# Game Presence and Literacy: A Methodology Refined

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**Abstract:** We present the newest and most rigorous iteration of a game-play methodology that analyzes the focus of MMO game players for *information flow*, *physical self*, and the virtual *game world*. In examining the three (emergent) threads of what we are naming *presence*, we are able to provide a coherent account of game play that does not fall prey to the false dichotomy of "real" and "virtual." We will share the results from our research, and provide detailed methodological information so that others can learn and adapt our process to their needs.

## Introduction

There is a growing body of research on massively multiplayer online games (MMOs) or virtual worlds as literacy (Gee, 2003; Steinkuehler, 2007; Black & Steinkuehler, 2009) with compelling evidence suggesting that such sociotechnical environments foster sophisticated intellectual practices across a variety of domains, including science literacy (Steinkuehler & Duncan, 2009), advanced reading comprehension (Steinkuehler, Compton-Lilly, & King, 2010), and information literacy (Martin & Steinkuehler, in press). However, research to date focuses on the distinction of "online" and "offline," "virtual" and "real," and does not explore the experience as a whole, as Leander calls for (2003). Contemporary literacy research recognizes that time and space are experienced in interconnected ways and that these concepts are entwined and ensnared with literacy practices. Gaming as a literacy practice is no exception. While time and the experience of time in games have been studied by a handful of researchers (Chen, 2007; Juul, 2004; Myers, 1992), we have no theoretical model of gaming as literacy in terms of space and time. How might gaming as a virtual literacy be reconceptualized in ways that provide a more complete account of actual practice, taking both time and space into account?

Capturing the many activities that take place in the game play of a person in a massively multiplayer online (MMO) game is complex, and yet an incredibly important task for scholars who wish to deeply examine their actions and interactions. Over the past three years (and counting), we have gathered ethnographic data (participant observation, multimodal fieldnotes, interviews with informants) and exploratory assessment data (reading assessments of both gaming artifacts and individual gamers) in order to better understand the ways in which gaming is caught up in a complex web of myriad forms of semiotic work. These data have focused primarily on the massively-multiplayer online game (MMO) *World of Warcraft* (WoW), selected given its singular success on the computer gaming market, and have included both adolescent and adult participants at varying stages of expertise. Based upon this experience, we have developed a new method that captures both the literacy practices and what we have called the *presence* or *focus* of the player. This *presence* involves the three interwoven spaces of the *virtual game*, *physical body*, and *information flow* or access.

## Background and Theory

In previous reports (Martin et al., 2011; Martin et al., in press; Williams & Martin, 2011a; Williams & Martin, 2011b), we have shared our budding methodology for visualizing the presence of the player, and how it serves to pinpoint the actions of the player across different areas, allowing for the tracing of resources used and a fuller description of the information literacy practices required to be an expert player. This paper outlines previous iterations and extends the methodology.

Researchers have consistently had difficulties with understanding the engagement of MMO players, particularly because of the persistent tradition of an offline/online division. We have taken a different tack altogether, characterizing players as shifting in *focus* rather than *self*. In this paper, based on this data corpus, we reconceptualize MMOs as a literacy space, and gaming as traversal through that space. We describe our theoretical framework in three parts. First, we divide the topology of MMO engagement as three major threads: the player-personalized flow of information (such as wikis, guild websites, verbal communication via voice-over IP resources, and user interface modifications); the physical space and body-based interactions or needs (such as interacting with others in the same geo-location, or taking a break to prepare a meal); and the real-time present (albeit digitally mediated) interactions in the virtual space itself (with other players, such as raiding or arena battles; or with the

game itself, such as through battling monsters or using the in-game calendar). With this theoretical conceptualization in place, we then characterize gameplay as traversal of this literacy space, movement in which the "game" acts not as content but as impetus, agent or driving force by creating moment-to-moment content deficits for the player that motivate "reading" and, ultimately by end-game state, "writing." Under these terms, a player's location of focus is the primary context that determines traversal of the literacy space, prompting us to question the distinctions we typically draw between the global and the local, contextualized versus decontextualized text, and concrete versus abstract.

