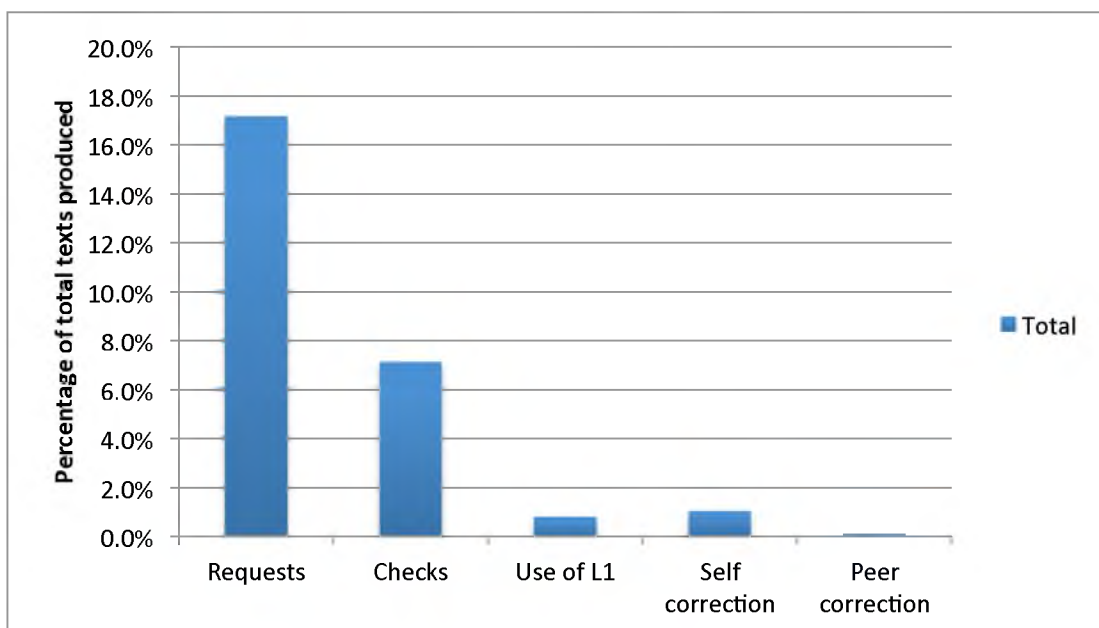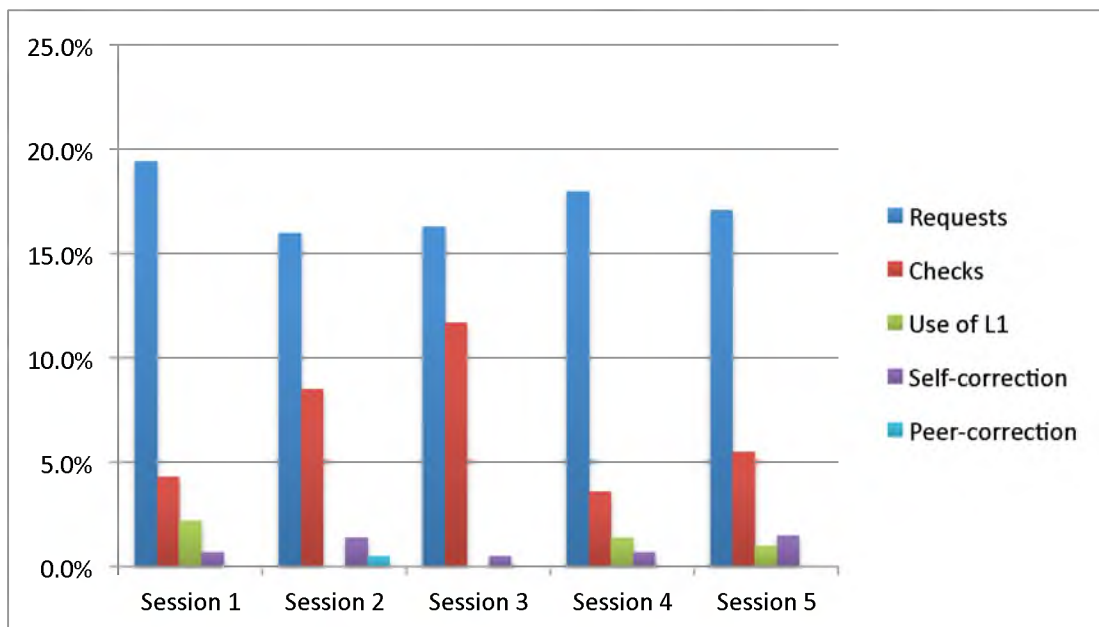Table 4.5 Communication strategy percentages for total texts produced

Table 4.6 Communication strategy percentages per session

Both the categories of requests and checks were broken down into subcategories and the results of each are shown below (see Tables 4.7 and 4.8). Specific requests had a higher rate of occurrence during all five game sessions. General requests were high in the first session, but then dropped for the following sessions (see Table 4.7). Clarification checks had the highest rate of occurrence across all five gaming sessions, and there waslarge spike in Session 3 (see Table 4.8).

