DUNGEON FLOW:
PLAYER EXPERIENCES OF FLOW IN WORLD OF WARCRAFT

By

RYAN THAMES

A Thesis Submitted to the Graduate Faculty of
WAKE FOREST UNIVERSITY
in Partial Fulfillment of the Requirements
for the Degree of
MASTER OF ARTS
in the Department of Communication
August 2010
Winson-Salem, North Carolina

Approved By:

Michael David Hazen, Ph.D., Advisor

Examine Committee:

Marina B Krcmar, Ph.D.

Jim Black, J.D.
Acknowledgements

I want to thank everyone that offered support, encouragement, and advice during the course of this project, including all of the faculty and staff of the Wake Forest Communication department, as well as my peers. First, I would like to thank my advisor, Dr. Michael Hazen, for believing in the project throughout and particularly for encouraging me to think outside the box with my research and to choose methods that best suited my question. His brainstorming sessions prompted me to think about the project from a number of angles. I would like to thank Dr. Marina Krcmar for her timely and indispensable advice. She was immensely helpful when I was organizing the thesis and contextualizing the results of my research. I would also like to thank Jim Black for stepping in and offering unique insight from a video game industry insider. His insights and responses to this study will be helpful as I pursue further research in video game studies. Dr. Ananda Mitra helped a tremendous amount in the early stages of the project, and deserves special thanks for offering his expertise in conducting focus group research. I would especially thank my family for standing by me during my research, especially my wife, for her thoughtful critiques and constant support.
# Table of Contents

Abstract...........................................................................................................................................vii

Chapter I: Introduction and Review of Literature...............................................................1

Introduction..................................................................................................................................1

Review of Literature...................................................................................................................2

A Description of MMOs.............................................................................................................3

*World of Warcraft*.....................................................................................................................6

Research on MMOs....................................................................................................................7

The Concept of Flow....................................................................................................................11

Summary and Research Questions..........................................................................................16

Chapter II: Methods.........................................................................................................................18

Phase I Methods.........................................................................................................................18

Phase I Implications....................................................................................................................21

Phase II Methods.......................................................................................................................23

Phase II Questions.....................................................................................................................25

Phase II Approach to Data Analysis.........................................................................................30

Chapter III: Results..........................................................................................................................34

Analysis for H1............................................................................................................................34

Mood.............................................................................................................................................35

Balance of Skills to Challenges.................................................................................................37

Concentration...............................................................................................................................42

Loss of Self-Consciousness........................................................................................................43
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Merging of Action and Awareness</td>
<td>46</td>
</tr>
<tr>
<td>Altered Time Perception</td>
<td>47</td>
</tr>
<tr>
<td>Control Potential</td>
<td>48</td>
</tr>
<tr>
<td>Clear Goals with Immediate Feedback</td>
<td>49</td>
</tr>
<tr>
<td>Results for H1</td>
<td>50</td>
</tr>
<tr>
<td>Analysis and Results for RQ1</td>
<td>50</td>
</tr>
<tr>
<td>Interview Data Analysis</td>
<td>51</td>
</tr>
<tr>
<td>Time-Synched Recording Analysis</td>
<td>53</td>
</tr>
<tr>
<td>Results for RQ2 and RQ3</td>
<td>54</td>
</tr>
<tr>
<td>Game Interface</td>
<td>55</td>
</tr>
<tr>
<td>Game Environment</td>
<td>59</td>
</tr>
<tr>
<td>Participant Actions</td>
<td>61</td>
</tr>
<tr>
<td>Participant Dialogue</td>
<td>62</td>
</tr>
<tr>
<td>Other Player Dialogue</td>
<td>63</td>
</tr>
<tr>
<td>NPC Dialogue</td>
<td>64</td>
</tr>
<tr>
<td>NPC Actions</td>
<td>65</td>
</tr>
<tr>
<td>Other Player Actions</td>
<td>66</td>
</tr>
<tr>
<td>Additional Data for Participant C</td>
<td>66</td>
</tr>
<tr>
<td>Game Interface</td>
<td>67</td>
</tr>
<tr>
<td>Game Environment</td>
<td>67</td>
</tr>
<tr>
<td>Participant Actions</td>
<td>68</td>
</tr>
<tr>
<td>Participant Dialogue</td>
<td>69</td>
</tr>
<tr>
<td>Other Player Dialogue</td>
<td>70</td>
</tr>
<tr>
<td>Chapter Title</td>
<td>Page</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>NPC Dialogue</td>
<td>70</td>
</tr>
<tr>
<td>NPC Actions</td>
<td>71</td>
</tr>
<tr>
<td>Other Player Actions</td>
<td>72</td>
</tr>
<tr>
<td>Chapter IV: Discussion</td>
<td>73</td>
</tr>
<tr>
<td>Flow Experiences</td>
<td>73</td>
</tr>
<tr>
<td>The Skills/Challenges Balance and Other Flow Elements</td>
<td>74</td>
</tr>
<tr>
<td>Implications of the Skills/Challenges Balance</td>
<td>75</td>
</tr>
<tr>
<td>The State of Control</td>
<td>76</td>
</tr>
<tr>
<td>Measuring Flow Experiences</td>
<td>77</td>
</tr>
<tr>
<td>Balance of Skills to Challenges</td>
<td>78</td>
</tr>
<tr>
<td>Loss of Self-Consciousness</td>
<td>78</td>
</tr>
<tr>
<td>Control Potential</td>
<td>80</td>
</tr>
<tr>
<td>Degrees and Variability of Flow</td>
<td>81</td>
</tr>
<tr>
<td>Flow Segments</td>
<td>83</td>
</tr>
<tr>
<td>Dungeons and Flow</td>
<td>83</td>
</tr>
<tr>
<td>The Personal Nature of Flow</td>
<td>85</td>
</tr>
<tr>
<td>Playing with Others</td>
<td>86</td>
</tr>
<tr>
<td>Communication</td>
<td>88</td>
</tr>
<tr>
<td>Goals and Feedback</td>
<td>89</td>
</tr>
<tr>
<td>The Importance of Constant Activity</td>
<td>90</td>
</tr>
<tr>
<td>Defining Flow Segments</td>
<td>92</td>
</tr>
<tr>
<td>Implications of Play Length and Interview Timing</td>
<td>93</td>
</tr>
<tr>
<td>Future Video Game Research</td>
<td>94</td>
</tr>
</tbody>
</table>
Limitations.................................................................................................................................96

Conclusion..................................................................................................................................99

References....................................................................................................................................101

Appendix 1: Focus Group Questions............................................................................................107

Appendix 2: Interview Questions..................................................................................................109

Appendix 3: Transcript for Participant A.........................................................................................111

Appendix 4: Transcript for Participant B........................................................................................114

Appendix 5: Transcript for Participant C.........................................................................................120

Appendix 6: Transcript for Participant D.........................................................................................125

Appendix 7: Transcript for Participant E........................................................................................129

Curriculum Vitae..........................................................................................................................133
ABSTRACT

Ryan Thames

DUNGEON FLOW:

PLAYER EXPERIENCES OF FLOW IN WORLD OF WARCRAFT

Thesis under the direction of Michael David Hazen, Ph.D., Professor of Communication.

This study sought to explore player experiences of flow in the Massively Multiplayer Online Game (MMO) *World of Warcraft*. Data from personal interviews, conducted after one-hour play sessions, was compared to Csikszentmihalyi’s proposed elements of flow to determine in what segments of the game each participant experienced flow, if any. Recordings from the play sessions were then analyzed to determine what messages coincided with these flow segments. Results suggested that 2 of the 5 participants experienced a flow state, with 3 flow segments identified overall. All three of the flow segments identified happened while participants were playing in “dungeons” within the game, and common messages within these segments were proposed. The study ultimately yielded many implications for future research regarding flow and video games.
Chapter I

Introduction and Review of Literature

Introduction

Since the late 1990s, Massively Multiplayer Online games (known as MMOs or MMOGs) have been growing rapidly from year to year. Recent data suggests a number of active MMO subscriptions totaling around 16 million, not including MMOs without an American market or those with under 10 thousand subscribers (Woodcock, 2006). While some of these numbers might represent single individuals with more than one game subscription, the numbers are still impressive. Even early in the lifespan of online gaming, a Pew Internet and American Life study found that 56% of the college students surveyed played online games occasionally or regularly, with 31% playing once a week or more (Jones, 2003). It is clear that MMOs are a fast-growing platform, not only for entertainment, but also for social interactions online. MMOs form a medium ripe for communication studies. The question is: How should they be studied? Some work has been done concerning the state and importance of social interaction in MMOs (Chen, Phuah, & Duh, 2007; Larose, Shaw, & Wirth, 2006; Qiaolei, 2008; Steinkuehler & Williams, 2006; Williams, 2006; Williams, Yee, & Caplan, 2008; Yee, 2005). These studies tend to emphasize the game as a medium for social interactions and try to analyze the experiences and effects of those interactions. While such studies of social interaction are important, they sometimes overlook the communicative aspect of the game itself, as well as the broader experience of the individual player. Few attempts have
been made to study an MMO as a text in its own right conveying messages to the player.

In order to undertake such a study of video games that are, as they are aptly titled, massive, it is necessary to first narrow the focus to those messages and elements of a game most salient to the player experience—those that contribute to player involvement and enjoyment. The goal of the present exploratory study is to identify what those messages and game elements might be. The particular text selected for this analysis will be the MMO *World of Warcraft*, one of the most popular MMOs currently active. With over 10 million subscribers as of the end of 2008, 7 million more than the game with the second largest player base, *World of Warcraft* corners much of the MMO market (Woodcock, 2006). Its popularity makes it particularly important for study, and its commonly accepted status as an exemplar of the MMO genre within the games industry means an analysis of *World of Warcraft* may also be relevant to other games that follow a similar model.

**Review of Literature**

In conceptualizing the phenomenological state of enjoyment and involvement, this study draws on Csikszentmihalyi’s theory of flow. Flow theory is used because many scholars have suggested flow as a concept for describing the enjoyment of game players (Bryce & Rutter, 2001; Ducheneaut, Yee, Nickell, & Moore, 2006; Sherry, 2004; Voiskounsky, Mitina, & Avetisova, 2004; Weber, Tamborini, Westcott-Baker, & Kantor, 2009; Weibel, Wissmath, Habegger, Steiner,
Groner, 2007). This section contains a brief review of past video game research regarding MMOs, followed by a discussion of flow theory.

A Description of MMOs

For those unfamiliar with MMOs, a more detailed description is in order. As stated above, MMO stands for Massively Multiplayer Online game (sometimes referred to as Mega Multiplayer Online games, Virtual Worlds, or Persistent Worlds). These games are termed “Massively Multiplayer” to distinguish them from other games that might be playable via Internet connection with only a few players. There is no firmly set numerical standard as to what delineates a Massively Multiplayer game from a game that is simply multiplayer. Some scholars set the bar at enabling “hundreds or thousands of players to interact simultaneously in a game world” (Qiaolei, 2008, p. 26). Most commercial MMOs range from the tens of thousands to the hundreds of thousands in subscription totals, with a few under ten thousand and a few in the millions, while World of Warcraft alone has over ten million subscribers (Woodcock, 2006). The majority of MMOs require a monthly subscription fee to play, such that some list this as a necessary feature of MMOs (Woodcock, 2006). However the necessity of a subscription is arguable and is not often listed as a requirement for the definition. The importance of subscriptions lies more in data collection—without a monthly subscription it is much more difficult to keep track of how many people are playing regularly rather than those that just played once, thus the number of non-subscription game players are not represented
in most data. *World of Warcraft*'s subscription fee is $14.99 ("World of Warcraft Game Guide" 2009).

Some other key features that define MMOs are generally agreed upon in many studies (Yee, 2005; Yee, 2006; Steinkuehler & Williams, 2006; Chen, Phuah, & Duh, 2007; Qiaolei, 2008). However, a highly detailed description of these definitive characteristics is best stated in Edward Castronova's (2006) article “Virtual Worlds: A First‐Hand Account of Market and Society on the Cyberian Frontier.” He puts forth three defining characteristics that he labels Interactivity, Physicality, and Persistence. By “Interactivity”, Castronova means “it exists on one computer but can be accessed remotely (i.e. by an internet connection) and simultaneously by a large number of people, with the command inputs of one person affecting the command results of other people” (p. 818). Of key importance here is that to be classified as an MMO, a game must allow players to connect and interact not only with the game world, but also with other players. When Castronova talks of “Physicality”, he refers to “an interface that simulates a first‐person physical environment on their computer screen” (p. 818) though the level of realism and detail, as well as type of environment, varies from MMO to MMO, and sometimes within a single MMO. This “Physicality”, as Castronova states, is often “ruled by the natural laws of Earth” (p.818)—that is to say, MMOs generally present a simulation of the real world, with such familiar features as gravity, solidity of objects, range of vision, and the presence of mountains, forests, rivers, buildings, etc., though the degree of realism may vary, and there may be ways of breaking some physical rules within a game. Finally, one of the most defining aspects of an MMO is what Castronova terms “Persistence”: the
fact that “the program continues to run whether anyone is using it or not; it
remembers the location of people and things, as well as the ownership of objects”
(p. 818). Yee (2006) echoes that statement, saying, “the world exists before the user
logs on, and continues to exist when the user logs off... events and interactions occur
in the world... even when the user is not logged on” (p. 5). It is this feature that
allows a player to log on to the game at any time of day or night and continue
playing from where they left off, allows different populations to be on at different
times of day, and fosters the sense of a realistic simulation of the real world
complete with varied inhabitants and a virtual economy.

In addition to the above features, an extremely important aspect common to
all MMOs is the means by which the player interacts with the game, the avatar. An
avatar is, in its most simple definition, the player’s representative within the game
world, a 3D-rendered persona that the player develops and controls in order to
interact with the game world as well as other player’s avatars. Pearce (2004)
discusses the particular qualities of avatars in MMOs, noting that in these games,
“rather than selecting fixed characters, [players] select particular character roles,”
which, “are somewhat generic, but allow players to configure unique characters
composed of various traits, which they can then evolve over time into a fully
developed persona through a system of improvisational collaborative narrative” (p.
149). She further notes that:

    The strategies you choose in enacting your innate talents and acquired skills
    engage you in a process of real-time character creation. In addition, you can
    acquire property, including weapons, tools, magic amulets... which will all
    become part of your character’s unique personality. (p. 149)
The above observations hold true for most fantasy MMOs, including *World of Warcraft*. It should be noted here that beyond visual representation, *avatar* customization includes certain abilities and attributes that are chosen and continually developed through the game.

**World of Warcraft**

*World of Warcraft*, at its most basic level, has much in common with most other MMOs and possesses all the characteristics described in the literature above. The game presents a large, persistent world built largely around fantasy tropes, including mythical creatures, magic, and mostly medieval-era technology and architecture, with the anachronistic exception of having primitive musket-style guns and occasional mechanical engineering fueled by magic instead of science. The fictional background allows the players to place their avatars into one of two warring factions: The Alliance, consisting of such races as Night Elves, Humans, Dwarves, Gnomes, and the recently added Draenei, and The Horde, consisting of Orcs, Trolls, Tauren (minotaur-like creatures), Undead, and the recently added Blood Elves. Each of the above races has their own unique starting point in the game world, with the exception of Dwarves and Gnomes, which share one starting point, and the Orcs and Trolls, which share another starting point. A player creating a new avatar must also select a “class,” which is not a socio-economic term in the game but rather describes something akin to a particular line of training and skillset. The available starting classes are Druids, Hunters, Mages, Paladins, Priests, Rogues, Shaman, Warlocks, and Warriors. Players interact with the game world by directing
their avatar with a combination of keyboard commands and mouse clicks, with a user interface of maps, status information, and “macro” command buttons displayed on the screen for reference. The types of interaction and goals within the game will be discussed in more detail later.

As no one computer server could possibly support the millions of subscribers World of Warcraft has, and their playerbase is worldwide, the game exists on many different servers or “realms”, numbering well over 200 as of late 2009. With the exception of test servers, the game world players will encounter is exactly the same for all realms. The only changes from realm to realm are that different players will be encountered and there may be different rules regarding player-to-player interaction. World of Warcraft offers players three different types of realms: PvE (player vs. environment), PvP (player vs. player), and RP (roleplaying). In a PvE realm, other players cannot attack you and you cannot attack other players unless both parties agree to it, while in a PvP realm players may be attacked by others at any time. RP realms function like PvE realms except that players are required to stay “in-character” in their interactions with others.

Research on MMOs

A number of scholars have proposed models for analyzing digital games (Bates, 2009; Ducheneaut, et al., 2006; Mäyrä, 2008; Rockwell, 2002; Ryan, 2009). Bates (2009) looks at MMOs from the viewpoint of players’ identity formation and play with their avatar characters. Rockwell (2002) argues the importance of theorizing about games as important cultural artifacts, and proposes a model he
calls “a poetics of computer games” based on Bakhtin’s theory of the novel as a combination of many genres and styles (p. 353). Ducheneaut, Yee, Nickell, and Moore (2006) conducted a longitudinal study of World of Warcraft players’ activity and obtained some interesting data regarding player preferences, play time, and achievement rates. While indispensable to our understanding of player activities on a broad level, this model of analysis, like the other models discussed above, does not work on an in-depth level to describe the player’s experience with specific messages and message types present within the game.

Ryan (2009) presents a more intriguing model of analysis for my purposes as she looks at different message types present in games. Examining the notions of space, play, and fiction, she compares modern digital games and a 17th century game, “The Labyrinth of Ariosto,” to highlight “the need to combine the imaginative pleasures of narrative—a type of meaning that presupposes a world—with the social pleasures and active involvement of games” (p. 164). While attempts of the past lacked balance “between gameplay and narrative” (p. 165), Ryan points out that, “thanks to the procedural (in other words, code-driven) nature of the computer, strategic game-space can be mapped onto a mimetic narrative space that represents a world” (p. 166). Her comparative analysis reveals two message types that will likely encompass a great deal of the player’s experience within the game—those messages that relate to “gameplay,” or are “ludic,” and those messages that relate to “narrative.”

Of the narrative messages, Ryan (2009) notes that, “in an online world, there is no general storyline but multiple sequences of action corresponding to the tasks
(known as quests) given to the player by computer-controlled nonplaying characters (NPCs)” (p. 169-170). Addressing gameplay, she speaks much of computer code and argues that:

> from the point of view of the designer, game worlds are discontinuous spaces structured by invisible lines that delimit the range of application of certain units of code, while from the point of view of the player, they are open territories full of opportunities for action and exploration. (p. 167)

If we were to take just the above observation, it might be argued that there are no messages related to gameplay encountered by the player, for the gameplay is noted as invisible. However, Ryan goes on to suggest that while, “the underlying map is not available to the player... it is through the construction of a cognitive map that approximates its strategic divisions that players become competent members of the fictional world” (p. 167). This “cognitive map” then, must be learned through messages within the game. Ryan gets at some simplistic form of these messages when she remarks that, “in a well-designed world, the code associated with objects should simulate their real-life behavior... thanks to this functional mimeticism with respect to real-world objects, the vast majority of... ‘rules’... can be learned efficiently.” (p. 167). While she does not explicitly associate the two, I would also argue that what she claims is “the principal way to progress in the game... a cyclic scenario known as ‘leveling’,” where, “the players kill monsters, acquire loot from them, sell this loot for money, and buy equipment such as weapons... that allow them to challenge more ferocious monsters,” (p. 170) displays some key messages related to gameplay. Particularly in *World of Warcraft*, where the numeric values of equipment, abilities, damage inflicted, and even distance until next progression are all openly displayed, these constitute important messages that provide the players
with what Ryan terms “cognitive maps.” Both types of messages referred to by Ryan appear together in player interactions with non-player characters whose tasks drive both the narrative “questing” and the gameplay “leveling” within the game. As Ryan puts it, “whereas narrative interest regards characters as persons, ludic interest regards them as a means to an end” (p. 172).