A powerful influence on the development of our methodology was Gell's (1992) characterization of time. Gell posited two different types of time: A-series time is time as measured by a clock; and B-series time is based upon the natural punctuation or rhythm produced by and with the activity. Gamers live in a hybrid space where both A-series time and B-series time are important and must be attended to (Martin, in progress). For example, a WoW player attends to B-series time by following the pattern of gameplay: fighting when there are enemies to fight, and stopping fighting when the enemies are dead or gone. On the other hand, the player must also attend to A-series time to make it to dinner, work, or school on time.

## Methodology

We outline our previous iterations of methodology, and then discuss our current data collection and planned analysis.

Through our initial data collection and analysis, we found three loci of *presence*: *information flow*; *physical self*; and the game itself (labeled in Figure 1 as *WoW avatar/self*). We coded anything as *information flow* that involved seeking or modifying information: for example, customizing a user-interface (UI) so that the default information received from WoW is changed would be considering *modifying information*. Another frequent example of *information flow* involves the player going online to seek out tips from other players on game-related websites. We used the code *physical self* whenever an activity occurred that drew the player's focus from the game to the physical realm: the jumping of a cat in front of the screen, or perhaps a bathroom break. Finally, we coded *WoW avatar/self* to account for the in-game activities taking place. By coding and annotating these three themes of presence, a holistic account of gameplay is reached.

As reported elsewhere (Martin et al., 2011; Martin et al., in press; Williams & Martin, 2011a; Williams & Martin, 2011b), the analysis method originated with the collection of data through observation while each participant is engaged in game play. The researcher took detailed notes of where the presence of the participant is most focused, as evidenced through their various activities and levels of engagement. For example, our primary subject is Jais, an expert player in WoW who belongs to a top-ranked raiding guild server-side and internationally. Jais tends to be primarily focused in the game when he's actively participating in a raid; however, different types of participation in WoW often result in different distributions of focus. For example, if he's working on his professions, Jais frequently consults online information resources in order to maximize his profession-leveling efficiency, and also often has television on in the background. His presence then is distributed more heavily into the physical presence and information access channels, and only minimally in the WoW virtual space. Our analysis resulted in presence visualizations (sample given in Figure 1; note the B-series and A-series time stamps in the top row).