Participant Attitude and Motivation

Research Questions 5 and 6 asked the following: What effect does playing *Guild Wars 2* have on the participants' attitude towards their English proficiency? Does playing *Guild Wars 2* increase the participants' motivation to learn English? A survey was given to each participant to gain insight into their perception of their English proficiency and general feelings about the game. The survey consisted of 8 statements with the numbers 1

Table 4.7 Request percentages per game session
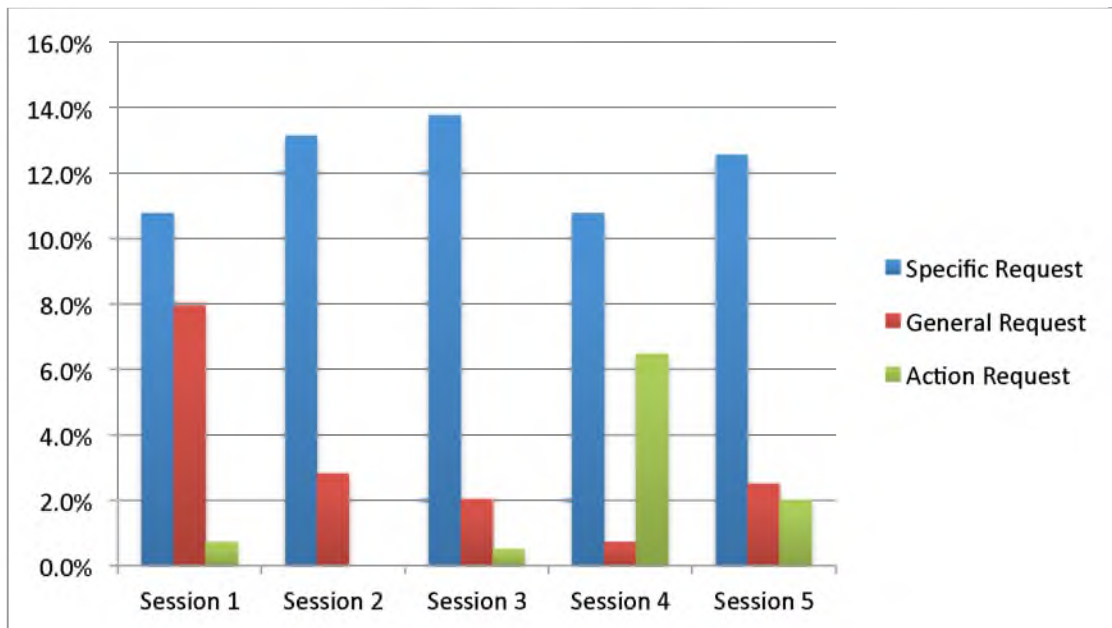
Table 4.8 Check percentages per game session
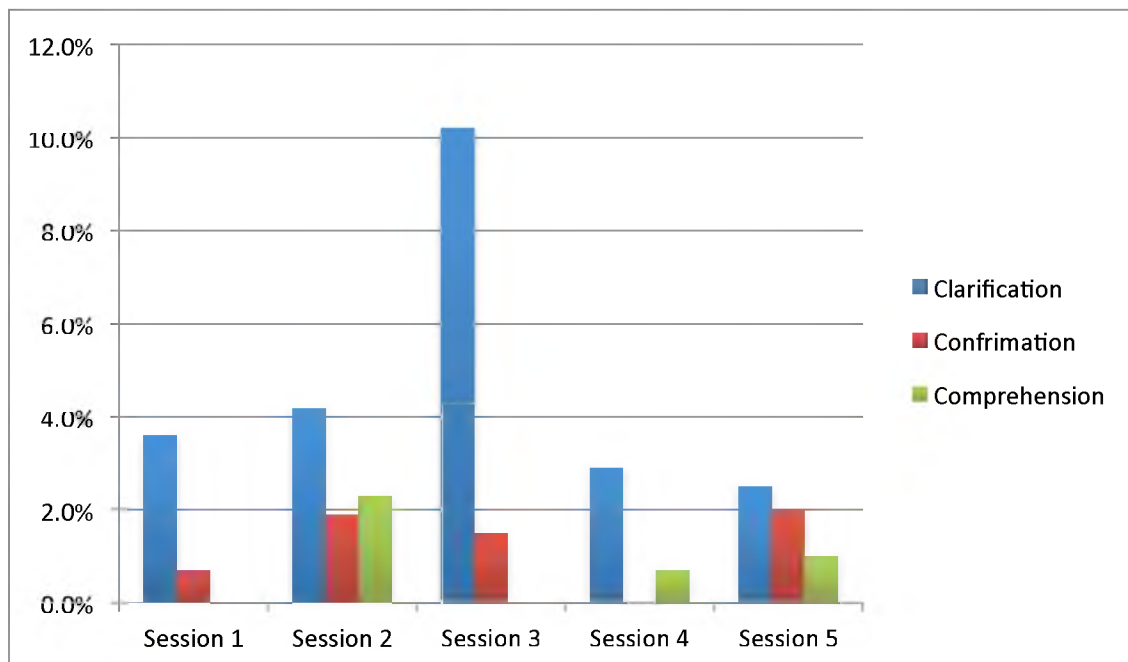
to 5 under each statement. They were told to circle the number that best described their feelings (see Appendix). They were told not to write their names on the survey. The results indicate that they all felt the game had positive effects on their English proficiency (see Table 4.9).

Connected Interaction

Connected interaction among participants occurred frequently. The interaction was tallied when participants gave an answer to a question, confirmed a message was understood, or responded to a previous message. There was a steady increase in connected interaction from the first to the last gaming session, but the highest peak occurred in Session 3 (see Table 4.10). In Session 1, 41.7% of texts produced were followed with response from another participant. Connected interaction rose to 44.1% in