Frans Mäyrä, in his book *An Introduction to Game Studies* (2008), proposes a framework that highlights similar message types. He makes the point that, “it is useful to differentiate between the *structural gameplay analysis*… and *thematic analysis* of games” (p. 165). By structural, Mäyrä means, “paying special attention to how game rules and interactions with game objects and other players are structured,” which he says “is important for any analysis, since it involves those parts and processes which have strongest influence on people engaged with… actual gameplay” (p. 165-166). As for the thematic elements, Mäyrä speaks to these as “the representational aspects, game world, characters and fiction of games,” noting that, “these have an emphatic significance to the interpretations concerning game’s cultural character” (p. 166). The two levels of focus discussed above lead to a dichotomy similar to what can be found in Ryan’s (2009) analysis, though he uses thematic instead of narrative. Mäyrä further notes that some games might also benefit from a “*social analysis of game-related communication networks and communities*” (p. 166), referring to those messages created by other players that use the game as a medium.
The Concept of Flow

As I have discussed above, there are different types of messages present within the game, and a vast array of specific messages that fall under these types. Given this variety of messages, it is important to identify which messages and message types are most important to the player’s experience of the game—that is, those that make playing the game an enjoyable experience. Psychologist Mihaly Csikszentmihalyi (1988) has devoted much of his life’s work to a concept he calls “flow,” an “experience that... [is] autotelic, or rewarding in and of itself” (p. 8) More specifically, Csikszentmihalyi (1988) notes that his “first concern was about the quality of subjective experience that made a behavior intrinsically rewarding” (p. 7). Csikszentmihalyi’s work in explicating conditions and symptoms of the individual’s experience of enjoyment has made the concept of flow appealing for scholarly research on media enjoyment. In particular, flow has been mentioned in a number of scholarly studies of digital games (Bryce & Rutter, 2001; Ducheneaut, et al., 2006; Sherry, 2004; Weber et al., 2009). As Ducheneaut, et al. (2006) discuss in the conclusion of their analysis of player activities in World of Warcraft, “although many earlier MMOs were criticized for requiring long, repetitive grinding sessions... WoW seems to instead have been optimized such that players experience more of a ‘flow’ experience” (p. 314). However, these studies do not go so far as attempting to link the flow state to specific messages within the game.

Csikszentmihalyi’s investigations have involved interviews with people from many different cultures and occupations. Though the activities these individuals enjoyed were understandably diverse, Csikszentmihalyi (1990) notes that, “they
described *how* it felt when they enjoyed themselves in almost identical terms” (p. 48-49). These results have allowed Csikszentmihalyi (1990) to propose some commonly displayed “elements” of “the phenomenology of enjoyment”:

First, the experience usually occurs when we confront tasks we have a chance of completing. Second, we must be able to concentrate on what we are doing. Third and fourth, the concentration is usually possible because the task undertaken has clear goals and provides immediate feedback. Fifth, one acts with a deep but effortless involvement that removes from awareness the worries and frustrations of everyday life. Sixth, enjoyable experiences allow people to exercise a sense of control over their actions. Seventh, concern for the self disappears, yet paradoxically the sense of self emerges stronger after the flow experience is over. Finally, the sense of the duration of time is altered; hours pass by in minutes, and minutes can stretch out to seem like hours. (p. 49).

While some of these elements might be easier to operationalize and measure than others, they all provide some basis of comparison for other qualitative data to help identify potential indicators of flow.

Looking at a few of these basic elements, one can see that some attempt might be made at hypothesizing whether an activity might allow for flow experiences based on the external qualities of the activity itself. Explaining the first element, Csikszentmihalyi (1990) further specifies that while there should be “a chance of completing” it for the person in question, it should also be “a challenging activity,” one “that could not be done without the appropriate skills” (p. 49). One might note, as Csikszentmihalyi (1990) does, that “games, sports,” and even activities such as reading that require knowledge of “artistic and literary forms” (p. 51) seem to fulfill this element of flow, with their requirements of physical and/or mental competence and coordination. Regarding the element of “concentration,” Csikszentmihalyi (1990) notes that, “enjoyable activities require a complete
focusing of attention on the task at hand—thus leaving no room in mind for
irrelevant information” (p. 58). Constant distractions in the environment would
presumably distract from such focus. Csikszentmihalyi (1990) points out that the
element of “clear goals and feedback,” is, “the reason it is possible to achieve such
complete involvement in a flow experience” (p. 54). An analysis of the rules and
progression of the activity could assess this important element of flow by noting
whether the activity’s goals seem clear and how quickly the results of an action
would be known even without interviewing participants.

Other elements more clearly require some subjective account by the
activity’s participants. The element Csikszentmihalyi (1990) calls, “the merging of
action and awareness,” describes the flow experience wherein, “people become so
involved in what they are doing that the activity becomes spontaneous” (p. 53). One
can only estimate this feeling subjectively—by either experiencing it oneself or
getting testimony from someone who has experienced it. There are similar
challenges involved with the sixth element, for Csikszentmihalyi (1990) hastens to
point out, “what these respondents are actually describing is the possibility, rather
than the actuality, of control,” noting that, “the ballet dancer may fall, break her leg,
and never make the perfect turn, and the chess player may be defeated and never
become a champion” (p. 60). What matters is not that all aspects of the activity be
perfectly controllable, which would make for a rare activity indeed, but rather that
the participant feels they might be. This element then describes a subjective
estimation of control potential. Csikszentmihalyi’s (1990) final two elements, “the
loss of self-consciousness” (p. 62) and altered time perception (p. 66) are likewise
clearly subjective. The subjectivity of “the loss of self-consciousness” is quite evident from Csikszentmihalyi’s (1990) description that, “in flow there is no room for self-scrutiny. Because enjoyable activities have clear goals, stable rules, and challenges well matched to skills, there is little opportunity for the self to be threatened” (p. 63). Though there may be external factors, measurements of self-consciousness are clearly subjective. Although Csikszentmihalyi (1990) expresses doubts as to whether reported changes of time perception are “a by-product of the intense concentration,” or “something that contributes in its own right to the positive quality of the experience” (p. 67), this subjective experience is common enough that he lists it among those conditions associated with flow.

A more in-depth look at the first four elements reveals that they require more subjective experience to measure than it might appear. Regarding the first element, it had been hypothesized that flow would occur when “skills” and “challenges” were “balanced” in a particular activity (Csikszentmihalyi, 1990, p.52). Yet, this did not seem to be the case at all times. The results of a later findings suggest that the flow experience occurs only when the subject’s perceived level of skill in the activity and the perceived level of challenge of that activity are both balanced and perceived as high compared to what is routine for the subject’s experience of that activity (M. Csikszentmihalyi & I. Csikszentmihalyi 1988, p. 260). Thus, the particular person’s skill level and experience with the challenges of an activity play a role, as do their personal perceptions of skill and challenge from moment to moment. As for the second element, absence of external distractions does not necessarily mean a participant was concentrating, and the presence of such
distractions does not necessarily account for people who are able to overcome such
distractions. Finally, while a researcher might assess from watching that a goal is
clear, or that the results of actions in relation to this goal are quickly know-able,
Csikszentmihalyi (1990) also acknowledges that, “in some creative activities, where
goals are not clearly set in advance, a person must develop a strong personal sense
of what she intends to do” (p. 55). However clear they are to the person in question,
these internally constructed goals form situations that are more difficult to view
from the outside, along with other instances Csikszentmihalyi (1990) proposes
where “goals and rules governing an activity are invented, or negotiated on the
spot” (p. 56). Ultimately, no attempt to identify flow experiences can be complete
without some look at the personal experiences of people undertaking the activities
in question.

The investigation of flow began with interviews to capture these personal
experiences. However, Mihalyi and Isabella Csikszentmihalyi (1988) note the
“limitations” of this method, as, “interviews are limited by the vagaries of memory"
(p. 252). Flow researchers sought a method whereby participants might report on
flow in a timeframe more immediate to the actual experience in question. For this
purpose, they devised the Experience Sampling Method (ESM), used by
Csikszentmihalyi and other researchers to study flow in the moment as opposed to
having subjects try and recall the flow experience from distant memory (Carli, Delle
Fave, & Massimini 1988; M. Csiksenmihalyi & I. Csiksenmihalyi, 1988; LeFevre
ESM essentially made use of beeper technology and booklets of self-report forms
containing both open-ended and scaled measurements of the participants’ subjective experience, paging people at random throughout the day to have them fill out a form regarding their activity at that moment (M. Csikszentmihalyi & I. Csikszentmihalyi 1988). Yet, as Weber et al. (2009) point out, “although the ESM provided a dynamic view of flow in daily life, the relatively low likelihood of a specific flow experience occurring when the signal was sent made the ESM an impractical tool for studying the actual flow experience deeply” (p. 403). While Csikszentmihalyi and many other researchers using the ESM were concerned with studying the flow experience as sampled from the variety of activities in which it might occur, the focus of my study is identifying flow experiences in a very specific context—playing a video game.

**Summary and Research Questions**

This study seeks to identify messages associated with player involvement and enjoyment in the Massively Multiplayer Online game *World of Warcraft*. To do so, it follows the long line of research on Csikszentmihalyi’s theory of flow, particularly the ESM studies. If, as some scholars suggest (Bryce & Rutter, 2001; Ducheneaut, et al., 2006; Sherry, 2004; Weber et al., 2009), a successful video game seems designed to bring about the proposed preconditions for a flow experience, then playing the game in a comfortable environment free from significant distractions should, given enough time, elicit a flow experience. By having participants play for a period of time in such an environment before interviewing them, a researcher should have a higher chance of catching the subject in a flow
state than ESM studies which prompted response at random times throughout the day. With this procedure, the immediacy of the Experience Sampling Method can be combined with one-on-one interviews, which, with follow-up questions, can arrive at a more in-depth description of the subject’s experience at that moment than self-report forms. With the body of literature on video games and flow in mind, I address the following hypothesis and questions:

**H1:** The experiences participants identify having had while playing World of Warcraft will be consistent with Csikszentmihalyi’s description of flow.

**RQ1:** During what segments of the game do players experience flow?

**RQ2:** What messages are present in those segments of the game where flow is experienced?

**RQ3:** What messages are common among all the segments of flow experience identified by the players?
Chapter II

Methods

The present study is composed of two phases. The first phase was a focus group session conducted to establish preliminary connections between flow and MMOs and to discover prominent issues to consider in planning the second phase. The second phase involved recording subjects playing World of Warcraft followed by a one-on-one interview adapted from Csikszentmihalyi’s Experience Sampling Method (ESM).

Phase I Methods

The focus group consisted of seven people (5 male, 2 female), aged 18 and up, who are either currently playing the game World of Warcraft or have played in the past. Participants were selected via a convenience sampling method comprising volunteers responding to fliers posted in various stores and coffee shops in the local community and on campus, as well as a snowball sampling of students who have shown interest in video games. The session was conducted by an independent researcher with considerable experience conducting focus groups, and silently observed by the primary researcher.

The focus group questions (see appendix 1) were designed to fulfill two purposes. First, they sought to establish the possible presence of flow experiences in the game and to identify some general situations in the game where such experiences may come about, thus eliciting preliminary answers to H1 and RQ1 to be explored further in the next phase. To test H1, questions were designed to
measure Csikszentmihalyi’s (1990) flow elements of concentration, altered time perception, and balance of skills to challenges, as well as general feelings of enjoyment.

The flow element of concentration was assessed with the question “Have you ever been in a situation where you couldn’t bring yourself to stop playing at the moment?” General feelings of enjoyment the participants might have experienced were explored with the question, “What were you feeling at the time [when you couldn’t bring yourself to stop playing]?” Csikszentmihalyi’s flow element of altered time perception deals with descriptions of time either passing by very quickly or very slowly. Any question specifically mentioning time would be leading, so the question, “What are you aware of in the environment around you [when you can’t bring yourself to stop playing]?” was asked in hopes that responses might indicate altered time perception. Finally, the flow element of a balance of skills to challenges was assessed with two questions: “Do you or did you find the game challenging?” and, “Do you feel like your skills were up to the challenges you have faced in the game?”

To inform RQ1, questions were designed to identify which parts of the game the participants found most enjoyable and involving. The purpose of these questions was to indicate segments of the game where flow is experienced, to be further tested in Phase II. Some questions were designed to highlight general areas that participants considered enjoyable, including: “What first drew you to World of Warcraft?” “What kept you playing for as long as you did?” “What part of the gameplay itself do you or did you enjoy the most?” and, “Overall, what do you think
the most involving parts of the game are, moment to moment?” In addition, some questions were designed to try and prompt more specific experiences that might be related to flow, including: “What was happening in the game at that time [when you couldn’t bring yourself to stop playing at the moment]?” and, “What needed to be done before you felt like you were at a good stopping point?” These questions fed off of the questions measuring the flow element of concentration above, and it was hoped that their relation to that element might prompt the sharing of flow experiences.

The second purpose of the focus group questions was to inform the second phase of research with a couple of goals in mind. These goals were to reveal potential distractions beyond the researcher’s control that might break flow, as well as to establish the optimal amount of time for participants to play before being stopped. Given the research indicating a discrepancy between descriptions of flow in solitary versus social activities, and the multiplayer nature of World of Warcraft, questions were designed to identify how widely used the in-game chat services were and whether players consider these a distraction. The questions designed to assess social distractions were: “When playing, how much focus do you or did you usually place on these social aspects of the game compared to others such as playing and advancing within the game?” and, “Has anyone felt interrupted by these social aspects of the game at times?” In order to determine an optimal time range to record play, and the feasibility of stopping play at some random interval to interview in the second phase (in line with the ESM studies), participants were asked, “About how
long were you usually playing in a typical session before you felt like you were really getting into the game?”

**Phase I Implications**

After a debriefing between the researcher conducting the focus group and the primary researcher, the data was analyzed with the goal of informing the next phase of research. As the focus group session was not tape-recorded, the analysis was limited to identifying themes and topics broached by the participants. Some specific quotes and lines of analysis will be discussed in the following chapters, but the resulting implications for the second phase of research are enumerated here.

In the first phase, the focus group, every participant discussed at least some of the themes for Csikszentmihalyi’s conditions of flow. These include 1) *intense concentration*, which was mentioned by 5 of the 7 participants. The experience of intense concentration occurred most during elements of the game including questing, raiding, and equipment upgrading. The question concerning 2) *enjoyment* of the game also found that enjoyment was greatest during questing, raiding and equipment upgrading thus care was taken to look for these game elements in Phase II when collecting and analyzing the data.

In regards to the condition 3) *altered time perception* 4 of the 7 participants specifically mentioned losing awareness of time while playing and undertaking some of the above tasks, despite the fact that none of the questions specifically mentioned time. This finding partially informed the setup in the Phase II. The above
two findings together led to the question: “Was it difficult for you to quit the game when I came in?”

Finally, regarding the condition 4) **balance of skills to challenges**, 3 of the 7 participants described challenges that matched their skills, with the other 4 saying the game was too easy. However, 6 of the 7 participants discussed ways of either making the game easier for themselves (when difficult) or making the game more challenging (when too easy), essentially to match their skill level more closely. Given the research indicating that matched challenges and skills is one of the most defining indicators of a flow experience, this debate sparked two follow-up questions for the Phase II interview: “Do you find ways to try and challenge yourself more?” (if challenge level is reported to be too easy) or “Do you find ways to make play easier?” (if challenge level is reported to be too hard).

The questions regarding **social distractions** led to some disagreement, with many insisting that communication with others is crucial to the gameplay experience (making things easier by interacting with others or more challenging by playing against others) and that friends are a major reason to play, while some said that much of the game is doable without it, and one participant strongly insisted the game is “just about numbers” throughout the session and that communication can be a distraction. Considering this debate in light of the research regarding flow in social situations, a set of questions was devised for Phase II to get a detailed understanding of what role interactions with others played in relation to the flow experience, including: “Was what you were doing important to others in any way?” “How so?” “Were there others with you where you were in the game world or were
you playing solo just now?” “Were you communicating with others?” “Are these people you often play/communicate with?” and, “Were you playing against other players or against NPCs?”

Finally, the general response to the question of optimal time range was that it varied from almost immediately to about an hour, with 2 out of the 7 participants stating times of over one hour on occasion. Given this response, the second phase design of stopping a subject’s play at some random interval seemed less than ideal. If the subject were stopped much before one hour, they might not have time to get into a flow state, while at much beyond one hour their memory of potential early flow experiences would not be fresh.

Phase II Methods

The second phase of research was adapted from the Experience Sampling Method (ESM), as mentioned above. Like the ESM studies, this phase was designed to elicit accounts of flow experiences while still recent in the participant’s mind, but given the literature and the researcher’s desire to have recordings of the reported flow experiences, the ESM was modified to better serve this study.

The participants are five experienced World of Warcraft players, all male, who are currently playing the game, recruited via snowball sampling by email or word of mouth. No participants for this phase of the research were involved in the previous phase. Participants were informed of the study’s purpose in layman’s terms, with the stated goal of “identifying what the most enjoyable and engaging parts of the game are to players,” but without mention of flow or Csikszentmihalyi’s
elements of flow to avoid influencing their play session and interview responses. Arrangements were made for each participant to come in at their own convenience to participate, with a date and time that best suited their schedule.

The setup and procedure was kept identical for each participant. A room was specifically set up for this study where a participant could be alone and free from distractions. A high-end gaming laptop loaded with the latest patch of World of Warcraft, as well as screen-recording software, was set up in the room. Above the laptop was a webcam to be focused on the participant’s face that fed through the wall to a computer in an observation room next door. This recording could later be time-synched with the screen recording. In addition, a closed-circuit camera mounted on the wall behind the participant allowed the researcher to observe the game.

After an opportunity for questions and the obtaining of consent, the participant was led to the room. A choice of numerous types of chairs and mousepads was available in order to make the participant comfortable and to replicate an at-home playing experience as much as possible. Special arrangements could be made beforehand for a participant to bring a special mouse from home, and fortunately World of Warcraft preserves each player’s user interface no matter what computer they use to log onto the game. The participant was informed that after about an hour the researcher would return from the next room to ask a few questions. They were told they would have a chance to wrap up whatever they were doing at that time, in hopes that it would reduce the chances of the participant worrying about the time and being distracted from a flow state, given the findings
from the phase I focus group. Once the participant was comfortable, the researcher left to the observation room, returning after the hour play session to conduct a recorded one-on-one interview with the participant.

Phase II Questions

The interview questions (see appendix 2) were adapted from a sample Experience Sampling Form (ESF) found in the book *Optimal Experience: Psychological Studies of Flow in Consciousness* (M. Csikszentmihalyi & I. Csikszentmihalyi, 1988, p.257-258). They were modified to optimize the in-depth nature of a one-on-one interview with follow-up questions, and the language was altered to be more specific to the subject of study. Additional questions were added based on findings from the first phase of research, as mentioned above. As with the ESF they were adapted from, many of the interview questions are designed to indicate whether the subject experienced a flow state (answering H1), while the others are designed to determine what activity coincided with the flow state if a flow state occurred (answering RQ1). The only exceptions are question 9, “Were you comfortable while playing here?” and the follow-up probe for question 12, “Was [how into the game you were] more or less than usual when playing for this amount of time?” These were included to address the issue of comfort and the potential limitations of this research set-up.

The hypothesis (H1) was that, “The experiences participants identify having had while playing *World of Warcraft* will be consistent with Csikszentmihalyi’s description of flow.” To test this hypothesis, questions were adapted from the ESF to
elicit data about a subject’s mood, as well as three of the most crucial elements of flow: balance of skills to challenges, concentration, and loss of self-consciousness. The data from these targeted questions was analyzed by comparing the themes and language of the responses to Csikszentmihalyi’s (1990) descriptions of these elements in his book Flow: The Psychology of Optimal Experience. Due to the open-ended nature of the personal interview, relevant data from a participant’s responses to other questions was also considered.

To assess a participant’s mood, the question, “How did you feel when playing just now?” (question 2) was asked. While not listed as a flow element in Csikszentmihalyi’s (1990) description of “the elements of enjoyment,” it is an open-ended adaptation of Csikszentmihalyi’s sample ESF prompt, “Describe your mood as you were beeped” (M. Csikszentmihalyi & I. Csikszentmihalyi, 1988, p.257). Given Csikszentmihalyi’s (1990) conception of a flow state as an enjoyable and “intrinsically rewarding” experience (p. 67), it is expected that participants who experienced a flow state during the play session should in general report positive emotions for the element of mood. They may also note being invested in the activity, but this will only be taken as an indicator of mood if the participant also provides a positive response to the question “How important to you was the activity you were just doing?” (question 4).