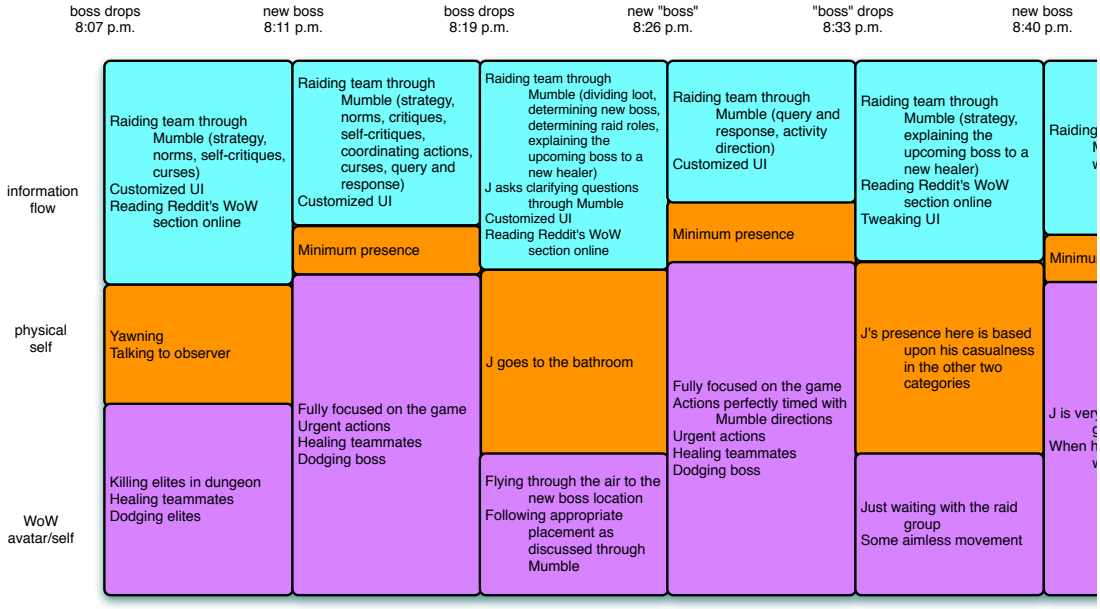


***Figure 1*: Sample of a Presence Visualization.**

Each presence visualization tracks Jais' focus of the three different distinctions. Note, however, that although our prior method of collecting data (through field notes) served its purpose for the initial stage of development, the clear next step in the refinement of our presence examination requires more precise data. To that end, we are collecting additional expert WoW player data this spring, using the technology of Silverback (http://silverbackapp.com/index.php) to capture both the game screen and the participant's face, as well as a video camera focused on the participant and his surrounding area. Transcription of this rich data will be conducted with Transana (transana.org), a qualitative analysis software that permits simultaneous viewing of both the Silverback-produced video and the video camera data. It will necessarily include time stamps of the participant's general eye-gaze, so that we can more accurately operationalize focus (keeping in mind, of course, that eye gaze does not account for everything, such as audio information exchanges and frequency of digital movement as measured through keyboard engagement rates). Our analysis will include a more rigorous account of presence, by examining details that are not as clearly captured in field notes.

Given that our results will not be available in time to be included in the proceedings, we will post our presentation online following the conference so that our full results are easily available.

## Conclusion

We hope to contribute to the conference conversation by offering a new and rigorous methodology. Basing it upon our prior methodological design work (Williams & Martin, 2011a; Martin et. al., 2011; Martin et al., in press) and upon our engagement with an extended data corpus culled from MMOs, we provide a way to examine video game play with new conceptualizations of space and time that do not fall prey to false but attractively simple binaries like "virtual" and "real." Our full presentation on the most recent iteration of this methodology, once completed, will be posted at http://therealca.ro/GLSpresence.html.

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# Information literacy and online reading comprehension in *WoW* and school

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**Abstract:** Massively multiplayer online games and affinity spaces offer a vast array of literacy practices and reciprocal apprenticeship (Gee, 2003; Steinkuehler, 2007; Black & Steinkuehler, 2009; Black, 2008). Many of these literacy and learning practices are well researched (Steinkuehler, 2011), however, the practices of online reading comprehension and information literacy processes are nascent in terms of research. This study was originally designed to compare the online reading comprehension skills used in schools and games; however, this analysis proved to be unfruitful because both tasks were imposed query (Gross, 1995; 1999). This data set does give us an interesting opportunity to compare two coding schemes that both look at how people find and use information.

## Introduction

Literacy learning is a naturally occurring and pervasive part of massively multiplayer online games (MMO) and affinity spaces (Gee, 2003; Steinkuehler, 2007; Black & Steinkuehler, 2009; Black, 2008). Sophisticated practices using science literacy (Steinkuehler & Duncan, 2009) and advanced reading comprehension (Steinkuehler, Compton-Lilly, & King, 2009) have been documented in online discussion forums and fandom texts related to MMOs outside the context of school and other traditional learning spaces. These communities function as participatory cultures (Jenkins, 2006), with community members both producing and consuming information in equal turn. The production and consumption cycles of participants are collaborative and leverage the intellectual resources of the community in a way similar to that described by Levy's (1997) theory of collective intelligence. These communities in and around MMOs also function as communities of practice as described by Lave and Wenger (1991); they offer information to members and use apprenticing to help new members learn the standards and practices valued within the community (Steinkuehler, 2004). The collective intelligence and communities of practice aspects of these communities are seen not only in written documentation of the community of an MMO or affinity space like a wiki, but also in in-game chat. The information needs of the individual seeking information in this setting require both the collective intelligence of the community to give the individual not only an answer but to give the correct answer, as well as be willing to apprentice novices, which is a core value of communities of practice.