Table 4.9 Response to postsurvey
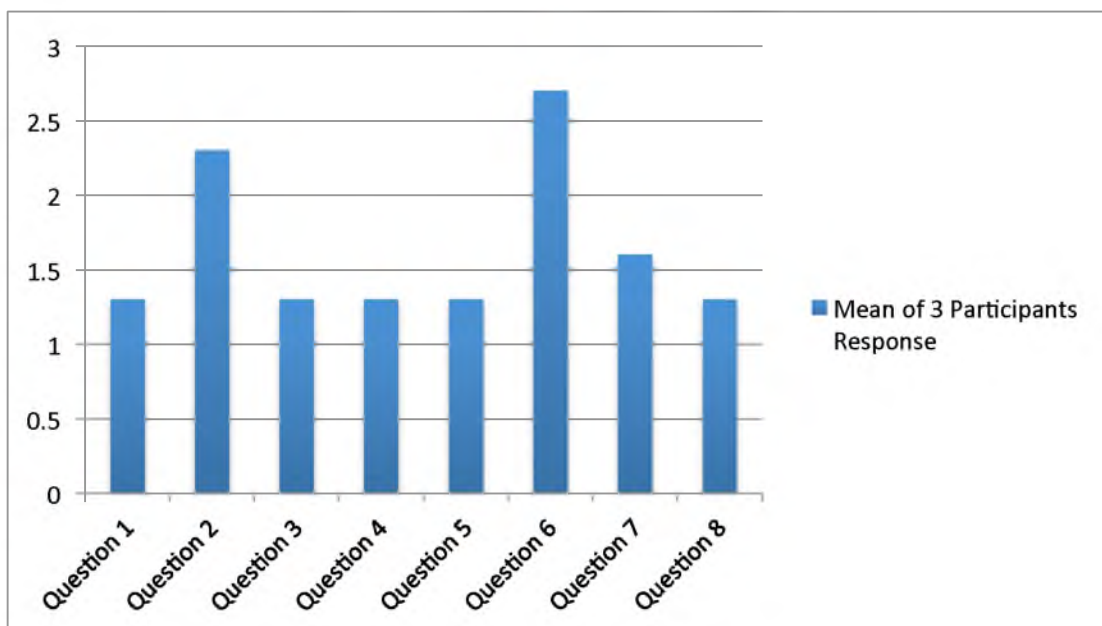
Table 4.10 Connected interaction
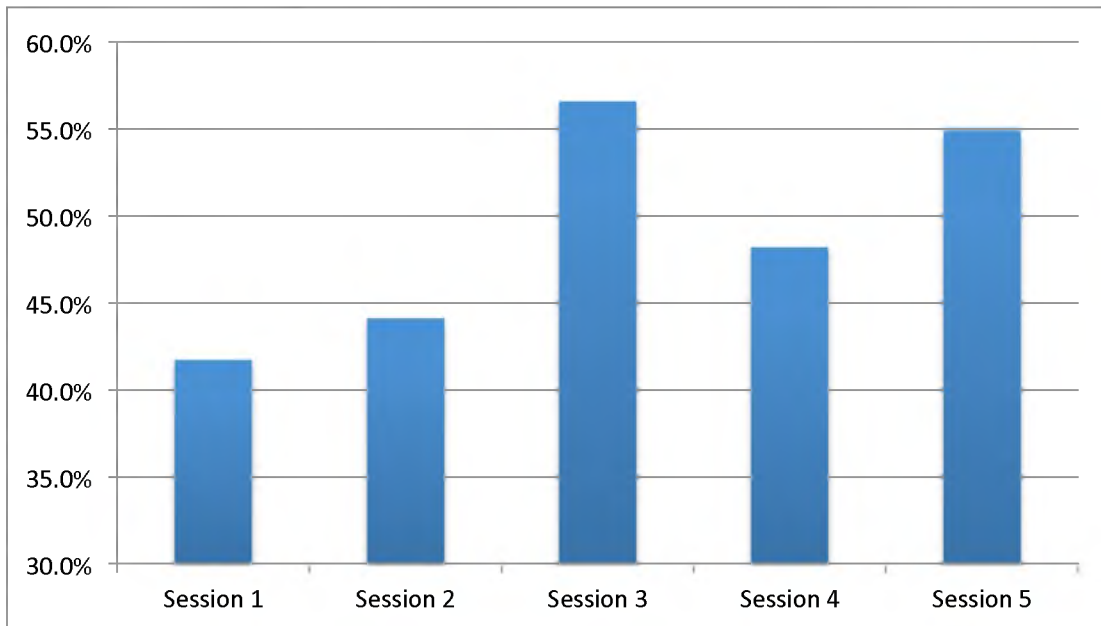
Session 2 and reached the highest rate in Session 3 at 56.6%. Sessions 4 and 5 also saw

an increase over the first two sessions at 48.2% and 54.8%, respectively. Forty-nine point

five percent of all texts produced by participants across all sessions were observed to be

connected interaction. To clarify, this means that of the 886 texts produced during the

study, 439 of those elicited a response from another player. The causes for these results,

including the Session 3 spikes, are discussed in the next chapter.

CHAPTER V

DISCUSSION

Introduction

The purpose of this study was to gain insight into the reasons that MMORPGs have shown to be beneficial tools for second language (L2) acquisition. This study categorized texts produced by ESL students while playing *Guild Wars 2* into learning strategies and communication strategies. Additionally, texts produced as a response to a previous text were tallied to record the degree of connected interaction that took place between participants. The quantitative data gathered are used to understand the players' interaction and the influence it has on language acquisition.

In this chapter, the results are discussed in terms of second language acquisition theory. It will be argued that MMORPGs are beneficial to L2 acquisition because they provide opportunities for L2 learners to produce large amounts of output; the output produced by one player is a meaningful source of input for the other players. Input allows for connected interaction, during which participants can focus on grammar forms, which can lead to modified output. Furthermore, players have the opportunity to negotiate both player-produced input and environmental input as a means to complete game tasks in a contextually rich virtual environment. Players are engaged in cooperative learning in much the same way as is deemed beneficial for L2 classrooms. In other words, learners experience both interdependence and individual accountability (McGroarty, 1993)

Finally, English learners perceive the experience to be beneficial to their English proficiency.

Output, Input, and Connected Interaction

Target-language output is fundamental for L2 acquisition to take place. Swain (1985) argued that output provides opportunities for meaningful and contextualized language use, and that output produced while interlocutors negotiate meaning leads to grammatical accuracy. Similar to Krashen's (1985) i + 1 theory, Swain's output theory claims output pushes the learner to produce language above their current level and test their hypothesis about language forms. If output production is central to L2 acquisition, then the massive amount of texts produced by the participants of this study is a strong indicator that MMORPGs have great potential as a tool for L2 learners. The participants indicated in the postinterview that they were being pushed in terms of their English output.

Output production in the form of text messages while playing *Guild Wars 2* was much higher than what might be typically expected in a traditional language classroom. Ninety minutes of gameplay averaged about 150 texts during the course of the study. It is difficult to imagine a 90-minute ESL class in which students produce as much target language output.