The balance of skills to challenges is perhaps the most important element of flow. It was assessed primarily with the question, “How would you say your skills matched the challenges you were facing in the game just now?” (question 6). As discussed in the review of literature, however, it was suggested that matched skills
and challenges only lead to flow when they are matched and above the subject’s average skills and the average level of challenges faced (M. Csikszentmihalyi & I. Csikszentmihalyi, 1988, p. 260). Thus, a participant’s language in response to this question, along with any other relevant data throughout the interview, were examined to determine if the skills and challenges were at a level below what the participant is used to experiencing.

Although not an indicator of flow alone, concentration is an important element theoretically coinciding with a state of flow. As Csikszentmihalyi (1990) explains, “enjoyable activities require a complete focusing of attention on the task at hand—thus leaving no room in the mind for irrelevant information” (p. 58). This element was primarily tested with the question, “Were you very concentrated on what you were doing?” (question 8).

While a loss of self-consciousness might play a role in one’s mood, or in whether one feels they are overcoming challenges, the importance of this element to flow lies in avoiding or being distracted from any worries or criticisms about oneself, with no thoughts beyond one’s role in the flow activity. Csikszentmihalyi (1988) devised two different questions that measured this element. The question, “Were you satisfied with how you were doing?” (question 7), was taken word for word from Csikszentmihalyi’s sample ESF (M. Csikszentmihalyi & I. Csikszentmihalyi, 1988, p.258). However, the other question, “How self-conscious were you?” (M. Csikszentmihalyi & I. Csikszentmihalyi, 1988, p.257), was not included because of the researcher’s desire to avoid psychological terminology in the interview questions. The hope was that the satisfaction question, along with
follow-up questions and the open-ended nature of a personal interview, would yield some insight into the participant’s potential insecurities or notable lack thereof and support this element of flow.

The above three flow elements are the primary elements measured in Csikszentmihalyi’s sample ESF (M. Csikszentmihalyi & I. Csikszentmihalyi, 1988, p.257-258). There are, however, additional flow elements described by Csikszentmihalyi (1990), including: a merging of action and awareness, altered perception of time, perceived control potential, and the perception of clear goals with immediate feedback. Of all these elements, Csikszentmihalyi’s ESF only measured control, with the question “Were you in control of the situation?” (M. Csikszentmihalyi & I. Csikszentmihalyi, 1988, p.257). Ultimately, no questions were asked specifically targeting these flow elements. Regarding the control question, the researcher thought that answers to the above noted questions about satisfaction (question 7) and the balance of skills to challenges (question 6) should also provide data on how in control the participant felt. As for the remaining elements—merging of action and awareness, altered perception of time, and the perception of clear goals with immediate feedback—any questions targeting them would have to include complex and/or detailed descriptions of the elements and would thus be leading questions. Although these elements were not prompted by specific questions, data from all interview questions was searched for descriptions that matched them during the analysis.

As noted above, descriptions indicating a participant’s perception of control potential were anticipated in responses to the questions regarding satisfaction
(question 7) and the skills/challenges balance (question 6). Given the particulars of this element noted in the review of literature, the researcher had to keep in mind Csikszentmihalyi’s (1990) qualification that the element involves “the possibility rather than the actuality, of control” (p. 60), that is, “what people enjoy is not the sense of being in control, but the sense of exercising control in difficult situations” (p. 61).

To determine if a participant’s descriptions indicated a merging of action and awareness, responses were compared to Csikszentmihalyi’s (1990) description of the element as noted in the review of literature, particularly the statement that “people become so involved in what they are doing that the activity becomes spontaneous, almost automatic; they stop being aware of themselves as separate from the actions they are performing” (p. 53) leading to an experience where, “action follows action seamlessly” (p. 54). It is important to note that Csikszentmihalyi (1990) links this aspect of the flow experience with the flow element of concentration, pointing out that, because of this seemingly automatic action, flow “appears to be effortless,” even though “any lapse in concentration will erase it” (p. 54). Thus potential descriptions of a merging of action and awareness could only be considered valid if the participants in question also display a level of concentration that befits the flow element.

To assess whether a participant displayed an altered perception of time, interview data was searched for any responses or comments matching Csikszentmihalyi’s (1990) description, mentioned in the review of literature, that “hours pass by in minutes and minutes can stretch out to seem like hours,” (p. 49).
Essentially, any descriptions of time going quickly or “flying by,” or moving very slowly will be taken as a positive indicator of this flow condition. Assessing a perception of clear goals with immediate feedback used a similar process. The analysis involved searching for participant responses and comments matching Csikszentmihalyi’s (1990) description, noted in the literature, that, “the reason it is possible to achieve such complete involvement in a flow experience is that goals are usually clear, and feedback immediate” (p. 54). Unlike other flow elements the clarity of goals and immediacy of feedback are qualities that can be observed in an activity itself, even without studying those people who do the activity. Nevertheless, the specific mention of clear goals with immediate feedback in a participant’s response could offer an additional indication that a flow experience occurred.

**Phase II Approach to Data Analysis**

If during data analysis a participant’s answers fit with the majority of elements listed above, H1 is supported for that participant. In addition, answers to the question “Was it difficult for you to quit the game when I came in?” (question 3) may provide additional support for H1. This question is not adapted from the ESF. However, based on the literature and the focus group descriptions of task concentration and losing track of time, it would seem that the participant’s difficulty quitting the game would be a possible indicator that the researcher interrupted a flow experience directly. The question, “what does it feel like to you when you are really into the game?” (question 13) is an open-ended question designed to elicit the participant’s personal idea of an optimal gaming experience. If a participant’s
response to this question yields statements matching the flow elements above, those may be considered in support of H1. These statements will only be considered, however, if the participant also responds positively to either the question, “were you really into the game just now when I came in?” (question 10) or the question, “were there other moments while playing here when you really got into the game?” (question 11).

If H1 is supported by the data analysis for a participant, further analysis of that participant’s interview data will begin to answer RQ1, “During what segments of the game do players experience flow?” If analysis of the participant’s responses indicates the researcher interrupted a flow experience, the question “what were you just doing in the game?” (question 1) will prompt an answer to RQ1. If the analysis indicates that the participant experienced flow at an earlier time during their play session, then the RQ1 will be answered by the question “what were you doing during those moments?” (a follow-up probe to question 11). Should a participant’s responses indicate that they were experiencing flow when the researcher entered the room and also during previous moments, the question “did how into the game you were vary while you were playing?” (question 12) may serve to clarify. Additionally, the question “was what you were doing important to others in any way?” (question 5), along with its follow-ups, has the potential to further clarify RQ1 if a flow state occurs during social activities. The points or segments of gameplay that serve to answer RQ1 are hereafter referred to as “flow segments.”

If the data analysis as outlined above supported H1 for a given participant and provided answers to RQ1, then the researcher began the next stage of data
analysis for the participant. This stage involved simultaneous viewing of the gameplay recorded by the screen-capture software and the time-synched webcam recording of the participant’s face. The researcher watched the synched footage in its entirety, comparing a participant’s flow segments to surrounding footage from the same participant to discern any noticeable differences in facial expression, eye contact, and the frequency and/or type of the subject’s manipulations of the keyboard and mouse. If such differences are found in each participant for whom H1 was supported, they may help further refine the flow segments in answer to RQ1. Given the exploratory nature of this method of analysis, however, the researcher also watched time-synched footage of participants for whom H1 was not supported. If a between-participant comparison reveals that these participants also displayed differences in the above categories during certain segments, then the validity of this method may be suspect.

The final stage of analysis involved describing the content and activity occurring on the game screen during flow segments, as defined in the interview analysis and possibly refined in subsequent data analysis. For this stage, the researcher viewed only the gameplay footage of the flow segments captured by the screen-recording software. A list of all messages occurring on screen were compiled, to include: game interface, game effects, participant actions, participant-created dialogue, NPC actions, NPC-created dialogue, as well as any actions and dialogue instigated by other players within the game. To compile the messages, the researcher watched footage of each flow segment twice at 50% playback speed to reduce error and repeated this procedure for each of the message types described
above. Actions were recorded by their most essential and noticeable effects rather than listing the specific spell or ability (e.g. attacking, healing, crafting, resource gathering, trading, etc.). Dialogue was recorded simply by noting its presence, who initiated it, and to whom it was directed towards (e.g. towards the subject or someone else, ally or opponent, acquaintance or stranger, someone nearby in the game world or far away?). In addition, given a discussion among the focus group participants in Phase I about the importance of task-based communication, the researcher also noted whether each message was off-task, commenting about the task at hand, or serving to direct other players’ actions in the task at hand. These compiled lists serve to answer RQ2, “What messages are present in those segments of the game where flow is experienced?” If previous analysis indicated two or more distinct flow segments for a given participant, a within-participant comparison was conducted to search for common elements. Finally, a between-participant comparison of all indicated flow segments was made to search for any messages common to all flow segments, answering RQ3, “What messages are common to all the segments of flow experience identified by the players?”
Chapter III

Results

The present study seeks to identify player experiences in the MMO *World of Warcraft* that are consistent with Csikszentmihalyi’s description of flow, using data from personal interviews. It also seeks to identify the specific moments of the game when these flow experiences occur (flow segments) and to describe the messages that appear during those moments. Therefore, this chapter presents a thematic analysis of interview data from participants, followed by a visual analysis of recorded footage of the participants playing the game.

Analysis for H1

*H1: The experiences participants identify having had while playing World of Warcraft will be consistent with Csikszentmihalyi’s description of flow.*

This section tests the above hypothesis by comparing each participant’s interview responses to the ideal elements of a flow experience proposed by Csikszentmihalyi, as discussed in the previous chapters. The five participants will be referred to as participants A, B, C, D, and E (see appendixes 3, 4, 5, 6, and 7, respectively). It is important to reiterate that all elements need not be present in a given participant to confirm H1, though a majority should be. Also, given the open-ended nature of a one-on-one interview, certain responses and comments made by the participants may at times support or conflict with their responses to other questions. Therefore, results will be presented according to which element of flow they relate to, regardless of when in the interview the statement occurred. The
primary conditions of flow used to test H1 include the participant’s mood, balance of skills to the challenges, concentration, and loss of self-consciousness. In addition, there are some elements of flow for which questions were not specifically added or found in the sample Experience Sampling Form (ESF). However, given the open-ended nature of the personal interview, they are addressed in some participant responses. These elements of flow include a merging of action and awareness, altered time perception, perceived control potential, and a perception of clear goals with immediate feedback.

Mood:

Analysis of the data looked for two themes characterizing mood: positive emotions and feeling invested in the activity. Participants B, C, D, and E all reported feeling some form of positive emotion in response to the question about how they felt while playing (question 2). Participant B answered, “Like I always do. I enjoy playing.” In a similar fashion, Participant C answered, “Pretty good. I mean, that’s my standard daily routine, so it’s... like a warm glove... It fits well. You just move in and feel like you’re a part of something. So, it feels fine.” These two participants both report moods that easily register as positive, though not ecstatically so. Participant D reported feeling tired from working all day, but noted, “I wasn’t as relaxed as I would have been, you know, playing my normal setup... Besides that, I mean, it was fun, it was normal.” This adds yet another positive response in the same manner as the other two. What’s interesting about these three responses is how they associate the positive feelings with their normal routine, as something that occurs whenever
they play. Finally, Participant E somewhat paradoxically described feeling “jovial” but also “slightly frustrated” because of how he was faring against those he was playing with. Thus, four of the five participants reported feeling positive emotions, though two of those also reported a negative emotion alongside it. Participant A reported neither happy nor negative emotions.

As for feeling invested in the activity, Participants A and B both described very similar emotions, with Participant A reporting his mood as “fixated,” and Participant B saying he was “intent,” while playing. These two responses could indicate a degree of investment in the play session that would be expected during a state of flow. Unfortunately, in response to the more specific question, “How important was the activity you were just doing?” (question 4), none of the participants considered it important. Also, while three of the five participants kept playing briefly to wrap things up after the researcher re-entered the room, only one participant reported having difficulty quitting the game in response to question 3. The participant who had difficulty quitting (Participant E) explained, “I wanted to finish the round.” The responses to questions 3 and 4 do not in any way suggest that flow did not occur at all while the participants were playing the game. However, the responses are a strong indicator that the researcher did not directly interrupt a flow state upon re-entering the room. To determine whether participants experienced flow at any other points during their play sessions, other interview data regarding the elements of flow must be analyzed.
Balance of Skills to Challenges

The balance of skills and challenges is perhaps the most important element of flow. Recall again, however, that this element is only indicative of flow when the skills and challenges are matched and above a participant’s average, or baseline level of skills and challenges (M. Csikszentmihalyi & I. Csikszentmihalyi 1988, Massimini & Carli 1988). What this means is that someone performing at a skill level lower than they are used to should not experience flow, even if the challenge levels happen to be lower to match the current skill level. Participants A, B, and D all thought their skills were matched or adequate to the challenges they faced. While he ultimately answered that his skills were “about matched with the challenges,” Participant A’s first response was “I’m not very good at this game, um, comparatively speaking, I guess.” This suggests a low personal baseline. However, Participant A also reported not being satisfied, saying, “I was very inefficient with my bars, I guess… in my combat sequences and uh, I think it might have been the product of nervousness… but I don’t know,” which suggests that even though his personal baseline might have been low, he did not feel he was performing at or above it. Participant A’s mention of discomfort and a surgery earlier that day in response to question 9 suggests that, while his skills and the challenges might have been matched, they were not matched and above his personal average.

Similarly, Participant B mentioned his skills were “average” compared to the challenges he faced, but that he wasn’t satisfied with how he was doing. However, his reasoning was different. As Subject B explains, “I’m trying out a new rotation, so my DPS [damage per second] isn’t what it should be… for my level. That’s why it’s
just adequate at the moment.” What this means is that he has changed some essential aspects of how his character works—the resources he can use to complete the tasks. Playing after making this change could be considered a different activity that may actually be more challenging than his usual play session even though by some standards he didn’t play as well. To make an analogy, hitting motorized targets in the dark by sound alone would be considered a much greater and more engaging display of skill even if one did not hit the bullseye of the targets as often as one was accustomed to. This line of thinking is supported by Participant B’s later response that the reason he was concentrating while playing was, “because I’m trying to figure out my new rotation. I mean, if this would have happened a couple of weeks from now, I’d just be here.” The above statement clearly suggests that he was more engaged than he would be if he had already mastered the rotation and been satisfied with his DPS.

The third participant to report matched skills and challenges was Participant D, who also reported satisfaction with how he was doing. His response to the question was, “I think they were adequate. I don’t think they were, you know, I’m no Warcraft god or anything like that. I consider myself a casual player, so I think they were adequate to the tasks.” This qualification suggests a baseline average that is not overly high, which along with his reported satisfaction supports a matched level of skills and challenges in line with the proposed condition for a flow state.

Participants C and E both reported a mismatch between challenges and skills while playing, in answer to the question. Participant C responded, “I’m way above
average.” However, when asked if he found ways to try and challenge himself more, he responded:

Yeah... With all the PVE, which is player versus environment, there are hard modes that you can now do, uh, which requires a lot more attention than just the regular modes. They’ll just add a couple of things that increase the difficulty significantly. So I do, when running the end game content, try and look for groups that are doing the hard modes. Uh, PVP, on the other hand, when you’re playing against other people obviously you’re going to come against some people that are really good. And that is a great challenge... playing against another player, not knowing what to expect... even if you’re doing the hard modes in these other instances you know that it’s a pattern and that once you master that pattern, you’re going to have it down pat and there’s nothing else.

While Participant C did not play any PVP during the recorded play session, he did play two instances on hard modes, one of which was the only play segment where he indicated he was really into the game. As he describes the segment, where he was trying out “tanking,” a role that involves holding the enemies’ (NPCs, or MOBs) attention so the rest of the group can defeat them unhindered:

Tanking is fun. It’s something I haven’t been doing very long, and like you were talking about when you gather the MOBs together. Umm... Fortunately that was a pretty good group, so it made me look pretty good. But, you know, that was an intimidating task because with my rogue character [the previous character played] it’s only DPS... and all I’m basically doing is mashing buttons, making sure I was killing things as quickly as possible. People don’t really rely on you, per se, but as a team people do rely on you to draw the attention of all those MOBs and keep it. Which keeps them alive, which allows the group to progress. So, as a tank I felt pretty good about getting that done. In that one run that I did, yeah.

Despite his first answer that he was “way above average,” the language of the above description, particularly labeling it “an intimidating task,” that he had not “been doing very long” suggests that there was some challenge at least during that particular segment. That segment of play seems to show that Participant C was
trying to increase the challenges towards matching his high skill level, increasing his enjoyment. This suspicion is further confirmed by a later comment that:

> There’s like a slight artistry to it, you know? You’re having to really—again you’re working with artificial intelligence, so you know within a certain parameter what they’re going to do. But making them come together like that, so that the rest of the group can do AOE attacks, which is Area of Effect, you know, it requires a little bit of skill and technique, which is fun.

Again, the language indicates a challenge slightly beyond the usual, but with the skills to match it, in line with the challenge/skill ratio of flow. However, this is contradicted by a later comment by Participant C that, “I chose specifically tasks to do that I knew would be easy here for me.” Thus, Participant C displays only a partial fit for this condition.

Finally, Participant E reported different challenge levels for the two different tasks he attempted during play. The first task was a PVE quest, facing NPCs, of which he said, “the NPC’s are... I mean it’s pretty much a cakewalk. They want it to be easy so you enjoy yourself, I guess. So, it’s not really a challenge... It’s just go out, bring your 10 things back, go out, do it again, and here’s your gloves.” Coincidentally, this task was the part he reported being satisfied about, that was “pretty straightforward and fairly easy,” further supporting that his skills were far greater than the challenges. Speaking about the second task he attempted, a PVP match, he noted, “it’s a lot harder versus people. Skills, and I guess different classes, work on each other differently.” When asked in the follow-up question if he does PVP or anything else to challenge himself more, he responded, “I like to PVP occasionally. That’s definitely where more of the challenge comes through. I mean, if it’s PVE I’ll try to, you know, take on as many as possible or do stuff like that just to sort of liven things
up.” However, Participant E reported not being satisfied with the PVP, citing “ten 13-year-olds whooping your ass.” This statement suggests that though the challenge was higher for PVP, Participant E’s skills were not matched with those challenges. Earlier in the interview, Participant E indicated he had been frustrated because, “once you get to the top end of things the spread is a little bit higher as far as equipment, and I’m on the lower end and most of those guys are on the higher end, so I died quickly.” This could suggest more of a lack of resources matching the challenge, rather than lack of skills matching the challenge. Regardless, given how tied skills and resources are in the game, as well as the participant’s comments, Participant E does not seem to report a balance of skills and challenges in line with this element of flow.

The above analysis shows that participants B and D gave responses in line with the flow element of balanced challenges and skills that might be considered above a personal average. The responses of Participant C were mixed and only partially fit this element, while the responses of participants A and E do not fit with this element. Because this balance is the defining element of flow, these results will weigh heavily in testing H1 for these participants. However, due to the great difficulty of measuring the theoretical baseline average of the participants in a study such as this, other elements of flow put forth by Csikszentmihalyi must be taken into account.
Concentration

Four out of the five participants answered yes to this question, with the exception being Subject C. Interestingly, participants A, B, D, and E also described some form of intense concentration when they are asked to define what being “really into a game” means to them (question 13), while Subject C does not.

Participant A defined being into the game as:

Not really paying attention to the time or thinking about if I have homework, if I need to call my parents. Is my body bothering me or something like that? Um, but more I’m just focused on the one task at hand and doing what I can to complete it.

Participant B related, “if it’s got a captivating story I want to see it... if you catch me right in the middle of doing a questline, you might as well just leave me alone, because I’m not going to talk to you.” Similarly, Participant D said, “everything else is kind of shut out. You don’t really realize what’s going on around you.” Finally, Participant E identified it as when his girlfriend is talking to him and he doesn’t hear what she’s saying, “I’m pretty much focused on the screen and what’s happening. The rest of the world goes by without your focus.”