This is not to argue that playing MMORPGs outweighs the benefits of a traditional language-learning classroom, but it does illustrate the benefits that games can have for L2 learners who have the opportunity and willingness to communicate in the target language. Even though all 3 participants share the same native language, 879 of the 886 texts produced were in English. In an L2 classroom, students often resort to their L1 if a majority shares the same native language.

The data that were collected in this study give evidence that the participants were not only producing large amounts of output in English, but they were also reading one another's texts. Input from fellow participants often elicited additional output from other participants. Half of all texts written during the study were related to a previous message written by another player. Interestingly, the percentage of connected interaction increased as time passed in the study. Sessions 3, 4, and 5 all saw higher rates of connected interaction than the first two sessions. When one player asked a question, another player usually answered it; however, this type of interaction does not account for the majority of the connected interaction that took place. Much of the connected interaction took place in order to collaborate and share ideas and information in hopes of completing a task. Output in the form of sharing task information, knowledge, or ideas during game sessions were categorized as pooling information. As seen in the results section of this study, pooling information had the highest percentage of total texts during the course of the study at 23.4%. The next highest category was requests at 17.2%.

The category of pooling information stems from the cooperation learning strategy described by Chamot and O'Malley (2001). They define cooperation as "working together with peers to solve a problem, pool information, check a learning task, model a language activity, or get feedback on oral or written performance" (p 56). They argued that cooperation has positive effects on both attitude and learning. The participants were very interested in working cooperatively as a team as seen from the high number of times they pooled information to cooperatively complete a task in the game. They likely saw their combined knowledge as an excellent way to reach success, which simultaneously had a positive effect on their learning. As a group they knew they could do more than

they could as individuals, similar to the Vygostskian-based concept of the Zone of Proximal Development (ZPD).

A central idea of the ZPD is that students who work together on language tasks are stronger in a group than any one person would be on their own. In essence, a group's potential language learning and growth is more than its individual parts. In the context of the game, the participants in this study were stronger and more likely to complete a task as a group than they would have been playing the game individually. Not only are enemies defeated more easily as a group, but also one player may notice something key to completing a task that the others did not notice, adding to their potential group success. This cooperation required the participants to produce L2 output in order to coordinate and plan their path to successful task completion. The participants were pushed in terms of their L2 level because coordination required them to use language they likely did not have much experience with before playing *Guild Wars 2*.

In terms of language acquisition, as a group, the participants' potential for learning was greater because they were exposed to language form and vocabulary from one another's output, which was most commonly in the form of pooling information. An example from the data in this study is given which demonstrates production of output through pooling of information, but first, a brief explanation of how tasks are set up in the game is needed.

In *Guild Wars 2*, the tasks that players complete come in several different forms. The tasks are marked on a player's map either by a heart-shaped icon or a green star icon. The heart-shaped icons indicate tasks that are specific to an area. Green star icons are specific to the story of a specific player that is based on the race and profession the character has

chosen.

The participants' characters in this study were all the same race and had the same green star tasks for the first two sessions of the study. This means that they could work together on their green star tasks as a group. The heart-shaped tasks could also be done as a group as long as the players were in the same general area.

The following conversation occurred during Session 2. One of the participants, Thief, has finished one of the heart-shaped tasks. He wants to know if his fellow players have finished it as well. Another player, Pine, does not know how to check to see if he has successfully completed the task. Thief explains to Pine where he can find the information. Later, Pine tells the others where they should go next and why. Bolded texts were categorized as instances of pooling information.

1. Thief: Do you guys finish that?

2. Thief: Finish?

3. Pine: May be

4. Pine: No sure

5. **Thief: You can check heart-shaped is full?**

6. **Thief: Look map (Thief circles the heart on the map)**

7. Pine: Yes

8. Pine: So let's go another palce

(Some texts omitted.)

9. Pine: See the green point?

10. **Pine: That is the main task**

11. **Pine: We should complete that on**

12. Pine: One

13. Thief: We should come here

14. Thief: Finish different work

In lines 5 and 6, Thief explains that Pine can see if he completed a task by looking at the heart icon on the map. Thief's output is Pine's input, to which he produces additional output, suggesting that they go to a different place as seen in line 8. Later, Pine pools information telling others what the green icon means, and suggests they go there. Thief reads his text and says that instead of going to the green icon they should do something different.

To summarize, by pooling information participants had opportunities to experiment with language form and produce output in the context of completing a task, as Swain (1985) suggests is central L2 acquisition. From this interaction, the potential for learning was more than it could have been individually, which relates to the idea of the ZPD. However, L2 learners need much more than just comprehensible input and output for interaction to lead to gains in the target language. One of which is the need for form-focused feedback that leads the learner to make modifications to their output (Pica, Lincoln-Porter, Linnell, & Paninos, 1996).

Form-focused Feedback and Modified Output

As discussed above, connected interaction was common during the course of the study. Participants responded to one another's output and produced additional output. This section will argue that the connected interaction that took place acted as a type of form-focused feedback that could elicit modified output.

In order for interaction to lead to acquisition gains, L2 learners need to receive

feedback from interlocutors and produce modified output. "Interactional input provides a forum for learners to readily detect a discrepancy between their learner language and the target language and that the awareness of the mismatch serves the function of triggering a modification of existing second language knowledge" (Gass & Varonis, 1994, p. 299). Specifically, L2 learning through social interaction requires three needs, the need for comprehensible input, feedback focused on form, and modification of output (Pica, Lincoln-Porter, Linnell, & Paninos, 1996).

Social interaction that facilitates feedback and modified output does not necessarily require a native speaker (Pica et al., 1996). In the Pica et al. (1996) study, L2 learners interacted with other L2 learners, which facilitated opportunities for meeting the three needs mentioned above. This gave optimism for L2 learners who did not have opportunities to interact with native-speakers. Even without a native speaker, L2 learners produced modified output based on feedback from other L2 learners. In this study, participants gave form-focused feedback to each other, albeit implicitly, which led to modified output. An example from the current study is given below.