When asked why he had not been concentrating on the game, Participant C replied, “Just because, again, it’s something I generally do—what I just did is something that I will do, at least in some part, every day. So, I could do that almost blindfolded.” Though it is possible that a participant might respond to the question selectively, forgetting a brief period of concentration earlier in the play session, in this case that is not so likely. A telling statement by Participant C elsewhere in the interview mentioned, “Normally, I have my game windowed, so I can just quickly go out. So, when I’m waiting and there’s nothing going on, I’ll, you know, go browse...
blah, blah, blah... listen to iTunes, um chat on AIM.” This statement suggests that not concentrating solely on the game is part of his everyday play habits, rather than being attributable to participant reporting error or to discomfort with the study’s setup. Interestingly, Participant C’s statement here directly conflicts with Participant D’s stated reason for concentration, “Just immersion in the game. Your wide screen, for one thing. I mean, the bigger the screen, to me, it’s almost you become more immersed in it.” Participant C playing in windowed mode would certainly lessen this effect, with the game only taking up half the size or less of whatever screen it is played on. Precisely how the lacking concentration on Participant C’s part relates to flow cannot be determined from this study, but from the analysis it is clear that Participant C does not fit with this particular element of flow, while participants A, B, D, and E do.

Loss of Self-Consciousness

As noted in the review of literature, Csikszentmihalyi (1990) speaks of this element as a “loss of self-consciousness,” arguing that, “in flow there is no room for self-scrutiny. Because enjoyable activities have clear goals, stable rules, and challenges well matched to skills, there is little opportunity for the self to be threatened” (p. 63). As previous sections of this chapter show, responses to question 7 proved quite useful for contextualizing other flow elements such as mood and the balance of skills to challenges. This question was also quite useful for measuring this element of flow. The results of the question were mixed: two participants (C and D) responded yes, another two participants (A and B) responded no, and Participant E
responded no for one section of play but yes for another. The telling part of the data lies in the responses to the follow-up question. Of course, all the participants rooted their explanations in the workings of the game, as was expected, but some of their self-scrutiny or lack thereof came out in the responses.

Subject A's response particularly stood out for an analysis of this element. As mentioned in the section on skills and challenges above, Subject A said he was unsatisfied because, “I was very inefficient with my bars, I guess. Uh... in my combat sequences and uh, I think it might have been a product of nervousness.” The mention of nervousness here is the antithesis of what should be reported for this element during flow. Nervousness indicates self-consciousness, not the loss of it. Nervousness also indicates a perceived potential threat to the self of some magnitude, be it large or small. The other subject who mentioned being unsatisfied, Participant B, noted the reason that, “my DPS isn’t what it should be... for my level.” This statement is slightly less problematic, as it does not involve self-consciousness directed at anything outside the game. However, it is still a critique of the self, rather than the confident approach to the tasks that should epitomize this element for a state of flow. Similarly, for the segment of play Participant E reported being dissatisfied with, he was bothered by what he referred to as “ten 13-year-olds whooping your ass.” While still rooted in the gameplay, this comment shows a critique of the self, compared to others, that is not consistent with the loss of self-consciousness that should be present in a flow state.

On the other hand, the two participants who answered that they were satisfied, participants C and D, avoided these negative critiques and comparisons.
The closest they came was in explaining what was expected of them, but they did so in a way that conveyed a retrospective confidence in their abilities and how they played their roles. Indeed, both accounts included a detailed description of what was expected of them alongside a description of the skills they employed in completing those tasks. For Participant C, this description involved the task of “tanking,” as quoted previously in the skills and challenges section. The key part of that quote for this discussion was his assertion that, “people do rely on you to draw the attention of all those MOBs and keep it. Which keeps them alive, which allows the group to progress. So, as a tank I felt pretty good about getting that done.” In a like manner, Participant D spoke about his satisfaction with both of the characters he played:

Well, on my 80 character, I’ve spent quite a bit of time on him, so I think... he was geared up enough to more than take care of the DPS that he needed to when the time came. My warrior I’ve switched to protection from arms and it’s amazing, actually, how much DPS they can do.

The above descriptions are replete with satisfaction and pride. One might argue that pride could also be considered a form of self-consciousness, but the major insistence of this flow element is that there be no negative scrutiny of the self. Regardless, it is important to remember that these descriptions are after-the-fact, and positive revelations after a flow experience is over hold a particular place in flow theory.

Recall Csikszentmihalyi’s (1990) proposition that:

Afterward, when the activity is over and self-consciousness has a chance to resume, the self that the person reflects upon is not the same self that existed before the flow experience: it is now enriched by new skills and fresh achievements (p. 66).
Analysis of the responses by participants C and D above clearly demonstrates a degree of satisfaction and a focus towards skills and achievements consistent with Csikszentmihalyi’s description of post-flow reflection. Thus, participants C and D fit this flow element. However, even the positive response by Participant E lacked this enthusiasm and detailed focus. Participant E related that, “the rest was fine. It was pretty straightforward and fairly easy, I’d say.” Therefore, participants A, B, and E do not fit this flow element.

Merging of Action and Awareness

Some of the described elements of a flow experience are difficult to measure with targeted questions. As mentioned previously, one of these elements is what Csikszentmihalyi (1990) calls, “the merging of action and awareness... one of the most universal and distinctive features of optimal experience,” a state where, “people become so involved in what they are doing that the activity becomes spontaneous, almost automatic; they stop being aware of themselves as separate from the actions they are performing” (p. 53). Recall that Csikszentmihalyi (1990) also identifies this element as the part of the flow experience that inspired the name flow, where “action follows action seamlessly” (p. 54). It is also important to remember the link between this element and the element of concentration pointed out in the previous chapter.

Participants B and D both described experiences that fit with this element of flow at different points during the interview. When Participant D answered the question about his mood (question 2), he added, “you know when you're leveling it's
almost like you’re in a groove. You almost, after awhile, can do it blindfolded.”

Though this description follows a discussion of how tired Participant D was, it also fits quite well with Csikszentmihalyi’s discussion of the merging of action and awareness. Furthermore, as previous analysis confirms, the measure of concentration for Participant D is in line with the flow element. A more extreme example can be found in Participant B’s response to the question of what it means to be into the game (question 13). He referenced a previous occasion when he “played a video game for 24 hours straight,” before he spoke about how much he enjoys “quest lines” and how, “if it’s got a captivating story I want to see it... I can say it falters, a little bit... as the quest changes or starts coming to an end, but... if you catch me right in the middle of doing a questline you might as well leave me alone, because I’m not going to talk to you.” This description equates “being into the game” with not only intense concentration but also a pattern of questing, or actions following actions, in line with the condition of flow under analysis. In further support of this line of analysis, Participant B also fit the flow element of concentration, and indicated he was really into the game during the recorded play session. Thus, despite the fact that no questions were asked with this flow element in mind, it fits descriptions presented by subjects B and D.

Altered Time Perception

The element of altered time perception involves the feeling that time is either moving very quickly, or very slowly, as described in previous chapters. Despite the fact that none of the interview questions mentioned time, three of the five
participants — participants A, B, and D—discussed feelings in line with this associated element of flow. When Participant A answered that he was really into the game (question 10/11) and was asked to define what being into the game meant to him (question 13), part of his definition was “not really paying attention to the time.” Similarly, Participant D notes that when he’s really into the game, “hours can pass and you have no clue that time has flown by.” It is also interesting to note that when the researcher returned to the room after the hour play session was up, Participant D commented, “Oh, you lose track of time in this game, I tell yah.” Finally, Participant B, when asked if he was really into the game when the researcher entered (question 10), responded, “Yeah. I was about to help somebody but then I realized the hour was up and thought ‘oh, great.’... I said I’m sorry, I didn’t realize what time it was and that I’d be on after dinner.” These descriptions are all very much in line with this associated flow element, and they will be considered when determining if H1 is supported for these participants.

**Control Potential**

The perception of control is a commonly reported element of the flow experience. However, it is important to again recall Csikszentmihalyi’s (1990) explanation that, it “is the possibility rather than the actuality, of control” (p. 60), that is, “what people enjoy is not the sense of being in control, but the sense of exercising control in difficult situations” (p.61). This flow element does not involve being so in control that nothing could possibly pose a challenge, but rather the perception that one has the knowledge and confidence to deal with the challenges
one will face. As such, it is obviously tied to the flow elements dealing with the loss of self-consciousness and the balance of skills to challenges discussed above. Indeed, the only data supporting this element were those same responses which supported self-satisfaction for participants C and D in the above analysis, and for the same reasons—namely, their expressed confidence in facing the challenges. From the responses, it was difficult to determine the critical distinction between the possibility and actuality of control. Thus an analysis of control potential is not considered in support of H1 for the participants.

Clear Goals with Immediate Feedback

The final element of flow to be analyzed here is the perception of tasks that have clear goals with immediate feedback. Participant responses throughout the interview were examined to see if the participant made particular mention of how clear the tasks in the game were, or of how easy it was for the participant to keep track of how they were doing in these tasks. The data shows only one participant who gave a response in line with this element. When explaining why questing was satisfying to him, Participant E explained, “You just go on and do it. You know what you’re supposed to do.” However, as seen in the analysis above, Participant E also gave the evaluation that this same task was easy, which is in conflict with the most important element of the flow experience. Thus, only 1 of the 5 participants gave an indication of clear goals, and no participants mentioned immediate feedback. Because the only indication of clear goals also conflicts with one of the primary flow
elements, the element of clear goals with immediate feedback is also not considered in a support of H1.

**Results for H1**

H1 was tested with the above analysis, comparing subject interview responses to Csikszentmihalyi’s (1990) description of flow elements, with the added general element of subject mood. As discussed above, the elements of control potential and clear goals with immediate feedback were not considered, leaving six elements to test H1. For the element of mood, 4 out of the 5 participants provided responses fitting a flow experience. The balance of skills to challenges flow element was displayed by 2 of the 5 participants. Concentration was indicated in 4 of the 5 participants. A loss of self-consciousness was shown in 2 of the 5 participants. Statements suggesting a merging of action and awareness were provided by 2 of the 5 participants. Finally, 3 out of the 5 participants displayed altered time perception.

Of the 5 participants, one participant (D) exhibited all 6 of the flow elements. Another participant (B) exhibited 5 of the 6 flow elements. The remaining participants displayed 2 flow elements each. On average, they showed 3 of 6 flow elements. Ultimately, H1 was supported only for participants B and D, and these two participants will be the primary focus of the next phases of data analysis.

**Analysis and Results for RQ1**

*RQ1: During what segments of the game do players experience flow?*
This section seeks to answer the above question regarding those participants for whom H1 was supported. As discussed in the previous analysis, negative responses on the part of all participants about how important the last activity they were doing was to them (question 4), suggested the researcher did not directly interrupt a state of flow. Thus, the question, “What were you just doing in the game?” (question 1) does not answer RQ1. Additional data from the interviews will suggest certain “flow segments” in answer to RQ1, which might then be refined by watching the time-synched game footage and web-cam recordings, as described in the Methods chapter.

**Interview Data Analysis**

Data from both participants suggested similar situations for their flow segments. Participant B noted that he didn’t enjoy the game as much as he will after the new content is released, “but I enjoy going into the instances because it’s a different feel. I mean... it’s a whole storyline in itself. I mean, if you’ve done the quests leading up to that... then you kind of know what’s going on inside... so it’s enjoyable.” Participant D pointed to the same type of situation, but for different reasons, as he stated:

Anytime I’m in a dungeon I try to be into the game because I know there are others relying on my actions also. So, if things are going around, I try to shut them out. And it’s fairly easy to do in that game, anyway. Because, like I said before, immersion.

It should be noted that dungeons and instances describe more or less the same situation in the game, being self-enclosed areas with a particular storyline usually
undertaken by small groups of players. From Participant B’s account, it is clear that the storyline of these play segments contributes to his enjoyment. Participant D, when asked the difference between playing in these dungeon areas and what he was doing when the researcher came in, explained, “it’s more of a casual feeling when you are out by yourself just questing. You know that there’s no consequences, really, to your character or anybody else’s character because you can just quit.” The social aspect of other players relying on him is clearly a major factor in Participant D’s enjoyment of this play segment.

Both of the participants’ responses to question 5 indicate that both undertook these segments of play as part of a group of five players. However, these players were drawn randomly from interested players on many different World of Warcraft servers, and that the participants had no prior contact with these other players. This finding suggests that what contributed to Participant D’s enjoyment was something about playing as a group in general, rather than previously established relationships with certain group members. For Participant B, the fact that he was grouped with others may also be a contributing factor in some way, even if his primary area of enjoyment centered on the story. Ultimately, both participants indicated similar segments of the game to be flow segments, answering RQ1, despite the difference in their stated reasons for this indication. Because these reasons do not necessarily present the only content coinciding with flow, no further clarification of RQ1 can be made from this data. Therefore, the entire segments of play occurring in these dungeons, or instances, are considered to be flow segments.
Time-Synched Recording Analysis

As discussed in the previous chapter, this analysis involves looking at web-cam footage of each participant’s nonverbals alongside screen-recordings of participant’s actions in the game during the previously indicated flow segments. This footage was then compared with other footage and recordings of the same participant. The hope was that if notable differences occurred during these broadly defined flow segments, but were not present in other segments of play, then the definition of a flow segment might be narrowed to only those moments where the differences occurred. Successful results might have suggested a more precise answer to RQ1 than could be obtained from the interview data. Unfortunately, this was not the case. The noted differences of nonverbal and gameplay behavior proved inconclusive for participants B and D. Also, though the small sample size limited conclusive comparisons between participants, some of the same behaviors were also noted in the other three participants for whom H1 was not supported.

The only behavior that was noticeably any different in participants B and D during the identified flow segments was that at certain points while in the dungeons they both leaned in towards the screen further than they did while playing before or after those segments. However, they still leaned in towards the screen, albeit to a lesser degree, at other points while playing. Furthermore, participants A, C, and E all leaned in towards the screen at certain points during their respective play sessions. As H1 was not supported for those participants, the fact that they displayed the same behavior as participants B and D challenges the validity of this measurement.

In the absence of sophisticated equipment monitoring subject position relative to
the screen, it is impossible to determine if any of these differences are significant, whether within participants or between participants. Therefore, the flow segments that serve as an answer to RQ1 must remain broadly defined as those segments of play during which participants B and D were in a dungeon.

Results for RQ2 and RQ3

RQ2: What messages are present in those segments of the game where flow is experienced?

RQ3: What messages are common to all the segments of flow experience identified by the players?

As explained in the last chapter, these results were obtained by watching the recorded gameplay footage for those segments of play identified as flow segments, noting the occurrence of messages in such categories as: game interface, game environment, participant actions, participant-created dialogue, NPC actions, NPC-created dialogue, as well as any actions and dialogue instigated by other players within the game. Fortunately, the flow segments indicated by the data for participants B and D were all dungeon instances, which are distinctively bounded by loading screens within the game. Thus, there is little question of appropriate start and end times for the analysis. During his second flow segment, Participant D did leave the dungeon briefly when his character died, but one of the other players in his party transported him back. However, upon his return, he found he had lost an item crucial to progressing through the dungeon and quit after a little over a minute. Therefore, messages occurring in that minute were not included with the results.
The section that follows will present the results arranged by message type, describing all messages of that type present during each flow segment and also determining which were common among all three flow segments.

**Game Interface**

The most consistently appearing messages for almost any videogame are found in its visual interface—that collection of multiple messages, be they words, numbers, or other indicators, that together give the player feedback on what is going on in the game. For games played on a computer, such as *World of Warcraft*, the visual interface is also heavily involved in the player’s ability to act in the game with anything from the simple mouse cursor to the complex array of action bars, with a button for each character ability. All player’s in the game start from the same base set of messages in their visual interface, but many aspects of these are extremely customizable, so there could be important differences. The basic message areas are: the action bar where a player can assign buttons that activate his character’s abilities and track the time delay before an ability can be used again; a menu bar with buttons for game settings, character details, map, quest details, help, and inventory; the character’s picture with a bar that tracks health and the resource a character expends to activate their abilities; a minimap that tells where the character is and shows an overhead view of the local area along with side-buttons that control the icons displayed on it or open up a calendar of game events; a dialogue box that allows the player to send and receive messages on the chat channels as well as displaying feedback regarding player actions; numerous icons at
the top of the screen that indicate temporary enhancements and penalties; and, finally, an XP bar that tracks the character’s progress towards the next level. When a player is in a group, or party, with other players, pictures of those players’ characters and bars for their health and resources also appear. All the above messages were present during the flow segments for both participants B and D, with the exception of the XP bar because the characters were already at the maximum level attainable. Some of these messages were altered, as described below. Beyond these constantly displayed, though constantly updated, messages, other messages popped up at certain times providing feedback and sometimes requiring input. These will also be described below.

The two participants showed a great deal more similarity than difference in what messages were displayed in their respective visual interfaces, and although Participant D had two flow segments the interface was exactly the same in both. Because of this, and due to the sheer number of messages that make up the visual interface, those game interface messages common among all three flow segments are described here first, followed by a list of the individual differences. Both participants had four action bars for their character abilities, two at the bottom of the screen and two on the right side of the screen. As is standard, both also had character pictures with health/resource tracking bars next to them for their character and for party members. Throughout all the flow segments, the dialogue box displayed a list of the loot that the player and the party he was grouped with were receiving. Also displayed in the dialogue box were occasional plot descriptions of NPC actions (e.g. “Moorabi begins to transform!”), and the group chat dialogue
that will be described in more detail later. Beyond being displayed next to their health/resource bars, the names of group members and their affiliations floated above their avatars’ heads in white.

Flow segments for both participants also showed certain visual interface messages occurring in response to certain things happening in the game. When either the participant or a member of his group was in combat, the character portrait would flash red. Also, when either of the two participant’s characters was healed, green numbers revealing the amount of damage healed would float over his character portrait. When the participants moved their cursor over an NPC opponent or another player, detailed information would pop up, and even more detailed information would appear at the top of the screen if the participant clicked to set that NPC or player as a target. Less frequently, certain messages would pop up to alert a participant that he had moved to a new location within the dungeon, flashing it’s name on the screen briefly. Other messages would pop up whenever items besides gold were looted from defeated NPC enemies, sometimes prompting the participant to click a button and roll a virtual die to see if he won the item or if someone else in the group would get it. At the end of the dungeon, a message popped up showing that the dungeon had been completed.

There were some differences, however. For Participant B, next to his character picture, his health/resource bars had numbers overlaying the standard graphical depiction (e.g. 24655/24886). The character he was playing during the flow segment also had a pet, and the pet’s picture and health/resource tracking bars were displayed just below those for his character in the same fashion. Below that,
the pictures and health/resource tracking bars for his group members also had numbers overlaying the graphical depiction. The same number overlay appeared on the health/resource tracking bars in the detailed information of NPC enemies he targeted. The pet had its own action bar, which was displayed above the character’s two bottom action bars. The minimap was as described above, except for the notable feature that below it was a clock displaying the real-world time. Messages in the dialogue were of the same type, except that Participant B’s dialogue box displayed NPC-initiated dialogue that will be described in more detail later. At the bottom, where the XP bar would have been for a lower-level character, there was a bar tracking the character’s reputation with a particular NPC faction in the game. In addition to the names of the other players in his party floating above their heads in white, the names of NPC enemies floated above their heads in red. Beyond these alterations, Participant B also had an objectives-tracking window, transparent except for the text that displayed the name of a quest he was on and what he still needed to do to complete it. Finally, at the end of the dungeon, Participant B received a message pop-up on the screen saying he had earned an achievement, and similar, smaller messages noting that some of his party members earned an achievement.

Participant D’s two flow segments, on the other hand, lacked many of these messages. Participant D had no pet, no objective tracker, no names in red floating above NPC enemies, and no real-world time clock under his minimap. All of the health/resource tracking bars in his interface provided graphical feedback only, with no numbers. However, unlike with Participant B, the interface during
Participant D’s flow segments had floating numbers above avatar and NPC heads to indicate damage or healing. In Participant D’s dialogue box, NPC-initiated dialogue was not displayed, such dialogue appearing over the NPCs’ heads alone. Participant D’s dialogue box did, however, contain messages about his character’s changing reputation with certain NPC factions in the game, which was not found in Participant B’s dialogue box. Finally, no messages popped up alerting Participant D that he or any other player’s in his party had earned an achievement, though it is not clear whether this is because that feature was turned off or because everyone had already earned that particular achievement.

Game Environment

While the game interface presents messages that players are expected to modify to suit their preferences, the 3D graphics depicting the environment of the game world and its inhabitants vary much more between the fictional places within the game than they do between two different players in the same place. Each flow segment occurred in a different dungeon, however, so this section will describe each flow segment but also note what they have in common.

All three dungeons began with a loading screen, upon which was the dungeon’s name above a painting of some part of the dungeon in the style of fantasy artwork that might be seen on the cover of books, or in graphic novels. After the loading screen, as each participant moved their avatar around in the dungeon, they were treated to large open areas and occasionally points where other areas were depicted in the distance, giving the impression of a larger space than what the
avatar actually moves through. The actual path each participant directed his character along was in each case very clearly represented on the minimap. All the environments displayed intricate details, though perhaps appearing more drawn than realistic, as well as ambient effects such as shadows, lighting changes, flames, and magical energies (all of which would be displayed for any player so long as they were playing on a machine with a capable graphics card). Along with these, there were certain plot-connected objects that changed in response to player actions.

The distinct messages for each of the three flow segments in terms of game environment largely involve slight differences in the type or amount of those things described above. For instance, Participant B’s flow segment involved a dungeon with a lot of spider webs. Participant D’s first flow segment involved bones littering the floor, lots of moving water, and mist/haze. Participant D’s second flow segment included a lot of rocks, snow, ice, and a visible sky. While all three flow segments had plot-connected objects, Participant B’s flow segment included many more such objects. These objects included numerous magical crystals that items could be taken from and, at one point, eggs that hatched into new NPC enemies for Participant B to fight. On the other hand, Participant D’s flow segments only included one such plot-connected object each. In Participant D’s first flow segment, there was a bridge that rotated to clear a path after the defeat of a certain NPC enemy. In his second flow segment, there was a magical portal he could interact with, transporting him to another place in the dungeon. However, the environment during both of Participant D’s flow segments displayed a greater variety of ambient effects, than in Participant B’s flow segment.
Participant Actions

This section describes, at a very general level, the actions taken during each flow segment by the subject involved, and what they have in common. In all the flow segments, the participants spent the majority of their time attacking NPC enemies and trying to do as much damage as possible when not moving from one place to another. Constant attacking is not necessarily the case for all players, as some players spend almost all their time in a dungeon healing or enhancing the other players in their party. Nevertheless, attacking was the most common action taken by the participant during each flow segment. Also in all cases, the participants initiated these attacks by clicking buttons in their ability bar with their mouse cursor, despite the fact that many of these abilities also corresponded to numbers on the keyboard. The result was near-constant clicking during every combat sequence. The other common action taken besides moving was looting the corpses of fallen NPC enemies. During each flow segment, the participant would click to loot at every chance once all NPC enemies in the immediate area were slain.

The major distinction in the way the two participants played was that Participant D's movements were much faster, with the camera angle turning more frequently and the mouse moving more quickly. Also, Participant D healed his character a few times during both of his two flow segments, and took an action to enhance his character with a temporary bonus once during each of the segments. Participant D enhanced another player's character with a temporary bonus during his second flow segment in response to a request, and he used an ability that healed the other players in his party slightly during his first flow segment. In Participant D's
first flow segment, he also gathered resources with his mining skill on two occasions, presumably for crafting purposes. The final distinction to be noted is that Participant B died once during his flow segment, and Participant D died once during his second flow segment, though both were resurrected by other players in their party.

**Participant Dialogue**

As noted in the previous chapter, while watching the gameplay footage of each flow segment a count was taken each time a participant engaged in dialogue. Added to the count of messages were details, including: who the message was directed towards and the relevance of the message to the task at hand. Participant dialogue was the only type of message for which no commonality was found amongst the three flow segments. Participant D did not engage in any dialogue during his first flow segment. In his second flow segment he only engaged in dialogue once, with the exclamation “lol,” in response to off-task jokes made by others in his party.

Participant B’s flow segment was a different matter, containing frequent dialogue initiated by the subject. During his flow segment, Participant B sent twenty separate messages, all initiating or contributing to dialogue with other players in his party. Of these twenty messages, seventeen were about the task at hand. Ten of those seventeen messages were general comments initiated by the participant about the dungeon the players were in, four were short responses to other players’ comments about the dungeon, and three were providing information about what
could be expected as the party undertook its task. One of Participant B’s messages was a response involved in directing the task at hand—casting a vote on a course of action. The other two messages were both off-task, with one seeking off-task information and another being an exclamation in response to that information.

Other Player Dialogue

Messages initiated by other players during the flow segments were coded with similar categories to those messages initiated by the participant, except that particular care was taken to distinguish between messages directed towards the participant and those directed towards other players in the party. Unlike with Participant Dialogue, some common message types were identified across all three flow segments among those messages sent by other players. In all cases the majority of messages referred in some way to the dungeon or to the task at hand. Also in all cases, more of these messages were simply talking about the dungeon or task, while slightly less of these messages were actually involved in directing some aspect of the party's actions in the dungeon.

Variation among the three flow segments lay either in differing amounts of the message types discussed above, or with the presence of message types not found in all three segments. Participant D’s second flow segment displayed the largest amount of messages, at 34 separate messages, and also the most of each particular message type. Off-task messages and exclamations such as “lol” were found in Participant B’s flow segment and in Participant D’s second flow segment. Neither of these message types appeared in Participant D’s first segment, however. Participant
D’s first flow segment was also conspicuous in that it contained no messages directed towards the participant by other players.

**NPC Dialogue**

Dialogue by non-player characters, scripted to occur when either the participants or the other players in their party approached a particular location or took certain actions, was found in all three flow segments. These messages were all related to the fictive plot of the game in some way: either contextualizing the story of what the players are looking for in the dungeon, bringing to life the NPC’s personality, or giving the player motivation to pursue the storyline. In addition to these, action descriptions of NPCs were present in all three flow segments, with messages such as “Moorabi begins to transform!” While these are not dialogue in the strict definition, they served the same purpose in contextualizing the storyline of the dungeon and providing plot explanations.

Regarding the distinctions among flow segments, Participant D’s first flow segment was lacking NPC dialogue directed specifically towards the subject. All NPC dialogue common among all three flow segments was directed towards the party as a whole, other players included, described in the dialogue box as the NPC “shouting” the message. However, in Participant B’s flow segment, and in Participant D’s second flow segment, there were a few messages directed specifically towards the subject. In Participant B’s case, these messages all came from an NPC enemy, and were labeled as “whispers” in the dialogue box, a type of message players familiar with the game will identify as private communication directed solely at them. It is
possible, even likely, that the other players were receiving the same whispers, but
de the distinction is nevertheless worth noting, because of the personal association of a
whisper as opposed to a shout. Participant D’s second flow segment also included
some whispers, though in this case from a friendly NPC giving advice. In addition,
Participant D’s second flow segment also displayed some segments of interactive
dialogue with friendly NPCs in separate pop-up windows, with the participant
having a choice among preset options to prompt dialogue from the NPC, such as:
“What should we do next?” or “What abilities do Amber Drakes have?” Other
distinctions lay in the amount of messages of each type present, with Participant B’s
flow segment containing many more plot-related messages initiated by NPCs.

**NPC Actions**

Observable actions taken by NPCs were very similar across all flow segments.
There were distinctions in minute detail, such as exactly what creatures were
depicted and the exact nature of their abilities. Some were much larger than the
participants’ avatars while some were the same size, but NPCs of all size were found
across the three flow segments. A common thread was that the smaller NPC
opponents would swarm in great number around a subject and the other players in
his party. Larger NPCs would engage the participant and his party one or two at a
time. In a few cases, both occurred simultaneously. However, the most notable fact
to draw from these NPC actions was that there was a constant amount of activity
during combat, with special effects going off from spells or abilities initiated by the
NPCs.
Other Player Actions

Like NPC actions, the general actions taken by other players in a participant’s party were very similar across all flow segments. In each case there were two other players attacking NPC enemies with the participant, another player drawing the attention of NPC enemies to lessen the damage dealt to the rest, and one player that could provide healing or aid to the participant and the rest of the players when it was necessary. In addition to, and at times difficult to distinguish from, the special effects initiated by NPC actions, the actions of other players also increased the amount of action during combat. With four other players all casting spells and using abilities, the array of special effects on screen during combat (e.g. flashing lights, hovering marks over enemies, glowing around certain areas) was nearly constant.

Additional Data for Participant C

The results of RQ1 indicate that for the three identified flow segments, all occurred within what are known as dungeons, or dungeon instances, in the game. Although H1 was not supported for Participant C, he also played through two of these dungeons during his play session, each with a different one of his characters. While sample sizes are too small for any conclusive comparison, it might be worthwhile to describe the messages present during Participant C’s playthrough of these two dungeons. As with RQ2 and RQ3 above, the segment of play between the loading screens of each dungeon was analyzed. This section follows the same general format as the results for RQ2 and RQ3 above.
Game Interface

Participant C displayed most of the basic visual interface messages, as described above, but with some variations. In both of his dungeons, Participant C’s visual interface displayed four action bars, two on the bottom and two on the top, as well as a clock showing real-world time under his minimap, and an objectives-tracking window. In both dungeons, the health/resource tracking bars next to his and his party members’ character pictures were graphically presented, with no numerical overlays. The same is true for enemy NPCs. However, during the first dungeon, bars with numbers showing the NPC’s health appeared over their heads during combat. During the second dungeon, floating numbers appeared over the heads of both NPCs and the avatars of his party members showing what damage was currently being done or what damage was being healed. Finally, in the first dungeon Participant C’s interface had a bar tracking reputation with an NPC faction where the XP bar would be for a lower-level character. With Participant C’s character in the second dungeon this was not present.

Game Environment

The game environment in both of Participant C’s dungeons was very similar to what has been described above, with intricate detail, many ambient effects, and numerous plot-connected objects. Of the two, the second dungeon’s environment was closest to the description and detail provided previously, with large open spaces and clear paths displayed on the minimap. The second dungeon also had a great deal
of ambient effects, as well as detailed objects in the game environment with moving parts. The environment in Participant C’s first dungeon, however, was much more enclosed. It was a large cavern with few pathways, and no far-away views hinting at a bigger space beyond what the participant was moving through. Participant C and his party would move back and forth facing NPC enemies, occasionally crossing the same spaces they had just crossed. A final note that relates to game environment is that in Participant C’s first dungeon he had the point of view set very far back above his avatar and the avatars of his party members. The altered point of view resulted in showing more of the game environment at once, but with less of the intricate detail than would appear with a closer viewpoint.

**Participant Actions**

In Participant C’s first dungeon, the most noticeable characteristic of his actions was that he was not taking actions very often beyond moving his character. The role of the participant’s character in this dungeon was to heal the other players in his party, but he only did this a few times during combat, and mostly after combat was over. The reason for the infrequent activity was generally because during combat the health of the other player characters in his party did not drop low enough to require healing. There were long periods of time, even during combat, when the participant was taking no actions other than moving his avatar and the camera, simply watching the actions of the others. In both dungeons, Participant C used the hotkey buttons on the keyboard, rather than the mouse cursor, to activate his character’s abilities. In the second dungeon, with his “tanking” character, he
activated these abilities very often. He was usually the first in his party to go into combat, and he would be activating different abilities non-stop until the NPC enemies in the area were defeated. Still, even though he was active through each combat in this second dungeon, his visible actions—from the movement of his viewpoint in the game to the movement of the mouse cursor in targeting his enemies—was very controlled and lacked any jerkiness.

Participant Dialogue

Participant C’s dialogue in both dungeons was somewhat limited. He only sent two messages while playing in the first dungeon. One of these messages was to a friend that wasn’t currently playing in that dungeon, replying to a message the friend had sent about a topic unrelated to the dungeon. The second message was to the party he was playing with regarding the task at hand, but it took place after the dungeon was completed and consisted of a simple, “ty,” which is common shorthand for “thank you.” In the second dungeon, he only sent one message, again a “ty” message after the dungeon had been completed. It should be noted that he also started to send another message while in the second dungeon, a greeting to a friend outside of the dungeon who had just logged on. However, he decided not to send the message, deleting it and getting back to focusing on the task at hand, which was to approach another cluster of NPC enemies and attack them.
Other Player Dialogue

Dialogue initiated by other players was also very limited during both of Participant C’s dungeons. In the first dungeon, there were only three messages sent by other players. Two of these were messages directed specifically towards the participant by the friend outside the dungeon that he was talking to. Both of these messages were off-task, unrelated to the dungeon. The third message was a message of “thanks” directed at the party playing the dungeon as a whole. This came in response to Participant C’s message of “ty” mentioned above. In the second dungeon, two messages were sent by other players. These two messages were from other players in the participant’s party, and directed at the party in general, sent after the dungeon was completed. One message was, “ty for the run” (“run” being at term players often use to describe going through a dungeon and completing it), and the other message was, “gg,” likely short for “good game.” Like similar messages described above, these are messages about the task at hand after its completion, thanking or recognizing other players in the party for their role in completing the dungeon.

NPC Dialogue

The two dungeons that Participant C played through each displayed some dialogue initiated by NPCs, scripted into the game in response to player actions. These messages varied by degree and type between the two dungeons, but in almost all cases were directed at the party as a whole and never directed to the subject in particular. The first dungeon displaced the most NPC dialogue, with 36 separate
messages. Of these, 25 were plot-related threats by enemy NPCs, directed towards the players, and another 10 were messages from NPCs that contextualized the plot of the dungeon. Also, there was one message from a friendly NPC to the party at the beginning of the dungeon, providing some plot background and motivation to the players. Another message from the same friendly NPC was directed at other friendly NPCs, but still served to further reveal the plot. In addition to these, the first dungeon displayed 18 action descriptions, as discussed previously, that detailed NPC actions to supplement or foreshadow the actual graphic representations of those NPCs. These were all plot-related as well.

Participant C’s second dungeon displayed far less NPC dialogue, with only 16 separate messages of dialogue. Of these messages, 10 were plot-related threats directed at the party as a whole and 6 were messages that only served to develop the plot or to provide a fictional context for it. Finally, the second dungeon displayed one action description message. That action message may have served more to alert the players of strategy than to provide plot, however, as it indicated that the NPC in question had taken “a defensive stance.”

**NPC Actions**

The actions taken by NPCs in the two dungeons Participant C played were, in general, very similar to the NPC actions described regarding previous subjects. Smaller enemies would attack the party in swarms, while larger enemies would face the party either alone or with one or two other NPC enemies, with the exception of a couple of times when both of these tactics coincided. There are some actions worth
noting, however. In Participant C’s first dungeon, rather than wandering around until the players engaged them, the NPC enemies appeared out of plot-connected objects that depicted magical portals. The way the portals worked meant that instead of watching enemy NPCs’ movements from afar, the subject and other players would go to a certain place in the game environment and their arrival at that location would trigger the NPC enemies to appear. In the second dungeon Participant C played, however, the NPCs were moving around the game environment. The notable occurrence in the second dungeon is that one enemy NPC was depicted with some sort of magical energy or electricity between him and a swarm of enemy NPCs surrounding him.

Other Player Actions

The actions taken by other players within the two dungeons Participant C played through displayed the same type of actions and roles as described previously for the other subjects. During every combat situation there were many special effects representing other players’ actions. These special effects filled the screen around where the combat was taking place. In Participant C’s first dungeon, these special effects did not fill the entirety of the screen because of the far-back point of view described earlier. Participant C’s role as a healer in this first dungeon meant that all the other players were attacking during each combat. In the second dungeon, however, Participant C’s role “tanking” meant that while three of the other players were attacking the enemies around his avatar, one other player was doing little beyond healing him when he was taking damage.
Chapter IV
Discussion

The results of this exploratory study are largely descriptive in nature. They suggest many possible correlations, but no variables were isolated or controlled enough to propose any form of causation. In addition, this study chose a small number of participants in order to explore the topic in-depth, and thus cannot be assumed to have generalizability. Nevertheless, there are several interesting results that have implications for future research. In addition, the enormous amount of data gathered, given the hour of time-synched gameplay and facial expression footage of each participant, may yet yield further insights to flow research and to research on several other topics if the proper methods of data analysis are devised.

Flow Experiences

Ultimately, of the five participants, only participants B and D described experiences that fit most of the flow elements. They were, indeed, the only participants that described both of the most recognizable elements theorized to be symptomatic of a flow experience: altered time perception and a merging of action and awareness. Though both of these participants were obviously skilled players with multiple characters at the highest level currently attainable, both reported that the challenges they faced in the play session matched their skills. Responses by participants A and E, on the other hand, indicated an imbalance of challenges and skills, while Participant C’s responses were mixed in that regard. It should be noted that the results do not prove that participants A, C, and E did not experience flow
while playing. Rather, those participants did not consistently display enough flow elements to be considered in a flow state for this study. These results led to a number of possible implications for the conditions of the flow experience.

The Skills/Challenges Balance and Other Flow Elements

As previously mentioned, Csikszentmihalyi eventually identified the balance of skills to challenges as the primary measure of flow (M. Csikszentmihalyi & I. Csikszentmihalyi, 1988). The results of this study do not deviate from that hypothesis. The three participants who indicated a negative or mixed fit with the skills/challenges ratio were also those participants whose responses failed to fit with the majority of other flow conditions. While any comparison is inconclusive, given the small sample size, these results fall in line with previous research.

Given the contextual information that open-ended questions can prompt in an interview, some explanation of the lack of balance in the skills/challenges ratio in these three participants might be put forth. As noted in the results, Participant A reported feeling dissatisfied and uncomfortable, as well as being “not very good at this game.” He had just had surgery earlier that day, and on top of this he mentioned feelings of “nervousness” and indicated he was quite aware of being “observed.” Participant E’s statements reveal that he perceived one task he did as a “cakewalk” but that the other task was too difficult. Finally, Participant C stated that his skills were “way above average” when compared to the challenges. Participant C in particular will be discussed in more detail later.
Implications of the Skills/Challenges Balance

Since a balance of skills to challenges is considered such an important condition for allowing flow to occur, it is interesting to highlight what participants B and D indicated as the cause of this balance for them. For Participant D, the fact that his skills matched but didn’t exceed the challenges is likely due to his being “a casual player.” There is no official definition, but in general casual players are players who either don’t have, or don’t take, the time to keep up with and develop the most effective tactics and character equipment combinations to approach particular situations. They also rarely spend the many hours in the game it takes just to acquire one of the best items, or “top tier gear” for their character. Because Participant D has a family, and kids that limit his play time, he likely is unable to develop his skills and his character to the point where the game poses no challenge to him.

The stated reason for why Participant B’s skills matched but did not exceed the challenges faced was slightly different. Certainly, though he doesn’t call himself a casual player, Participant B notes, “I’m not... uh, haven’t got high level gear or anything like that.” Yet, the reason he gives for his skills being “just adequate at the moment” is: “I just... respec’d my death knight and I’m trying out a new rotation.” It seems that the need to learn a new style of playing actually renewed the challenge of the game and left Participant B more engaged while he worked on mastering it. As he puts it, “if this would have happened a couple of weeks from now, I’d just be here.” This is reminiscent of a comment someone made in the focus group indicating
that since they go so long without playing, they are challenged when they start again while they’re “relearning.”

The above implications suggest questions that might be tested in future studies, such as how flow varies between players with different amounts of experience in a certain play style. In addition, one might conduct a survey of “casual” and “hardcore” players to see how they measure on a developed flow scale. If the results of that study were to confirm that significantly more “casual” players experience flow, it would be an intriguing step for flow research. If “hardcore” players, who by definition play more than “casual” players, were found to experience less flow, then either their experience is driven by something other than flow, or flow measurements such as the skills/challenges balance would need to be re-assessed.

The State of Control

Responses from Participant C did not fit the majority of flow elements, yet they were curiously mixed regarding the balance of skills to challenges. Though obviously not conclusive given the sample, it is possible that what Participant C experienced during his play session was a state of control, rather than a state of flow. Not to be confused with the perception of potential control indicative of the flow element discussed in previous chapters, the state, or “channel” of “Control” is a type of experience described by Massimini and Carli (1988) in their research on flow. Based on their studies using the Experience Sampling Method (ESM), Massimini and Carli (1988) characterize “Control” as involving “moderate
challenge,” but “high skill,” while “Flow” involves “high challenge, high skill,” and “Boredom” involves “low challenge, high skill” (p. 270). This concept of control leans more towards an “actuality” of control than the perceived “possibility” that indicates Csikszentmihalyi’s (1990) proposed flow condition (p. 60). As discussed in the previous chapter, even though he was “way above average” in skill, Participant C nevertheless spoke of the “intimidating task” of “tanking,” which requires “a little bit of skill and technique.” During this activity was the only time Participant C reported being “really into the game.” Although his lack of indication for the majority of flow conditions yields little support for flow, it is possible that during this one activity the highly skilled Participant C was confronting slightly higher challenges and moving from a state of boredom to a state of control. Future research may want to address the state of control as an enjoyable state in and of itself.