In Session 3, the green-star task of 1 of the participants was different than the other 2 participants. At first they did not realize that 1 of their peer's tasks was different. By asking each other questions and pooling information they eventually realized that Thief had a different task than Mary and Pine. Over the course of this interaction, 2 participants modified their output after receiving implicit form-focused feedback from another participant.

In the conversation below, 2 of the participants refer to the green star tasks as the "mainly task," instead of what a native-speaker of English might call the "main task."

Thief and Mary write, "mainly task" several times until Pine later writes, "main task." After Pine's use of "main task" the other 2 eventually modify their output and start writing "main task." Pine implicitly provided form-focused feedback to the other 2 participants, and this led them to modify future output.

The texts from participants below occur over the 2-hour period of Session 3. The words "main" and "mainly" are bolded to highlight the discussion of modified input and form-focused feedback.

1. Mary: We need to do the **mainly** work

2. Mary: Follow the green line

3. Thief: I don't know how to do this

(Some texts omitted.)

4. Mary: Wait

5. Mary: What is your **mainly** task?

6. Thief: Did you see daily task?

7. Pine: The green one is the **main** task

(some texts omitted)

8. Mary: U need finish the **mainly** task

(Some texts omitted.)

9. Thief: I found my **mainly** task.

10. Thief: But you guys cannot help me… maybe

(Some texts omitted.)

11. Mary: I think we have different **main** task

12. Thief: I know

(Several minutes later)

13. Pine: So we have to figure what to do later

14. Thief: finish

15. Mary: I think our **main** task is different

16. Thief: Yes

17. Thief: Agree

(The following text occurred at the beginning of Session 4.)

18. Thief: What's the **main** task?

Both Mary and Thief refer to the green star task as the "mainly" task as seen in lines 1, 5, 8, and 9. Pine is the only one who uses the correct form of the word main in line 7. Perhaps Pine knew that mainly was an incorrect use of the word and in line 15 he writes, "The green one is the main task." Mary must have noticed that Pine used "main" instead of "mainly." Later, in lines 11 and 15 he writes, "I think our main task is different." Not only does Mary correct himself in this instance but Thief does so as well. In Session 4 Thief wrote, "What's the main task?" In fact, in all the following game sessions all the participants use "main task" instead of "mainly task" when referring to the green star tasks.

In the conversation above lines 1, 2, 7, 8, 9, 10, 11, and 15 were categorized as instances of pooling information. They are writing texts in order share information about the task at hand. By pooling information they have opportunities to experiment with language form in the context of completing a task. During this interaction, 2 participants modified their output from "mainly" to "main" after seeing Pine use "main" in the correct form. This is one of several instances in which participants modified output based on

implicit form-focused feedback. Further evidence that this occurred comes from the interviews conducted with participants after the study concluded.

During the poststudy interview and when asked whether or not he felt that the experience of playing *Guild Wars 2* helped his English, 1 participant indicated he learned a lot from seeing the structure of the other players' texts. He said he thought he should have "done a sentence one way" but when he saw someone do it differently he would change the way he did it. Although he did not receive explicit form-focused feedback, he received implicit feedback that indicated to him that something he had written was done so incorrectly, and he then modified future output to match what he had seen others do. This gives evidence that he was focused not only on the message but on form as well.

Another participant indicated he was focused on form as well. He said he found it difficult to write something quickly because he needed to first think of a message in Chinese before translating it to English. Once he had the right words in English, he said he wanted to make sure he used the correct grammar and that took him some time to work out. He did not mention whether or not he used other players' texts as an example for producing his own messages, but the data collected do show that participants often changed their output to copy a form seen in earlier messages.

The third participant seemed less focused on form and said that he felt very comfortable using English because all of the participants were Chinese. He said that he knew that many of the messages he wrote were grammatically incorrect but felt the others would understand him anyway. Although, he said this, he did make modifications to his output during the course of the study.

From the discussion above, it can be argued that MMORPGs allow for implicit form-

focused feedback leading to modified-output. The participants' dialogue while playing *Guild Wars 2* met the three needs to make interaction beneficial to language acquisition. The participants received comprehensible input, they received implicit form-focused feedback on their output, and they then modified their output according to the feedback received.

Negotiation of Meaning

The results from the data collected in this study indicate that the two most common communication strategies employed by participants were requests and checks, which accounted for 17.2% and 7.1% of the total texts produced, respectively. Use of L1, self-correction, and peer-correction were virtually nonexistent. Combined, corrections made up less than 2% of the total texts produced. The reason that the participants rarely used their native language is likely because they were asked to only use English while playing the game. As for self and peer-corrections, they were never told that they should correct each other. They were simply told to play the game together and to use English, so it is likely that if they did notice an error from another player, they ignored it. Although players did modify the form of their output as discussed above, this was not counted as a correction. Texts were counted as corrections only when someone immediately corrected himself or explicitly corrected a peer.

Guild Wars 2 enables players to negotiate both player-produced input and environmental input as a means to complete game tasks in a contextually rich virtual environment. Requests and checks are communication strategies that the participants used to negotiate both environmental input and player-produced input. Researchers have stressed the importance of negotiation of meaning and input as an important part of L2

acquisition (Long, 1996; Swain, 1985; Varonis & Gass, 1985). Learners should be pushed in terms of their output and input.

The L2 learners in this study were exposed to input that was above their level of English proficiency. It is impossible to know from the recorded data exactly what they did and did not understand; however, what was clear was that they were putting in a very strong effort to make sense of the virtual world. In this sense they were processing L2 forms and vocabulary above their current L2 level.

At times, participants would have difficulties in understanding exactly what another player was asking or trying to tell them. Thus, players would engage in negotiation of meaning in order to reach an understanding of the intended messages. Negotiation of this sort is referred to as human input in this study. A player types a text and another player does not understand it. If negotiation is key to language acquisition then MMORPGs are beneficial in that they provide opportunities to negotiate meaning. An example from this study is illustrated below. The bolded texts were categorized as checks.

1. Thief: I need help

2. Thief: Look map

3. Thief: Come here

4. Thief: Hey guys

5. **Pine: Can you say again?**

6. Thief: Look at map

7. **Pine: You need help?**

8. Thief: Yes

9. Thief: Let's go? you and me?

10. Mary: Follow U

11. Mary: U go first

12. Thief: Go go go

13. Thief: Fight

In the text above Thief is trying to get help from Mary and Pine. The other 2 do not understand what Thief needs help with and Pine asks for clarification as seen in line 5. Thief circles an area on the map to show them where to go but Pine is still not sure that he understands as seen by the confirmation check in line 7. Thief confirms that he does need help. However, most negotiation of meaning occurred in the context of understanding how to complete tasks in the game, or what is referred to in this study as environmental input.

To work out an understanding of the environmental input, participants sent texts to one another and work out the meaning as a group by negotiating meaning. As they negotiated input that originated from the environment of the game, it is arguably very similar to the negotiation that takes place in a face-to-face conversation. Obviously, they could not negotiate with the source of the environmental input because it is a computer program. Instead, they would try to work out the meaning of the input by talking to each other. In this situation, L2 learners negotiate the meaning of something they see in the target language that is not understood by anyone in the group. For example, if two L2 learners who speak different L1s see a menu at restaurant, a sign at the airport, or a conversation on television that neither of them understand, then the input (the menu, sign, or conversation), may lead to the two L2 speakers to engage in a conversation in order to reach an understanding about the input.

Negotiation of environmental input often took place via requests for information. For example, a participant indicated that he did not know what they were supposed to do and wrote, "I have no idea about this task." By writing this, the participant indicated to others that he did not understand what needed to be done to successfully complete the task at hand. Later he requested information from the other players and wrote, "How to finish this?" The players then worked out the details of tasks by requesting specific information from each other and pooling information until they eventually formed a plan and tried it out. Other times they simply gave up and moved on to a different task.

Another example of negotiation of environmental input that occurred in the game is illustrated in the conversation between participants that follows. At this point in the game, the participants were struggling to complete tasks because they kept getting defeated by enemies and could not understand why this kept happening. What they did not realize was that they needed to repair their character's equipment. The more combat a player engages in, the more their equipment suffers, and players need to go to a town and have it repaired to be at full strength. The participants' equipment had become completely destroyed. When this happens, the broken equipment is automatically unequipped, leaving the players' characters shirtless (see Figure 5.1). The red boxes in the screen shot below were placed there to hide the participants screen names. The conversation that follows takes place as the participants negotiate what needs to be done to remedy their current situation. Bolded texts were categorized as instances of clarification *checks* and underlined texts were requests. Often checks came in the form of a request for specific information, which is why some texts are both bolded and underlined.

Figure 5.1 Participants lose their clothes. Screen shot of participants' broken equipment from *Guild Wars 2*.

1. <u>Pine: What's wrong about our clothes?</u>

(Some texts omitted)

2. Thief: We should fix our equipment

3. Mary: We need find somewhere

4. Mary: To fix

(Some texts omitted.)

5. Thief: Find me

(Some texts omitted.)

6. Thief: You should go somewhere to fix your equipment

7. **<u>Pine: How to fix equipment?</u>**

8. Pine: How

9. Thief: Just talking with NPC

10. **<u>Pine: Where?</u>**

11. Mary: See map

12. Thief: Look map

13. Pine: Ok

14. Thief: Follow me

Pine did not understand why his character suddenly appeared shirtless. He indicated his misunderstanding by requesting information from the other 2 participants as seen in line 1 above. The other 2 responded to Pine by telling him that they needed to fix their equipment and that they needed to go somewhere to do that, as seen in lines 2 and 3. Pine still did not understand how to do this and asked for clarification as seen in line 7. Thief clarified by telling Pine that he needed to speak with an NPC. Pine then asked for further clarification by asking where. Eventually, they found where they needed to go and successfully fixed their equipment.

In this example, the environmental input was the loss of clothing to their characters. To remedy their problem they engaged in conversation consisting of communication strategies, and used them to negotiate meaning by employing checks and requests. This enabled the participants to solve their equipment problem and succeed where they had been failing. From that point on they knew to check their equipment and have it repaired when necessary. In essence, they modified their future actions based on what they had learned from negotiating environmental input.

In this study, the number of times participants' negotiated input was quantified by placing texts into communication strategy categories. As seen from the data, Session 3 is of particular interest in terms of negotiating input because both checks and specific

requests accounted for more total texts produced than the other four sessions. Checks accounted for 11.7% of the total texts produced in Session 3, most of which came in the form of clarification checks. Clarification checks made up 10.2%, more than double that of any other session. It is also worth noting that the rate of connected interaction reached 54% in Session 3, the highest rate of the five sessions. Session 2 had a connected interaction rate of 44% and the rate in Session 4 was 48%. This means that 54% of the texts produced in Session 3 were in response to a previous text produced by a different participant indicating the participants paid more attention to one another's texts than other sessions.

The data indicate that Session 3 required more negotiation of input than other sessions. Since negotiation is beneficial for language acquisition, understanding what was happening in Session 3 can shed some light on the language benefits of MMORPGs.

The first reason for the higher rate of interaction and negotiation in Session 3 stems from the main tasks each individual player needed to accomplish. Up until this point, the 3 participants had the exact same main task, as discussed previously in this study. The session begins with the participants talking to each other and eventually figuring this out through a series of clarification checks and requests for information. A portion of the conversation is given below. Bolded texts were categorized as instances of clarification checks and underlined texts were requests.

1. <u>Pine: Do you get the task?</u>

2. **Thief: Which?**

3. Pine: Twilight of the wolf

4. Mary: Follow the green line

5. Thief: No

6. (Some texts omitted.)

7. Thief: Can we just finish daily task?

8. **Mary: What do u need to do?**

9. (Some texts omitted.)