**Measuring Flow Experiences**

The study employed a qualitative analysis of personal interview data, and in this respect it was similar to Csikszentmihalyi’s (1975) early research on the concept of flow. This method was a departure, however, from the quantitative survey methods employed by some recent studies of flow in games (Bowman & Boyan, 2008; Voiskounsky et al., 2004; Weibel et al., 2007). The primary purpose for using a qualitative method was to provide context and a depth of description for those segments of play when flow occurred. However, the interviews also yielded data that might hold conceptual implications for measurements in flow research.
These implications lack the validity of a controlled experiment and the generalizability of a large sample size, but they are nevertheless worth noting here.

**Balance of Skills to Challenges**

One might argue that the question measuring a balance of skills to challenges, “How would you say your skills matched the challenges you were facing in the game just now?” (question 6), along with its follow-up probes, may not fully get at the phenomenological experience of flow. Future studies may want to more fully describe the experience of this important flow element. While follow-up probes were designed to prompt more detail if the skills and challenges were out of balance, none were designed to further explore how participants felt when facing those challenges. Questions asking more details about these challenges and the steps taken to match them (or the failure to match them) might be beneficial to flow research as a whole, and to building an understanding of this flow element in particular.

**Loss of Self-Consciousness**

In adapting questions from one of Csikszentmihalyi’s (1988) Experience Sampling Forms (ESFs) towards a qualitative measurement in line with Csikszentmihalyi's (1990) elements of flow, it seemed that the “loss of self-consciousness” element (p. 62) might be described in two distinct ways. Recall again Csikszentmihalyi’s (1990) statement that, “in flow there is no room for self-scrutiny. Because enjoyable activities have clear goals, stable rules, and challenges well
matched to skills, there is little opportunity for the self to be threatened” (p. 63).

This statement speaks of a lack of self-criticism or self-involvement during a flow state. Yet, also recall Csikszentmihalyi’s (1990) proposal that:

Afterward, when the activity is over and self-consciousness has a chance to resume, the self that the person reflects upon is not the same self that existed before the flow experience: it is now enriched by new skills and fresh achievements (p. 66).

This proposition details a sense of pride and self-satisfaction after a flow state. To some extent, both these descriptions are measured in Csikszentmihalyi’s sample ESF with the questions “How self-conscious were you?” and “Were you satisfied with how you were doing?” (M. Csikszentmihalyi & I. Csikszentmihalyi, 1988, p. 257-258), respectively. As noted in the methods chapter, the first of these questions was not used due to the researcher’s desire to avoid psychologically charged language in the interview. It was hoped that descriptions answering both would be revealed in the open-ended “Why or Why not?” follow-up and in contextualizing data from responses to other questions throughout the interview such as, “Were you comfortable while playing in here?”

Interestingly, the interview data did indeed yield results regarding both the during and the after descriptions of this flow condition, both in response to the same question, “Were you satisfied with how you were doing?” and its added follow-up, “Why or Why not?” Even more intriguing, all the participants who indicated that “no,” they were not satisfied, gave follow-up descriptions that showed self-criticism and/or self-consciousness during the described activity, in antithesis of Csikszentmihalyi’s (1990) description of a “loss of self-consciousness” in flow (p. 62). Furthermore, all the participants who indicated that “yes,” they were satisfied,
gave follow-up descriptions that displayed a sense of pride, self-satisfaction, and achievement in line with Csikszentmihalyi’s (1990) description of what happens to self-consciousness after a flow state. These results suggest that the after-the-fact description might be the best indicator of positive results for this condition, while the during description might be the best indicator of negative results. A more targeted experiment with a larger sample size would be necessary to truly explore this implication, but it makes sense conceptually. If someone was truly not self-conscious, he or she would not be pondering, “I didn’t feel self-conscious then.”

Control Potential

Previous discussions and analyses have suggested that the flow element involving the perception of potential control bears strong conceptual links to the balance of skills to challenges, as well as to the self-satisfaction indicator just discussed. Indeed, as mentioned in the last chapter, the only data supporting this flow element was the same data that supported the loss of self-consciousness element. Though once again inconclusive, at first glance these results seem to suggest that the two elements are so conceptually close as to describe the same thing, or that participants might not distinguish between the two. A third implication takes into account Csikszentmihalyi’s (1990) use of the word “possibility,” along with his sample descriptions of the condition, which involve people speaking about some hobby in general or about the preparations that give them a sense of control with that hobby (p. 60). These sample descriptions do not seem to be based on immediate recollections of activities, but rather based on
people thinking about doing the activity in the future. Reported after the fact, a person’s feelings that he or she maintained control in the face of challenges are conceptually indistinguishable from the self-satisfaction and sense of achievement discussed above. However, projected feelings of potential control and confidence in the precautions the person will take to face the challenges ahead might be conceptually different and more revealing of the flow condition. This implication could only be explored by conducting an interview before, as well as after, a play session, which was not the procedure for this study.

Degrees and Variability of Flow

Little research has been done about whether there are degrees of flow or rather that flow is a single state that a person can either be in or not be in. Flow research has focused on different states or “channels” experienced depending on the balance of skills and challenges, for which flow is conceived of as a single state among seven other states or “channels” (M. Csikszentmihalyi & I. Csikszentmihalyi, 1988; Massimini & Carli, 1988). However, given the findings that three participants experienced some elements of flow, but not the majority of those elements, it is a possible implication that different degrees of flow lead to an experience of more or less of the flow elements. Again, a targeted study with a larger sample size would be required to explore whether flow is a state that can be expressed in degrees.

If flow is indeed a single state without degrees, one might still ask the question of whether a person may move in and out of a flow state multiple times during a certain activity. Responses to the question, “Did how into the game you
were vary while you were playing?” (question 12), may yield implications to the variability of flow. Remember, however, that being “into the game” is not necessarily synonymous with flow. Participants D and E both strongly indicated that how “into the game” they were varied while playing. However, their responses to the follow-up question about how usual this variance is were problematic in determining how the phenomenological experience of flow varies. Participant D noted that:

> It varies depending on what is going on around me. It depends on if I’m at home. I’ve got kids, I’ve got a family, so they may pop in and I’ll stop the play or they may be saying something and I’m concentrating on them and I’m not concentrating on the game.

Similarly, Participant E responded that “with an MMO like this, you know, it’s... you can spend a ton of time focused on it but, you know, it can vary I guess.” Both of these responses indicate a variability of concentration, but not necessarily a variability of flow.

Should future studies address the implications of the degrees or variability of flow discussed above, they may wish to utilize other methods. In particular, if some linkage were firmly established between flow and physiological changes these implications could be explored in more detail. Such studies might measure flow with physiological arousal as utilized by Lim and Reeves (2009), or with fMRI technology, as proposed by Weber et al. (2009) in conjunction with an interview or ESF data. Variations in those physiological measurements could then determine whether flow varies and if there are degrees of flow.
Flow Segments

The ultimate goals of this study were to locate segments of play where flow may have occurred, and to describe what sorts of messages appeared on the screen during those segments. Participants B and D were the only two whose descriptions strongly indicated an experience of flow. Therefore, the only segments of play considered to be flow segments were those parts of the game participants B and D described as being the most enjoyable, when they were “really into the game.” Both of these subjects indicated these segments to be when they were playing through dungeons, which involved one dungeon playthrough for Participant B and two for Participant D. Interestingly, the two subjects who showed the least support for a flow experience, participants A and E, did not play a dungeon during their play sessions. Meanwhile, Participant C, who showed mixed support for a flow experience, also played through two dungeons. These flow segments, and the messages appearing within them, reveal some interesting implications that might be further tested in the future.

Dungeons and Flow

The correlation that all identified flow segments occurred within dungeons is a particularly intriguing one. Though this finding is problematic given the sample size, as well as the fact that Participant C also played through dungeons, its implications should be noted here. A dungeon is a type of area in the game called an “instance,” which is a bounded space in the game that only a certain number of people, usually a group, can be in at a time. It gets the name “instance” because each
group is playing a different instance of the same game environment. In this way, multiple groups can be running the same dungeon simultaneously, but because they are in different instances of this dungeon, what they see is unaffected by what those other groups are doing. Dungeons are also technically considered “raids” by Blizzard, the company that makes the game, though many players only use the term “raid” to refer to those instances where anywhere between 10 and 40 people team up as a big group comprised of smaller groups all playing the same instance. The participants in this study only played through dungeons designed for five-player groups. Interestingly, all the participants in the focus group for this study mentioned “raiding” as being the most involving part of the game for them, though it is not clear whether they meant to distinguish between these small five-player dungeons and the larger instances. Regardless, it is worth looking at these segments of the game in particular for future studies of flow in MMOs.

After looking at the recorded data, some noticeable characteristics of dungeons are worth highlighting here in relation to flow. First, a dungeon is a bounded space with very clear goals—usually to follow the paths to the end and defeat the most dangerous NPC enemy, defeating other NPC enemies along the way. This seems to feed into the clear goals and immediate feedback element of flow. Second, because it is an instance, there are no other players running through that are not part of your party, which means everyone is concentrating on the same goal. In more open parts of the game, a group may get to a certain NPC enemy first and kill them, so any other groups in the area have to wait for the NPC to “respawn” for their turn. This problem is not present in a dungeon instance, so a player might be
more able to concentrate on the task at hand without periods of waiting or
distraction. Further contributing to the flow element of concentration, in a dungeon
a player does not need to move very far between periods of activity or combat. In
the focus group, one participant commented that while they got right into the game
as soon as they were doing a quest, it took longer if they had to travel somewhere to
get to the quest. In a dungeon, as seen from the participants’ gameplay footage, the
player is already in the general area to complete their tasks, and they never have to
travel very far to reach the next goal for that task. Future research might find ways
to isolate and test these particular factors, seeing to what degree travel time or the
presence of other groups affects flow.

The Personal Nature of Flow

In undertaking flow research, one must understand that the experience of
flow is subjective. While there might be certain elements or messages that
commonly encourage flow, there are other factors that might be particular to
personal preferences of the one having the experience. This might explain some of
the differences between the flow segments. For instance, Participant B stated that
his main purpose of playing the game is “for the RPG part of the game. It’s for doing
the questline, seeing the storyline. I like just seeing all that unravel.” In light of this,
it is interesting to note that the dungeon Participant B enjoyed displayed almost
twice as many plot-related messages from NPCs when compared with the dungeons
of the other flow segments. It also included more plot-connected objects. Participant
D reported being into the game during dungeons because of the other players
relying on him, and also noted how important immersion was to him. Though Participant D himself only spoke once across both of his flow segments, his second flow segment displayed twice as many messages by other players when compared to Participant B’s flow segment. As for immersion, both of Participant D’s flow segments displayed a greater variety of ambient effects. These implications are even more questionable than other results revealed in this discussion, however, due to the fact that the dungeons in question were randomly selected by the game, not chosen by the subjects. If one wanted to look at the relationship between players’ personal preferences and the dungeons in which they experienced flow, one would have to get multiple sets of data involving the same dungeon for each person, as well as all other possible dungeons. This would be a tedious task, but combined with other theories, such as Uses and Gratifications, might yield interesting data regarding game players and flow.

Playing with Others

A key feature of dungeons is that they involve playing with others and sharing the same goals and tasks. All subjects spent the majority of their time during the recorded play session doing solo activities in the game, but it is not surprising that the particularly enjoyable moments indicated involve other people. World of Warcraft is, after all, a Massively Multiplayer Online Game. While flow can often be a solo experience, Csikszentmihalyi (1990) points out that it can just as often involve other people, and numerous flow studies support this, (Han, 1988, Sato, 1988, Weibel et al., 2008). Although it does not explore playing with other players, Weibel
et al.’s (2008) study did show significantly more flow when players believed they were playing against a human than when they thought they were playing against an NPC. Similarly, Lim and Reeves (2010) showed that players experience greater physiological arousal with other players than with NPCs, whether playing against the other players or with them. Given this previous research, the results of the present study in regard to social aspects of play in relation to flow are worth discussing.

The design of the interview questions, and the subsequent data analysis, took care to look at any social interactions that might be going on in the game. The primary reason for this, other than the literature, was that all of the focus group participants discussed other players in some way. Most of them mentioned starting to play with friends they already knew, and many said they keep playing to stay in touch with friends and might quit if their friends quit. Though participants B and D were not playing with friends, but rather random other players assigned by the game’s programming, their data still indicates that playing with others was an important factor. Participant D notes, “anytime I’m in a dungeon I try to be into the game because I know there are others relying on my actions,” and later adds, “you know, to me that means something. I don’t want to just, you know, dump ‘em.” Participant D contrasts this dungeon experience with the “casual feeling when you are out by yourself just questing. You know that there’s no consequences, really, to your character or anybody else’s character.” While Participant B’s main focus is the game’s storyline, and he states, “most of my daily routine is solo,” he also happily mentioned that “I got a good group,” when describing his enjoyment while playing.
Participant B also participated in the most communication with the other players he was playing with, sending 20 messages during his one flow segment as opposed to the 1 message sent by Participant D. The distinction between group and solo play online is an interesting topic that this study only barely touches upon. It would be interesting to see more research in the future on what differences there might be in flow or enjoyment in general between these two types of play, both within participants and between participants.

Communication

Communication within the game, or lack thereof, was an interesting type of message revealed in the data. In the focus group, 5 of the 7 participants noted how important communication was in the game. When the conductor of the focus group tried to tease out what kind of communication they were talking about, many indicated that task-based communication was prominent. These comments were taken into account when analyzing the gameplay footage for the flow segments and, as noted in the results, most of the messages involved communication about the task at hand. Of these messages, fewer were actually intended to direct the party’s action in a certain task than simply to talk about the task in general, however. Regardless, there were very few off-topic messages that involved socializing. A larger sample size would be required to establish whether these results are common. This data does offer insight that should be explored in the future. Perhaps recruiting a large group of players to record their play sessions for a week might provide more data about how prominent task-communication is in player-to-player dialogue.
The amount of communication occurring, regardless of what type, may also be related to flow. There were notable differences in the amount of communication among the flow segments, and also between the flow segments and Participant C’s dungeon segments. Future studies with larger sample sizes will be needed to test these implications, but they are worth noting. There were more player-to-player messages overall in each of the flow segments as compared to Participant C’s dungeon segments. The most notable difference is in other players’ messages, as Participant C’s first dungeon only displayed 3 such messages and his second dungeon only displayed 2. In contrast, Participant B’s flow segment contained 17 of these messages, Participant D’s first flow segment contained 12, and Participant D’s second flow segment contained 34. As for the amount of messages sent by the subjects, Participant D sent only 1 such message overall and Participant C sent 3, while Participant B sent 20. Additional research should be done concerning how player-to-player dialogue relates to flow and whether messages initiated by other players, or by the participant themselves, or some combination, is the most significant factor.

**Goals and Feedback**

Among all the messages in the flow segments, described from analysis of the gameplay footage, most of these relate to goals and/or feedback in some way. Many of the player-to-player messages discussed above involve some sort of information or direction related to the task at hand. By its very design, the game is made to provide constant and immediate feedback at every frame, dungeon or not. The
visual interface, despite individual differences in preference, provides a constant form of feedback on the status of a player’s avatar and that of their enemies and allies. All the abilities activated by players and NPCs alike have visual effects in the game that, while also perhaps producing excitement and immersion, also provide constant feedback for experienced players that can recognize them. Even the most basic act within the game, movement, is a constant feedback of the changing location of the player’s avatar. Added to this constant feedback, as discussed previously, the very environment of the dungeon provides clear goals. However, among other gameplay footage outside of dungeons, there were also clearly identifiable goals, with quest tracking windows and even markers on the map pointing the way to certain goals. Whether the goals are clearer in a dungeon than in other segments of the game, thus encouraging flow, would require much more extensive research with a larger sample size, but this possibility is something to look for in future studies.

The Importance of Constant Activity

In addition to clear goals, one integral aspect of a dungeon is that progression towards those goals is nearly constant. As noted earlier, the bounded space within the game decreases distractions and leads to smaller distances a player has to travel to get to the next step in accomplishing goals. For the flow segments identified in this study, advancing towards a goal meant a progression of periods of constant action (combat) interspersed with brief periods of inaction that gave the subjects and their party members time to prepare for the next combat. During the moments of combat, actions by the participant, NPC enemies, and other players alike filled the
participant’s screen with constant flashing colors, markings, and other special effects. In all flow segments, each participant spent these periods of combat clicking various ability buttons with the mouse cursor, initiating a new attack as soon as he was able until all nearby enemy NPCs were defeated.

While the sample size makes conclusive comparisons impossible, comparing these results with Participant C’s dungeon segments brings up some interesting questions. In Participant C’s first dungeon segment, the amount of constant action described above is not present. The point of view for this segment was set so far above the avatar’s head that the special effects failed to fill the screen. In addition, the participant himself was doing very little, in contrast to the furious clicking displayed in the flow segments. This seemed more to be because constant action by the participant was not necessary, which could be related to a low challenge level. Participant C’s other dungeon segment was the “tanking” segment that he enjoyed so much, as described in the results chapter. Interestingly, this segment showed constant action during combat comparable to the flow segments. The only noticeable differences were that instead of clicking with the cursor, Participant C used hotkeys throughout his play session, and he in general moved and turned the point of view much more slowly than the other subjects. Future research of flow in video games should take a more targeted approach to the amount of activity displayed, and its relationship to flow, if any. More precise means of measuring differences in the activity displayed on the screen, perhaps with special software, would also be necessary for such studies.
Defining Flow Segments

The use of time-synched webcam and gameplay footage to narrow down potential flow segments was interesting, but inconclusive. Previous eyes on screen research (Krugman, Cameron, & White, 1995; Miller, 2006) measured orientation of the face and eyes towards the screen during certain segments. These studies were focused on television viewing however, which is a very different activity than playing a computer game. While playing the computer game, a participant’s face was often very near the screen, and the participant’s eyes would wander and flicker back and forth to different parts of the screen. While moments of looking away were therefore quite noticeable, these moments were few. Within the long span of time when the participant’s eyes were on the screen, there was no way to distinguish whether some moments indicated more involvement than others. Research done by Smilek, Carriere, and Cheyne (2010) is more relevant to computer usage, showing some correlation between “eye blinking” and “mind wandering.” However, that research used a special eye-tracking system and thus was unhelpful in analyzing the present dataset. However, the eye movements observed in the data suggest that the use of such eye-tracking technology might be useful for future studies of video games and flow, particularly since it can be done unobtrusively.

The analysis also revealed possible variations in how far participants leaned in towards the screen. However, as noted in the last chapter, no exact conclusions could be drawn due to the small sample size and the lack of effective measurement. If equipment were set up to measure the distance of a participant’s face in relation to the screen, future studies could determine if leaning behavior could be a potential
indicator of flow in computer games. These studies may also want to differentiate between flow and concentration, as this behavior might be an indicator of either or both of those conditions.

**Implications of Play Length and Interview Timing**

Given the small sample size, as well as the focus group findings, it was decided that the time to stop play and begin the interview should remain consistent across all participants. Future studies following a similar procedure may wish to vary when the interview takes place. Random variation, with questions focused on only the most recent activity the participant was engaged in, might yield results regarding how long it takes participants to reach a flow state. Conversely, interrupting play during various specific activities within the game may indicate how flow varies across those activities. For instance, though the flow segments identified in this study all took place while participants were in a dungeon, there was specific mention of questing as an important activity of the game by participants A and B. Several participants also mentioned or displayed activities such as resource gathering, crafting, and traveling. The closed-circuit camera would allow a researcher to see when one of the above activities was taking place, and to then stop play for an interview directly after that activity. If a large enough sample group were randomly assigned to each of these activities, differences in participants’ flow experiences across those activities could be assessed.
Future Video Game Research

The results of this study yield implications for the larger body of video game research, even beyond *World of Warcraft*. Due to *World of Warcraft*'s status as an exemplar of the MMO genre, many other MMOs have adapted similar gameplay elements. Therefore, it is likely that most of the implications of this study could be explored in research on other MMOs or on the genre of MMOs in general. Beyond the genre, there are some implications that may be applied to all video games.