10. Thief: I found my mainly task.

11. Thief: But you guys cannot help me…maybe

12. Pine: What is that?

13. Thief: A Pup's illness

14. **Pine: Where is that?**

The conversation continues and the player with the different task, Thief, decides he will go and do his task alone. He tries to accomplish the task by himself but runs into trouble and finds that it is too difficult to do on his own. He then *requests* help from the other 2 and they come to help him. However, because the other 2 do not have the same task, they cannot see the information related to the quest that Thief sees. This elicits a series of requests and checks in order to share task related information so everyone knows what to do to succeed. This is why Session 3 elicited so many more checks and pooling of information than other game sessions. The participants were confused as to how to proceed in the game, thus they needed to work out the environmental input, which led a higher number of negotiations to take place.

Once Thief's task is finished, the group engages in another conversation and discovers that Thief's next task is still different from Pine and Mary's current task. They decide that, as a group, they will try to complete Mary and Pine's task first and, then,

later go back and try to complete Thief's task. This process requires another series of requests and checks. Thief cannot see the details of the other members' task just like the other 2 could not see Thief's task before. Finally, by the end of Session 3, all the participants end up with the same main task.

Most of Session 3 is spent going back and forth between Thief's tasks and the other 2's tasks. The reason there were so many instances of negotiation was because they needed to ask each other the details of the tasks that they did not share. Often they would have difficulty explaining the details of a task, which elicited additional checks and requests. It was not until the very end of session three that the 3 players tasks became the same once again. Thus, when tasks were not the same for the entire group, this led to more instances of requests and checks than when tasks were the same for the entire group.

To summarize, MMORPGs provide opportunities for negotiation that derive from a lack of understanding environmental input and the need to share information. The negotiation takes place between language learners and engages them in negotiation of meaning, which is believed to be beneficial for language acquisition. Much like an information gap activity, players must request information from the others in order to successfully complete tasks.

Cooperative Learning

In order for L2 learner interaction to be meaningful, output needs to be contextually appropriate to particular content (Swain, 1995). L2 learners produce output based on a particular topic (content) and learn form from this interaction. Form and content combined into a single medium of instruction has become popular in recent decades and

is referred to as Content Based Instruction (Grabe & Stoller, 1997).

Content Based Instruction (CBI) combines formal accuracy and relevant content to have learners practice the target language form to complete language tasks while simultaneously learning about content. Students in a CBI setting use what they have learned about the language to accomplish a communication activity that is centered on content.

Tasks that have learners practice language forms through content are very similar to the tasks that the participants complete while playing *Guild Wars 2*. They use language they have previously learned in the context of cooperatively completing tasks and challenges presented in the game. They are practicing language functions, the most common being pooling information, commands, requests, checks, and learning content, how to complete tasks and progress in the game. When attention is given to each other's language form, at times they may modify their output.

The conversation below occurs just after the conversation mentioned in the previous section. Thief decided to try to complete his task on his own because it was different than the task of the other 2. He runs into trouble and requests help. The others come to help and in turn he then goes to help them with their tasks. This process is repeated a number of times until all 3 players get to a point when their tasks become the same once again. The conversation below illustrates the similarities MMORPGs have to that of an information gap activity that is commonly used in language classrooms.

1. Thief: You guys can help me

2. Thief: Come here

3. Mary: Where are u?

4. Thief: Look at map

5. Mary: U need fight?

6. Thief: Yes

7. Pine: hey

8. Pine: I behind you

9. Pine: How to finish this

10. Thief: I hope I know

11. Thief: I have no idea about this task

12. Pine: What it says?

13. Thief: nothing

14. Pine: Point your mouse on the task

15. Pine: And you get the details

16. Thief: Bring the winter sage to cloud in hoelbrak

17. Pine: What is that mean?

In the conversation, the 2 players are asking the 3rd player for information that appears on 1 player's screen but not on the others' screens. In Line 12 Pine asks Thief what the on-screen prompt says for his task. When Thief answers "nothing." Pine tells him where task information can be found. Thief is then successful in finding that information and relays it to the other 2 players. After the players go back and forth for a while longer, Mary and Pine help Thief successfully accomplish his task.

Once Thief's task is finished they engage in another conversation and figure out that Thief's next task is still different from Pine and Mary's current task. They decide that as a group they will try to complete Mary and Pine's task first and then later go back and try

to do Thief's task. This requires another series of info-gap-like activities. Thief cannot see the details of the other 2's task just like they could not see his before.

Slavin (1980) writes that cooperative learning works best when leaners have structured and focused objectives that hold individuals accountable for overall group performance, and a well-defined group reward system (p.337). The participants in this study had structured game tasks that included individual accountability. The group was literally weaker and defeated more easily if one participant was not trying his best to accomplish the task. There were both group rewards and individual rewards for cooperation. As a group they would get better equipment improving their overall group's strength, and as individuals they would gain more experience points by defeating stronger enemies and bosses thus leveling up their individual character's skills and abilities. Bosses would be near impossible to defeat as an individual player.

Evidence that the participants felt individual accountability comes from the recorded interview after the study was completed. They all said that they kept a dictionary nearby and referred to it often when they came across a word in a task that they did not understand. Their desire to contribute to the overall success of the group motivated them to look up words in the dictionary. One participant indicated looking up words made him "feel better." Slavin (1980) says cooperative-learning techniques can improve students' self-esteem (p. 338).

Participants' Perception of the Effect of *Guild Wars 2* on their English

After the study concluded, the participants were asked a number of questions relating to their feelings about the game in general, as well as about its effect on their English proficiency. Additionally, a survey was given to each participant asking similar questions

(see Appendix). They were told not to write their names on the survey. The survey was to give them an opportunity to respond to the study anonymously. Generally, the participants gave the same answers in the survey that they did in the face-to-face recorded interview.

The participants all said they really enjoyed the game. All 3 indicated that one of their favorite aspects of the study was working as a team to complete tasks. They also said they really enjoyed leveling up their characters and acquiring new abilities and skills and testing out the new skills. It is not surprising that they enjoyed the game since they all indicated they liked video games before the study began. What is interesting is that even though they were required to communicate in English it did not frustrate them to the point that they were no longer having fun.

All the participants empathetically said that they definitely learned a lot of new vocabulary over the course of the study and that it was very beneficial for their overall English proficiency. One participant mentioned that it was beneficial to play the game with people whose English was better than his own. Although it seemed that all 3 participants were at about the same level of English proficiency, his comment illustrates that he felt he learned from others through the interaction that took place over the course of the study. They all said that they thought the game was a great way to practice their English. One added that he felt more comfortable making mistakes because he was not face-to-face with those he was communicating.

It is inconclusive whether or not the game influenced the participants' motivation to learn English. They all indicated that they would continue to play the game after the study concluded if they had time. The participants kept the game after the study

concluded and were told they could play as much or as little as they wanted by themselves or with anyone else they wish. When asked if they would play other games in English after the study, 2 said maybe they would and 1 said that he already played another game called *League of Legends* in English.

Conclusion

This study used categories of learning and communication strategies to quantify the text produced by participants while playing the MMORPG *Guild Wars 2*. The data answered the research questions in this study and found that the most common type of learning strategy employed was in the category of pooling information, which far outnumbered the other learning strategies of commands, statements, suggestions, and modeling. Furthermore, the study found that MMORPGs do support opportunities for language learners to negotiate meaning in the form of player-produced input and environmental input. The most common type of communication strategy used while negotiating meaning was in the categories of requests and checks. Finally in response to research Questions 5 and 6, this study found that players perceived the interaction in *Guild Wars 2* to be beneficial to acquisition of English. However, whether or not the game increased their motivation to learn English is inconclusive.

The quantitative data from categorized texts was used to analyze participant interaction in terms in second language acquisition theory. This study argued that MMORPGs are beneficial to L2 acquisition because they provide opportunities for L2 learners to produce large amounts of output as they pool information and respond to one another's requests for information and work cooperatively to complete tasks. Output produced by one player is a meaningful source of contextual input for other players,

which elicits connected interaction between players. Participants' implicit focus on form can lead to modified-output. Further, players have the opportunity to negotiate both player-produced input and environmental input as a means to complete game tasks in a contextually rich social environment. Finally, players engage in cooperative problem solving that share many characteristics with language classroom activities deemed beneficial for language learning.

The benefits that video games, and specifically MMORPGs, have for language learners show a lot of potential. Learners can both learn vocabulary and form through interaction with other players and through completing the game's tasks. Anonymity can lower affective filters and provide more comfort with language experimentation than a face-to-face encounter. Interaction is especially advantageous for language learners who do not have access to face-to-face interaction with native speakers because of the social nature built into MMORPGS. These games provide access to a community of native speakers and other language learners that might not otherwise be available to language learners. Further, motivation may be raised due to the autonomy that players have while playing MMORPGs.

There were several limitations in this study that can guide future research. While MMORPGs do provide opportunities to interact with native speakers, the participants in this study did not engage in much conversation with native speakers of English. This limitation probably comes from the request that participants play the game as a group. They were not asked to try to participate with players outside of their group. There were always native speakers of English playing the game around them, and they often joined in the group events. It is unknown whether or not they paid attention to anyone else's

conversations. Additionally, they did not have a strong need to talk to anyone outside the group. As a group of three, they were strong enough to complete many of the lower level tasks without a tremendous amount of trouble. If they had reached a higher level, the participants could have participated in the group dungeon tasks, which require a group of five players. A research study with a single nonnative speaker of English could see interesting results in terms of interaction with native speakers of English while playing an MMORPG.

Another limitation was that all 3 participants share the same native language. The hope was that participants from different native language backgrounds could be found but unfortunately the only students who indicated an interest in participating were all native speakers of Chinese. This likely contributed to the lack of attention paid to conversations outside of the participant group. It is important to note that even though they shared an L1, 99.2% of all the texts they produced were done so in English. It should also be noted that participants sharing the same language could also be interpreted as a benefit rather than a limitation. Participants stated that they were more relaxed and felt less stress in using English during the gaming sessions because they knew that the group members were all speakers of Chinese.

A study that included participants who do not share an L1 would give greater insight to the role of form-focused feedback and modified output. This study argued that modified output was produced from implicit form-focused feedback. The total number of times this occurred was outside the scope of this study unfortunately but could make a very interesting follow-up study. Learners would be more likely to notice each other's grammar mistakes if they did not share an L1. The result might lead to more explicit

feedback and perhaps more modified output.

Video games' effect on language still has a long way to go to fully understand the benefits and implications. Games that aim to improve language acquisition have been around for some time, as have MMORPGs that aim to create massive social communities. It is not certain what the future will bring in terms of language acquisition technology. One day, linguists and game developers might create Massive Multi-learner Online Language Spaces (MMOLSs) that are just as engaging as they are beneficial for L2 acquisition. What is certain however, is that technology will rapidly continue to develop and so will its applications. Whether MMOLSs come to fruition or not, the future setting of language acquisition is likely to bare little resemblance to the classrooms of today.

APPENDIX

POSTSTUDY PARTICIPANT SURVEY

Circle the number that best describes how you feel.

1= Strongly Agree
2= Agree
3=Neutral
4=Disagree
5=Strongly Disagree

1. I enjoyed playing Guild wars 2.

   1   2   3   4   5

2. Guild Wars 2 was easy to play and understand.

   1   2   3   4   5

3. I will keep playing Guild Wars 2 after the study concludes.

   1   2   3   4   5

4. I learned many new words in English while playing Guild Wars 2.

   1   2   3   4   5

5. My English improved from playing the game.

   1   2   3   4   5

6. I enjoyed talking to the other participants in the game.

   1   2   3   4   5

7. Video games are a good way to practice and improve my English.

   1   2   3   4   5

8. When I didn't know how to complete a task, I would ask other players.

   1   2   3   4   5

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