The most notable implication for video games in general is the finding regarding constant activity and the pace of gameplay. If the spacing of periods of constant activity is indeed related to flow, then this is a finding that should hold true for most video games. All video games have a pace to them, defined by the periods prompting frenzied activity on the part of the player and periods of downtime for the player to recover from the last period of activity and prepare for the next. The results of this study suggested that the periods of activity may prompt flow, and this is an implication that should be explored in other video games.

Another implication involves the feeling of familiarity. Recall from the analysis that a number of participants associated positive feelings of enjoyment with familiarity. This is evidenced in comments such as Participant C’s that playing made him feel, “pretty good... it’s like a warm glove... it fits well.” Other participants suggested the same feelings, such as Participant B’s statement that he felt, “like I always do. I enjoy playing.” Participant D, similarly, noted that, “it was fun, it was normal... when you’re leveling it’s almost like you’re in a groove. You almost, after awhile, can do it blindfolded.” It is interesting that participants B and D, who both
displayed evidence of a flow state, were two of the three who noted this familiarity. No conclusions can be made regarding the relationship of familiarity and routine to flow and enjoyment, but if such a relationship exists, it would certainly be an important topic to explore in future video game research. It is also possible that positive feelings of familiarity and routine represent another process entirely separate from flow that could explain why players enjoy particular games and what keeps them coming back.

Finally, the appearance of flow segments only during play in the dungeons, while primarily applicable to other MMOs, may yield implications for video game research in general. One of the most important things to note about a dungeon, as previously mentioned, is that it is a bounded space—within it, distractions are limited and most activity is directed towards the task at hand. In World of Warcraft, many of the distractions that the dungeon space controls have to do with limiting interference from other players that do not share the same goals, which would be difficult to apply to a single player game, or even to a small (2-4 person) multiplayer game. However, if one conceives of the bounded space as limiting distractions in general and focusing tasks, then it becomes much more applicable. Many single-player games have this type of bounded space in special missions. These missions often display many functional aspects similar to a dungeon in World of Warcraft. They are often enclosed, or at least in some way smaller, bounded spaces with clear goals and constant activity. Like dungeons, they are an occurrence in the game that is represented to the player as having some degree of import to the storyline and/or to the player’s advancement in the game in terms of rewards or leveling.
these similarities, and the noted importance of the bounded space of a dungeon, future video game research should look at these bounded areas of play in a number of games to see what relationship such play segments have with flow and enjoyment.

In addition to those implications discussed above, there are several exciting possibilities for future studies in the medium of video games. The footage of the hour long play sessions captured by the screen recording software provided an immense amount of data for each participant, even more so when combined with the time-synched webcam recording of each participant's face. With a larger sample size, the proper software and equipment, and the right methodology, data like this could reveal much about how people interact with computers, even beyond nonverbal indicators of enjoyment. The sheer amount of detail captured in each frame of gameplay footage could be used to research any number of theories in relation to video games. In particular, analysis of messages sent between players might be revealing for research on information seeking, politeness theory, and self-disclosure on the Internet. If a researcher could recruit a large *World of Warcraft* “guild” and record their gameplay over the course of a week, they would make great strides in advancing organizational communication theories about groups working together online.

**Limitations**

This exploratory study was subject to a number of limitations. The most notable of these limitations, as previously discussed, was its small sample size. This
prevented conclusive comparisons between participants and led to a very low level of generalizability. Additionally, the method of analysis—qualitative comparison of participant responses to Csikszentmihalyi’s described flow conditions—is an untested method. It was designed to provide a depth of detail and context, but future studies will be needed further refine it, as well as to test the validity and reliability of the measurements. As noted above, the analysis of the webcam footage of participant nonverbals requires additional equipment and methods in order to be conclusive. Also, while great effort was taken to avoid error while compiling the messages that appeared during each flow segment, as described in Chapter II, there is always the possibility that some messages went unnoticed.

Additional limitations worth mentioning involve the structure and procedure of the interviews. The researcher conducted all the interviews personally, which may be problematic even though all attempts were made to recognize and avoid potential biases. The benefit of the interviews being conducted this way was that the researcher could better understand responses and pose follow-up questions due to his knowledge of the game. That benefit was thought to outweigh the risks for this exploratory study, though future studies should employ research assistants to conduct the interviews.

The ordering of certain questions may add to the limitations of the interviews. In particular, the questions, “Would you say you were really into the game just now when I came in?” (question 10), “Were there other moments while playing here when you really got into the game?” (question 11), and “Did how into the game you were vary while you were playing?” (question 12), all precede any
definition of what being “into the game” means. How the participant defines being into the game was measured last with the question, “What does it feel like to you when you are really into the game?” (question 13). In future research, there might be more clarity with regard to identifying flow segments if the participants were first asked to define being “into the game” and then asked what moments during their play session, if any, such a state occurred. In this way, if a participant’s definition of being “into the game” fit with Csikszentmihalyi’s (1990) descriptions of flow, then a more conclusive link could be made with a particular segment of gameplay.

Finally, it should be noted that three of the participants expressed some discomfort during their play session. Participant A expressed noticeable discomfort from his previous surgery, which is a factor that could not be anticipated in this study. However, both participants A and D mentioned that it was “a little hot” in the room at times, though Participant D said this had “minimal” effect on his experience. After the first participant indicated this, steps were taken to make the room more comfortable, such as opening the doors more. However, the researcher had no control of temperature in the building, particularly because many participants chose to come at night after the building was closed. For similar studies in the future, researchers may want to ensure that they have direct control of temperature and other environmental factors in the space where they conduct the study. Participant C expressed slight discomfort in not playing on his home setup, though he added that “it was comfortable enough. I’m used to it enough to get the hang of it.” Again, there was little alternative for this study, as it would have been
impossible to gather all the data from the participants’ homes. However, future studies that focus on just the screen recording of gameplay might be able to accomplish this by having participants record their own gameplay sessions from their home.

**Conclusion**

The results of this study offer many interesting implications for future research on the experience of flow in MMOs like *World of Warcraft*. They also contribute to the body of flow research in general. In contribution to flow research, the importance of the balance of skills to challenges was supported. However, research regarding the preferences for challenge levels in “hardcore” players and “casual” players was proposed in order to test the measurements of this element of flow or to discern other processes at work in players who seem to enjoy having their skills outweigh the challenges. Alongside this, it was suggested that future studies further examine players’ reported experience of challenges and the skills they employ to face those challenges on a more detailed level. New ways of measuring certain elements of flow, such as the loss of self-consciousness or feelings of control potential, were also proposed, as were new methods of interview timing to better measure certain aspects of flow during video game play. Finally, further research regarding the degrees and potential variability of flow was called for, with a number of methods proposed such as eye/pupil tracking technology, brainwave or fMRI scanners, and other measurements of physiological arousal.
The implications to futures studies of MMOs and other video games were many. The importance of dungeons, or instances, as bounded spaces within the game that limited distractions and provided clear tasks with frequent activity was discussed. The concept of these bounded spaces was later applied to video games beyond MMOs, even many single-player games. The importance of the pace of gameplay activity and the enjoyment of familiarity and routine were also implications that spanned both *World of Warcraft* and other video games. Relationships between flow experiences and player preference, possibly combined with Uses and Gratifications theory, were also proposed. For multiplayer games, the importance of playing alongside other players was discussed, along with future studies that might explore the on-task and off-task communication occurring during play. Finally, the method of this study, particularly the recording of gameplay segments, yielded an immense amount of data, and could be used for many future studies of video games, whether the subjects of study are single-player games or MMOs.

In the two decades since the first graphical MMO, these games have gained rapid exposure in the popular culture. As the popularity of MMOs has increased, more researchers in academia have recognized the growing need to study them. The results of this study serve to further that line of research, as well as broader research on video games in general. These implications will hopefully lead to future studies that will help us understand what is going on in these games, why players are drawn to them, and what their effects might be.
References


*World of Warcraft*. 3.3.5. PC Game. Blizzard Entertainment, Developer/Publisher (2010).


Appendix 1

Focus Group Questions

What first drew you to *World of Warcraft*?

What kept you playing for as long as you did?

In *World of Warcraft* there are many built-in tools for communicating and socializing with other players, including general chat channels, guild chat, group chat, mail, and whispers or tells. When playing, how much focus do you or did you usually place on these social aspects of the game compared to other aspects?

PROBE if players engage in social aspects:
Has anyone felt interrupted by these social aspects of the game at times?

What part of the gameplay itself do you or did you enjoy the most?

Have you ever been in a situation where you couldn't bring yourself to stop playing at the moment?

PROBE if yes:
What was happening in the game at that time?

PROBE:
What were you feeling at the time?

PROBE:
What needed to be done before you felt like you were at a good stopping point?

PROBE:
How often has this happened to you?
PROBE (if more than once):
Has it usually happened under the same conditions?

When you're really getting into the game, what is going through your mind?

PROBE (if environmental factors aren't mentioned, e.g. time, space, other people):
What were you aware of in the environment around you?

About how long were you usually playing in a typical session before you felt like you were really getting into the game?

Do you or did you find the game challenging?

PROBE if yes:
Do you feel like your skills were up to the challenges you have faced in the game?

Overall, what do you think the most involving parts of the game are, moment to moment?
Appendix 2

Interview Questions

1) What were you just doing in the game?

2) How did you feel when playing just now?
   PROBE (if limited response): What kind of mood were you in?
   PROBE: Why?

3) Was it difficult for you to quit the game when I came in?

4) How important to you was the activity you were just doing?
   PROBE: Why?

5) Was what you were doing important to others in any way?
   PROBE (if yes): How so?
   PROBE (if not answered in response):
   Were there others with you where you were in the game, or were you playing solo just now?
   PROBE: Were you communicating with others?
   PROBE: Are these people you often play/communicate with?
   PROBE (if not answered in response):
   Were you playing against other players or against NPCs?

6) How would you say your skills matched the challenges you were facing in the game just now?
   PROBE (if limited response): Would you say the challenge was above, below, or matching your skill level?
   PROBE (if challenge higher): Do you try to find ways to make the game easier for you?
PROBE (if challenge lower): Do you try to find ways to challenge yourself more?

7) Were you satisfied with how you were doing?
   PROBE: Why or Why not?

8) Were you very concentrated on what you were doing?
   PROBE: Why or Why not?

9) Were you comfortable while playing in here?
   PROBE (if not): Why were you uncomfortable?
   PROBE: How much do you think your comfort level affects the gameplay experience?

10) Would you say you were really into the game just now when I came in?

11) Were there other moments while playing here when you really got into the game?
   PROBE (if yes): What were you doing during those moments?
   PROBE (if yes to this question but no to question 10):
   What do you think the difference was between when you were really into the game and when I came in?

12) Did how into the game you were vary while you were playing?
   PROBE: Was it more or less than usual when playing for this amount of time?

13) What does it feel like to you when you are really into the game?
Appendix 3

Transcript for Participant A

Ryan: To start off with... what were you just doing in the game.

A: Okay. Um, lets see...I ran an instance, uh, quested for awhile, leveled professions and worked the auction house.

Ryan: Ok, How did you feel while playing just now?

A: Observed! (laughs) No, um...

Ryan: What mood would you say you were in?

A: Fixated, I guess, just sort of not really paying attention to much else.

Ryan: And Why? I guess that might seem an obvious answer but...

A: Uh, I suppose...uh, nothing else to do or be distracted by

Ryan: Was it difficult for you to quit the game? I see you were doing transport...

A: (Laughs) No.

Ryan: Um... How important to you was the activity that you were just doing?

A: Not very.

Ryan: And why was that not a very important activity?

A: Uh, I was leveling professions, which, you know, is a gold dump. It's sort of a not pleasant thing within the game.

Ryan: Was what you were doing important to others in any way?

A: No. Well... I guess I could uh say it would be important to people who were buying the things that I was making in the game.

Ryan: Ok... um, were there others with you when you were in the game?

A: At times.

Ryan: And were you communicating with others via chat services?

A: Yeah, yeah.
Ryan: Are these people you often play or communicate with?

A: Yes.

Ryan: Um... Let’s see... Were you playing against other players or against NPCs?

A: Uh, NPCs.

Ryan: And how would you say that your skills matched the challenges of the game?

A: (laughs) I’m not very good at this game, um, comparatively speaking, I guess. But... uh...

Ryan: Would you say they were about right, or above the challenges or below?

A: About matched with the challenges, I’d say.

Ryan: Ok, were you satisfied with how you were doing?

A: No.

Ryan: Why not?

A: Uh, I was very inefficient with my bars, I guess. Uh... in my combat sequences and uh, I think it might have been the product of nervousness... but I don't know.

Ryan: Were you very concentrated on what you were doing?

A: Yes

Ryan: And were you comfortable while playing?

A: Um, so-so.

Ryan: And if not, why? What caused your discomfort?

A: Well I had... surgery earlier today... so I’m kind of uncomfortable a little bit... just... just from being kind of achey. My body is kind of distracting me a little bit and it’s a little hot in here... but....

Ryan: Ok. Good to know. Um, would you say you were really into the game just now when I came in?

A: Yes.
Ryan: And were there other moments while playing in which you really got into the game?

A: Yes.

Ryan: And what were you doing during those times?

A: Questing.

Ryan: What did it feel like to you, when you were really getting into the game? I know that’s kind of a subjective term. But, what does getting in the game mean to you?

A: Oh...Not really paying attention to the time or thinking about if I have homework, if I need to call my parents. Is my body bothering me or something like that? Um, but more I’m just focused on the one task at hand and doing what I can to complete it.
Appendix 4

Transcript for Participant B

Pre-interview B: One second... somebody um texted me...

Pre-interview Ryan: Alright, that’s fine.

Pre-interview B: I didn’t even hear it. I had it turned... I mean, I heard it but I didn’t... (trails off)

Ryan: To start off with, what were you just doing in the game?

B: Well, my main thing is I was just doing some Dailies and ran the Daily Random, that was about it.

Ryan: So, what is the Daily Random?

B: Oh, you can, uh... Its called Daily Random/Daily Heroic, you’ve probably heard of that a few times. I’m not sure if anybody’s done that with you, here in this, but, uh, all it is , uh, in Northrend and before Wrath of the Lich King, in Burning Crusades, there was heroics. They just implemented it uh, um three patches ago? Two patches ago? Something like that. Two major patches ago... Uh, where you can queue up for a Random. Which means you can, um, group with people from different realms just to make the dungeon search a little easier. And they’ve made a “Daily” out of it, so.....

Ryan: Oh, ok. Well, how did you feel while you were playing just now?

B: Like I always do. I enjoy playing. It’s a matter of, uh, what are you asking?

Ryan: Like, what kind of mood were you in?

B: Uh... intent. Hah, if that even explains the mood. It was just... when I log on, I log on for a reason, and uh, you know, typically...if I didn’t have a reason to get on, I’d just be standing there saying what do you guys want to do?

Ryan: Alright. Was it difficult for you to quit the game when I just came in?

B: No. No.

Ryan: How important to you was the activity that you were just doing?

B: I can take it or leave it. Are you talking about playing the game in general or ...?

Ryan: No, the game
B: The Dailies?

Ryan: Yes, that specific activity.

B: Eh. It’s money. It’s gold. You know what I mean? I can take it or leave it. It’s just something to do while I’m on waiting on others to get on or something like that.

Ryan: Ok. Was what you were doing important to others in anyway?

B: Probably. Like are you talking about “others” in just...

Ryan: Others in the game.

B: Oh. Probably. Its uh, you can make anywhere between 250 to 300 gold a day in just, just doing Dailies. So, I’m sure.

Ryan: Um, were your actions, I guess, affecting others in what you were just engaged in?

B: No.

Ryan: Ok. So, uh, were there others with you in the game?

B: Yeah uh, when we, when... when you do the Daily Heroic you group up with five people and then you go do an instance.

Ryan: Did you do solo as well or...?

B: Yeah. Most of my daily routine is solo.

Ryan: Ok. Were you communicating with others?

B: Sure, sure.

Ryan: And are these people you often communicate with?

B: No. No. Uh. A lot of the people that I often communicate with are on at two o’clock in the morning. You know what I mean?

Ryan: Ok. So different times.

B: They live in Texas. I mean, a lot of times they’re not even on... I’m the Guild Master...So a lot of my guild.... I uh, quit playing a few months ago and uh, just recently got back into it about a month and a half ago. And, um, I really.... over that two month span my guild from 120 members to 40. Yeah. So, it’s uh... And most of
those 40 are Alts, you know, just same people, just different characters. So, nobody’s ever on. So, I don’t know if that helped answer your question.

Ryan: No, no. That answered it. Were you playing against other players or against NPCs?

B: NPCs. I’m not a big fan of PVP... if I can help it.

Ryan: How would you say your skills matched the challenges that you were facing during the game?

B: Average. Um I’m not... uh, haven’t got high level gear or anything like that, but for what I was doing... I did it

Ryan: So you were matched about evenly?

B: Yeah

Ryan: Were you satisfied with how you were doing?

B: No. (Laughs) My uh.... I just uh....respec’d my death knight and I’m trying out a new rotation, so my DPS isn’t what it should be. For... for my level. That’s why it’s just adequate at the moment.

Ryan: Were you very concentrated on what you were doing?

B: Yes.

Ryan: And why? What lead to that concentration?

B: Uh, because I’m trying to figure out my new rotation. I mean, if this would have happened a couple of weeks from now, I’d just be here.

Ryan: Were you comfortable while playing?

B: Yeah.

Ryan: How much in general, do you think whether you are comfortable or not affects how you enjoy the game?

B: Uh. I would say it would affect it a lot. Because, if I’m sitting in a comfy chair and, you know, if I’m comfortable then I tend to enjoy playing a little bit more. I may not be as intent, you know, depending on what day it is. But you would enjoy it a little better. Because if you’re sitting Indian style on the floor and you (makes game playing motions) doesn’t work to well. Comfort has a lot to do with it.
Ryan: Would you say that you were really into the game, just now, when I came in.

B: Yeah. I was about to help somebody but then I realized the hour was up and thought "oh, great."

Ryan: Well, tell them I send my apologies.

B: Yeah, I said I’m sorry, I didn’t realize what time it was and that I’d be on after dinner.

Ryan: Alright. Were there other moments, previously, while playing here that you got into the game?

B: Before this?

Ryan: Before I just came in. Was it, I guess…Does it vary throughout? Were you in and out or were you always just into the game?

B: My main goal, now, is because I know Cataclysm is coming out, so I’m kind of hoarding gold, and uh just kind of getting stuff situated. Because when Cataclysm comes out, that’s where my intentness and my enjoyment will max. Because I like running raids, I like, uh, you know, doing instances and stuff. But, my main, uh, purpose of playing this game is not for all that. It’s for the RPG part of the game. It’s for doing the questline, seeing the storyline. I like just seeing all that unravel.

Ryan: Ok. So, because you’ve already done everything, you’re just kind of waiting for the next content?

B: Yeah. I got all of the achievements in Northrend already, so, done all of Outlands, so yeah, I’m pretty much waiting.

Ryan: Ok. So, I guess, you said you were into the game, but not as much as you would be.

B: Correct.

Ryan: So, like I guess on a scale from 1 to 10 how into the game were you?

B: Probably about a 7. I mean, because, I enjoy. I mean, not to say that I don’t enjoy one part. I just really enjoy the quest lines. Um, but I enjoy going into the instances because it’s a different feel, I mean, it’s a different uh, it’s a whole story line in itself. I mean, if you’ve done the quests leading up to that, you know, then you kind of know what’s going on inside. And you kind of… it’s a whole story line itself. So, it’s enjoyable.
Ryan: Did your enjoyment levels vary while playing, like throughout the hour? Or just...

B: No. During this particular time, no. Um. I guess it faltered a little bit when I realized what instance we were actually doing, but other than that. I ended up getting... I don’t know if it was being here or somehow I got a good group. Because its all PUG, you know, you don’t know who it is. You don’t pick who you get. And, uh, luckily enough, I got a good group. So. There you go.

Ryan: So would you say that this experience was more or less usual for your amount of enjoyment when you were playing at home?

B: Yeah.

Ryan: And what does it... you know... I know that “into” the game is kind of a subjective term. What does it feel like to you? What does it mean to you to be into the game?

B: Uh. Are you ....Let me kind of ask you to clarify the question. Um, are you saying like, does it make me feel any different to be “in”, like while I’m playing?

Ryan: Just, like, how would you define being “into” the game?

B: Like, how into it I am?

Ryan: Like, when you’re really into the game, how would you define that? How would you describe that? How that feels to you.

B: Well, Um, I'll answer your question. I went from 55 to 80 in about 2 weeks.

Ryan: Wow.

B: So, when I’m into, I’m into it. Um its... I thoroughly enjoy the quest lines. I’ve played, I don’t know if this is a good or a bad thing, but when I was in college I played a video game for 24 hours straight.

Ryan: Wow.

B: So, I mean, its one of those things that you, know, once it- if its got a captivating story I want to see it. So, um, when its- I can say that it falters, a little bit has, um, as the quests changes or starts coming to an end, but, um- if you catch me right in the middle of doing a questline, you might as well just leave me alone, because I’m not going to talk to you. Well, unless its some grave importance, like you know somebody—I can stop at any time. I mean, I quit for two months. You know, for just no real reason. Just one day...
Ryan: Decided to quit?

B: Yeah, and then my friend told me that, “yeah I’m getting you a key for the Alpha.” So, I’m like, ok, might as well start playing again.

Ryan: Motivation.

B: Yeah, I might as well get back into it so you can at least have something to fall back on.
Appendix 5

Transcript for Participant C

Ryan: What were you just doing in the game?

C: Right before we started this I was gathering minerals for crafting professions.

Ryan: Ok. And how did you feel when playing just now?

C: Pretty good. I mean, that’s my standard daily routine, so it’s... it’s like a warm glove, you know?

Ryan: Ok.

C: It fits well. You just move in and feel like you’re a part of something. So, it feels fine.

Ryan: Was it difficult for you to quit the game?

C: No, no. Uh-uh. Not at all.

Ryan: How important to you was the activity that you were just doing?

C: Hmm... At this point less...

Ryan: Less important?

C: I mean, now I’m at the point where I’m probably in the waning cycle of the addiction. So, it comes in spurts.

Ryan: So, why was that particular activity not that important to you?

C: Oh, the Mining? Because I don’t need it. I was just sort of doing it.

Ryan: Ok. Was what you were doing in the game important to others in any way?

C: Yeah. It allows me to craft items for them and give them new stuff.

Ryan: Ok. And, while you were playing in the game were there others with you or were you playing solo?

C: A variety. There were a couple of times where early on I joined a group which automatically pairs people together- a party of five- So, there were two: in one case I was healing a group of five people and in the other case I was tanking for a group of
five people. Um, I’m in a guild with people coming online, offline all the time, so I’m always at least able to be social.

Ryan: Um, how much... what’s the balance between social and solo for you. I mean, I know it’s different for different players.

C: Uh, I like the social aspect a lot with people that I know and like. But, there are a huge number of people on there that I would prefer not to be social with. So, it really depends on who’s...

Ryan: Who’s online at the time?

C: Yeah.

Ryan: Ok. Were you communicating with others via the chat service a lot?

C: Not a lot. Just on occasion. A buddy of mine from California got online and I talked to him for a minute. And then a couple of people were looking for people to craft things for them, so I responded to them, and I met them and crafted things for them. Then they said, “Thanks. See ya”.

Ryan: So, how many of the people would you say that you often play or communicate with?

C: Probably about fifteen. Regulars.

Ryan: While you were on there were you communicating with many?

C: Just a couple. Two or three.

Ryan: So, the rest of the people you were grouping with earlier were people you didn't play with often?

C: Random people, yeah. And they’ll even match you now across servers. So, there are people that are on different servers I wouldn’t otherwise have the opportunity to play with. But, because of this matching system...it just pairs you randomly.

Ryan: I heard about that, that’s interesting. Were you playing against other players or against NPCs?

C: NPCs exclusively in this go around.

Ryan: How would you say your skills match the challenges you were facing?

C: I’m way above average
Ryan: Way above average?

C: Yeah.

Ryan: Do you find ways to try and challenge yourself more?

C: Yeah, there are um... With all the PVE, which is player verses environment, there are hard modes that you can now do, uh which requires a lot more attention than just the regular modes. They'll just add a couple of things that increase the difficulty to significantly. So I do, when running the end game content, try to look for groups that are doing the hard modes. Uh, PVP, on the other hand, when you're playing against other people obviously you're going to come against some people that are really good. And that is a great challenge... so, uh, you know, playing against another player, not knowing what to expect... even if you're doing the hard modes in these other instances you know that it's a pattern and that once you master that pattern, you're going to have it down pat and there's nothing else, you know what I mean?

Ryan: Yeah.

C: But with PVP, I'd say that's probably the greatest overall challenge, just getting used to the different play styles and whatnot of other people.

Ryan: Let's see, were you satisfied with how you were doing?

C: Yeah, yeah.

Ryan: And what was particularly satisfying about what you were doing?

C: Tanking is fun. Its something I haven't been doing very long, and like you were talking about when you gather the MOBs together. Umm... Fortunately that was a pretty good group, so it made me look pretty good. But, you know, that was an intimidating task because with my rogue character it's only DPS, which is Damage Per Second, and all I'm basically doing is mashing buttons, making sure I was killing things as quickly as possible. People don't really rely on you, per se, but as a team people do rely on you to draw the attention of all those Mobs and keep it. Which keeps them alive, which allows the group to progress. So, as a tank I felt pretty good about getting that done. In that one run that I did, yeah.

Ryan: Um, were you very concentrated on what you were doing?

C: No.

Ryan: Why not?

C: Just because, again, it's something I generally do – what I just did- is something that I will do, at least in some part, every day. So, I could do that almost blindfolded.
Ryan: Alright, um, were you comfortable while playing here?

C: Mmmm. There, again, playing on a laptop. Normally, I have my game windowed, so I can just quickly go out. So, when I’m waiting and there’s nothing going on, I’ll, you know, go browse...blah blah blah blah. Listen to iTunes, um chat on AIM. So it wasn’t exactly like being at home, but, it was comfortable enough. I’m used to it enough to get the hang of it.

Ryan: Ok. How much do you think your comfort level affects the game play experience?

C: A lot.

Ryan: So, you think, um, I guess, do you think that, that, I guess your moments while playing here were, I guess, not comparable to playing at home? Or...or...

C: No, I chose specifically tasks to do that I knew would be easy here for me. So that I didn’t run into a problem with...uh... because there were keybinds on my mouse and whatnot that weren’t. I guess we would need to have that program. So, I only did things that I knew I would succeed in.

Ryan: Alright, then would you say that you were really into the game, just now, when I came in?

C: No. I was ready to be done.

Ryan: Were there other moments, before, while playing the game, that you were really into the game?

C: Just during the tanking. I was enjoying that. Yeah, I liked that.

Ryan: Ok. Umm... I guess you’ve already kind of described what exactly you liked about that...umm. Is it just because its something you haven’t done very often... as much as some of the other stuff? Or...?

C: That. And, just there’s like a slight artistry to it, you know? You’re having to really... again, you’re working with artificial intelligence, so you know within a certain parameter what they’re going to do. But, making them come together like that, so that the rest of the group can do AOE attacks, which is Area of Effect. You know, it requires a little bit of skill and technique, which is fun.

Ryan: Ok. So, I guess what was different? I know you said you weren’t really into the game when I came in....the difference between when you were really into the game and...uh...
C: Just that, I’m at the point where the only thing that’s really going to make me happy is killing the Lich King, which is, at this point in the evolution of the game, that’s the end. You know, that’s the end content. And on my main character that’s where I’m at, so, I mean everything else right now, is just sort of daily maintenance to keep my gold up, keep my supplies up and whatnot. So it’s just sort of an eh.

Ryan: And finally, I use the term being into the game, and I know that’s kind of a subjective term. So, what does it mean… What does being into the game mean to you?

C: Wanting to progress with other people, um and establishing bonds with people that you’re progressing with, to me, is fun. You know, I could probably jump ship with the group of guys that I’m with and actually go online and apply for a better guild and maybe progress further. But, being with a group of guys, getting used to their play style and progressing with them and helping them and then letting them help me. You know working together. That’s probably the most fun aspect of the game for me.
Appendix 6

Transcript for Participant D

Pre-Interview: D: Oh, you lose track of time in this game I tell yah

Ryan: To start off with, what were you just doing in the game?

D: You mean from the beginning? I play two different characters. I've kind of become an alt-aholic. I've got about 10 characters I rotate between when I play. So, I was playing one of my 80s using the dungeon finder and played a couple of dungeons... then I got kind of bored with that, so I switched over to a warrior, a warrior I'm working on

Ryan: Ok. How did you feel when playing just now?

D: Well, I wasn't as relaxed as I would have been, you know, playing my normal setup, I guess. Like I said, I normally play on one of our laptops, and actually, I've gotten to where I use the track more. Which seems very clunky, and it was at first, but once you get used to it, it's actually very responsive. Besides that, I mean, it was fun, it was normal.

Ryan: What kind of mood would you say you were in?

D: Well, I worked all day, so I was a little bit tired. I may have dozed off, maybe once there. You know when you're leveling it's almost like you're in a groove. You almost, after a while, can do it blindfolded.

Ryan: Yeah, was it difficult for you to quit the game when I came in?

D: Oh, no. Not at all.

Ryan: How important to you was the activity you were just doing?

D: The activity I ended on was not that important. I wasn't working with someone else in the game, so I could pretty much quit at any time. I wasn't doing a dungeon or anything.

Ryan: So, at any point, was what you were doing throughout the game important to others in any way?

D: Yes. Yes. I... We did the um... Which one did we do... I think Oculus... so I was a DPS, I wasn't a healer or a tank, and someone quit so we had to get somebody else, and I think it wasted probably 15 minutes of our time.
Ryan: So, you were playing with others in the dungeon. Were you also communicating with people that you weren’t in direct play with, as well?

D: No, Not really.

Ryan: And, were the people you were playing with people that you often play with? Or, were they...

D: No, total random.

Ryan: Random, Ok. I’m assuming from what I saw: were you playing against NPC’s completely? There was no PVP?

D: Yes, there was no PVP. I checked the winterspring because I do like to do winterspring, but it was... it would have taken two hours, so... But, I do like PVP quite a bit also....

Ryan: But you were just against NPCs right now?

D: Yes.

Ryan: How would you say that your skills matched the challenges you were facing?

D: I think they were adequate. I don’t think they were, you know, I’m no Warcraft god or anything like that. I consider myself a casual player, so I think they were adequate to the tasks.

Ryan: Ok. And were you satisfied, in general, with how you were doing?

D: Yes, yes.

Ryan: And why was what you were doing particularly satisfying?

D: Well, on my 80 character, I’ve spent quite a bit of time on him, so I think he’s... he was geared up enough to more than take care of the DPS that he needed to when the time came. My warrior I’ve switched to protection from arms and it’s amazing, actually, how much DPS they can do. Plus I’ve got heirlooms on him, so leveling is like five times faster than it was when the game first started. The game’s changed so much.

Ryan: Were you very concentrated on what you were doing?

D: Yes, I’d say so.

Ryan: And why, I mean what led to that concentration?
D: Uh, just immersion in the game. Your wide screen, for one thing. I mean, the bigger the screen, to me, it’s almost you become more immersed in it. And outside things... Plus the sound, you know... A lot of times I don't play with sound up real high, but, uh just immersion.

Ryan: Were you comfortable while playing here?

D: It was a little hot at times, but yeah.

Ryan: How much do you think your comfort level affects the gameplay experience?

D: Well, I think it totally affects it. I mean, if you're not comfortable playing the game, then... The whole point of the game is to have fun. So, the enjoyment experience is going to go downhill if you're not comfortable.

Ryan: But your discomfort here, did that really...um...

D: No, minimal.

Ryan: Would you say when I came in that you were really into the game?

D: No. I knew it had been about an hour, so I was kind of wrapping it up.

Ryan: Were there other moments while you were playing that you would say you were really into the game?

D: Yes, yes.

Ryan: What moments? What were you doing?

D: Anytime I'm in a dungeon I try to be into the game because I know there are others are relying on my actions, also. So, if things are going around, I try to shut them out. And its fairly easy to do in that game, anyway. Because, like I said before, immersion.

Ryan: So kind of the difference between, say, when you’re in a dungeon and you know, just at the end there, when you were questing and you were kind of tired. What would you say the difference is?

D: It's more of a casual feeling when you are out by yourself just questing. You know that there’s no consequences really to your character or anybody else’s character because you can just quit. You know, quit all of the sudden. Since it’s real time, you know, you want to report back to your main home to get additional XP or whatever. But, there’s no real need to as opposed to if you’re in a dungeon, then others will rely on you.
You know, to me that means something I don’t want to just, you know, dump ‘em or whatever.

Ryan: So, would you say that how into the game you were kind of varies while you’re playing?

D: Yes.

Ryan: And was that variance... Is that something you usually experience or something... Are there times when you are into the game throughout the play or does it always vary throughout a play session?

D: It varies depending on what is going on around me. It depends on if I’m at home. I’ve got kids, I’ve got a family, so, they may pop in and I’ll stop the play or they may be saying something and I’m concentrating on them and I’m not concentrating on the game, so...

Ryan: So, it usually varies?

D: Yes, it varies.

Ryan: I know I’ve been using the term, “into the game”, and that’s kind of a subjective term. What does that it mean to you? What does it feel like to you when you are really into the game?

D: Uhmm, everything else is kind of shut out. You don’t really realize what’s going on around you. Hours can pass and you have no clue that time has flown by.
Appendix 7

Transcript for Participant E

Ryan: To start out with, what were you just doing in the game?

E: Just then?

Ryan: Yes, just then, or you can give a summary if you want.

E: Started out trying some quests out in an area and then umm... and then tried my hand at a little PVP.

Ryan: Alright, so you were just doing PVP?

E: Yeah.

Ryan: How did you feel when playing just now? Like what kind of mood were you in?

E: Umm... I guess jovial and slightly frustrated.

Ryan: Why?

E: Uh, Well, I guess once you get to the top end of things the spread is a little bit higher as far as equipment and I’m on the lower end and most of those guys are on the higher end, so I died quickly.

Ryan: Ok. Was it difficult for you to quit the game when I came in?

E: I wanted to finish the round.

Ryan: How important to you was the activity you were just doing?

E: Eh, I could take it or leave it.

Ryan: Ok. Why wasn’t it that important really?

E: Well, I mean there’s no greater goal behind it. It’s just a quick round, you know, in the game. There’s no... it doesn’t change anything within the game as far as storyline, or whatever.

Ryan: Ok. Was what you were doing important to others in the game?

E: Potentially. Some people really seemed to, you know, want to be, number one but I don’t care!
Ryan: Alright, so, there were others with you while you were playing?

E: ::affirmative nod:: uh-huh

Ryan: And were you communicating with them via the chat?

E: No.

Ryan: Are these people you often play or communicate with?

E: No, not that time.

Ryan: No one you recognized on there?

E: ::shakes head no::

Ryan: And so, when you were playing just now was it mostly NPCs except for that last one or were there other PVP?

E: Uh, initially I was playing just with NPCs and then when I started PVP, it was nothing but other people.

Ryan: But when you were playing earlier before the PVP you were also playing solo?

E: Yeah, I was.

Ryan: How would you say your skills matched the challenges you were facing the game?

E: The PVP, or PVE rather, the NPC’s are... I mean it’s pretty much a cakewalk. They want it to be easy, so you enjoy yourself, I guess. So it’s not really a challenge... It’s just go out, bring your 10 things back, go out do it again and here’s your gloves.

Ryan: What about the PVP?

E: That... it’s a lot harder verses people. Skills, and I guess different classes work on each other differently.

Ryan: So, do you find ways, since you said the PVE wasn’t really challenging, do you find ways to challenge yourself more, either by doing PVP to challenge yourself or doing other things to challenge yourself when you play?

E: I mean, yeah, I like to PVP occasionally. That’s definitely where more of the challenge comes through. I mean, if it’s PVE I’ll try to, you know, take on as many as possible or do stuff like that just to sort of liven things up.
Ryan: Ok. Um, were you satisfied with how you were doing in the end?

E: At the end? No.

Ryan: What about the other times?

E: Yeah, the rest was fine. It was pretty straightforward and fairly easy, I’d say.

Ryan: What made those parts more satisfying than the last part? Other than... Was it just the difficulty level or the gear that other people had?

E: Um...Gear comes into it. Its just... I’m sorry. Can you repeat the question?

Ryan: Yeah, you said you enjoyed yourself earlier, but you know, you weren’t very satisfied with how you were doing with the last part. What made the first part so enjoyable then?

E: I mean, it was just something to do, something to kill time. You just go on and do it. You know what you’re supposed to do and you didn’t have, you know, I guess, ten 13 year olds whooping your ass.

Ryan: Were you very concentrated on what you were doing while you were playing?

E: I’d say I was pretty focused.

Ryan: And why? What led to that focus?

E: Um, towards the end you, you know, everything is based on how long it takes to do, I mean, with my class particularly, it takes this many seconds to cast a spell, and then you move and wait on a cool down. So, you know, every second counts.

Ryan: Were you comfortable while playing here?

E: Yeah.

Ryan: How much do you think that comfort level overall affects the game play experience for you?

E: Um, it can definitely lead to distraction. And for PVP that might potentialy lead to you getting killed more often than you might like or might cause you to become frustrated with something faster, you play less often.

Ryan: Would you say you were really into the game just now when I came in?

E: Uh, yeah.
Ryan: And were there other moments while you playing here where you got into the game?

E: Um, it was less so with the NPCs.

Ryan: Ok so you were more into the game with...

E: Yeah, because I mean, with NPCs it’s, you know, if you stop and you look for a second you can tell what their pattern is and you know what they’re going to do when they come after you. It’s...you know.

Ryan: Ok, so that takes you out of the game? That’s the difference between the two?

E: Yeah. You don’t have to go to town as much, you can sort of multi-task and do something else at the same time if you want.

Ryan: Ok. So it kind of varied while you were playing, how into the game you were?

E: I’d say so.

Ryan: Um, is that kind of usual? That it goes in and out?

E: Yeah. I mean, with an MMO like this, you know, it’s... you can spend a ton of time focused on it but you know, it can vary I guess.

Ryan: So, I use the term “really into the game,” but it’s kind of a subjective term. So how would you define being “really into the game”? How would you define that state?

E: I say its when my girlfriend was behind me talking to me and I turn around and went “Huh?” She would say I was really into the game. So, whatever she said just went in one ear and out the other. Yes, dear.

Ryan: Ok, so, when your concentration on what’s around you kind of fades?

E: I’m pretty much focused on the screen and what’s happening... the rest of the world goes by without your focus.
Curriculum Vitae

Ryan Clark Thames

RESEARCH INTERESTS

- Video Game Studies
- Rhetoric of Interactive Texts
- Interaction Patterns in Online Forums
- Multi-modal Online Relationships
- Communicative Potentials of New Technologies

EDUCATION

- M.A. in Communication, Wake Forest University, 2010
  - Thesis Title: Encountering *World of Warcraft* as Text: Messages and Flow in Massively Multiplayer Online Games
  - Overall GPA: 3.9

- B.A. in Anthropology/Sociology, Rhodes College, 2006
- B.A. in English Writing, Rhodes College, 2006
  - Overall GPA: 3.6

TEACHING EXPERIENCE

- Teaching Assistant, Public Speaking, Wake Forest University, 2008-2010
  - Taught two lab sections, each two days a week
  - Assigned and evaluated student speeches
  - Assisted senior professor with assigning final grades and course planning

AWARDS

- Graduate Assistantship, Wake Forest University, 2008-2010

PAPERS/PROJECTS

- Joint paper with Dr. Michael Hazen and Zixuan Zhou: “The Role of Moderators in Online Forums” (Not Yet Submitted for Publication)

AFFILIATIONS

- Member of the Association of Internet Researchers