## Theoretical Framework

### Online Reading Comprehension

The study of how people read and comprehend online reading materials, online reading comprehension is considered to be a part of literacy studies. Leu, et al., (2001) viewed online reading comprehension through the lens of new literacies, framing it as problem-based inquiry which requires the person implementing online reading comprehension to have new skills, strategies, and dispositions on the Internet. These new skills, strategies, and dispositions allowed the user to create questions that were driven by interests and information needs that occurred while reading. The reader then needs to locate, critically evaluate, synthesize, and design and communicate possible solutions to these questions. Leu and Zawilinski (2007) reaffirmed the list of skills needed for online reading comprehension by determining there were five major functions of online reading comprehension: 1) developing important questions, 2) locating information, 3) critically analyzing information, 4) synthesizing information, 5) communicating information. The functions of online reading comprehension show strong similarities to information literacy; these similarities are explored below.

The differences between studying reading comprehension of print-based media and digital media were laid out by Coiro (2009). First, students needed a new and different skill set to successfully read online. These included creating search terms, sifting through sources, making evaluative choices, synthesizing the chosen sources, and responding through digital communication. The second difference focused on the disposition of the student toward the Internet, with high performing readers

displaying persistence, flexibility, and skepticism. The third difference between digital and print reading was that students often looked for information in a collaborative way on the Internet; they work together in-room, use synchronous online communications methods like gchat, and utilize asynchronous online communications like forums, or collaborative sources like wikis. The fourth difference was that the process of reading should inform the instruction of reading. Coiro found that many struggling students only accessed the top link of a page of search results; often gave up if they could not find information easily; retyped URLs because they were unaware of copy and paste; and typed whole questions into the address bar and added .com at the end. The fifth difference was that the nature of online reading comprehension was constantly changing as digital tools change. The argument being made here is that online reading comprehension is different than traditional reading comprehension. Online reading comprehension requires the ability to read in a format that may not be linear; links within in the text may be explored at any time moving the person away from a straightforward and linear path. Coiro studied participants reading non-fiction and reference materials. The ability to switch to a related subject highlighted by a link is just one of the ways that reading online is a more fluid and complicated, process.

### Information Literacy

Traditional information literacy theories and standards are designed to describe the practices of information literacy in formal learning environments like K-12 or college (AASL, 1998; ACRL, 2000). Many traditional models are unable to account for some of the most basic practices in online affinity spaces, such as *World of Warcraft* (*WoW*). These spaces have little in common with traditional resource-heavy spaces. The traditional models focus on formal educational settings using institutionally created information resources utilized by a single person on a solitary journey, with the output of their search usually ending in a paper. The online affinity space is collaborative and the resources vary from institutionally created (resources published by the game companies) to a variety of user-created resources such as leveling guides, guild websites, and wikis. Because so many of the resources are user-created, the nature of the resources is constantly shifting, with the information they present constantly in flux. Thus, we need a more contemporary framework for information literacy skills that can better account for the collaborative nature of communities like those found in the information constellation around *WoW*.

Information literacy is more than just a skill set. It requires reasoning and critical thinking skills for determining which sources and information best fill the need at hand. It requires both ICT (Information, Communications, and Technology) skills and critical thinking because it encompasses both. Using examples culled from eight months of online ethnographic data (Steinkuehler & King, 2009), Martin and Steinkuehler (2010) have examined the information literacy practices that arise in the in-game chat of *WoW*. The information literacy practices observed in analysis take the form of five patterns. These patterns were identified and described in Martin and Steinkuehler (2010) as “call and response”, “call and refer”, “call and avalanche”, “simultaneous not sequential”, and “fluid”. These new patterns utilize the existing descriptions of the process of information literacy but crucially illustrate the actual actions and practices of people in natural information seeking spaces.

## Methods

This study was designed to replicate and build on a study conducted by Coiro and Dobler (2007). Their original study followed 11 successful 6$^{th}$ grade readers of mixed gender as they completed two tasks of online reading comprehension. The first task required participants to use a website about tigers to find information and determine answers for a set of seven comprehension questions. The second activity was structured similarly except that the students were able to use the website Yahoolagains!. During both activities the participants were asked to think aloud about their process. From the data collected, Coiro and Dobler coded the transcribed think-alouds to determine the practices that readers with a high reading ability in traditional reading settings use in online reading situations. We conducted a modified version of the study. The study took place in part of an afterschool lab for adolescent males, 13-18 years old and mostly from rural areas, conducted at University of Wisconsin-Madison. The lab ran for two years with a pilot in 2008 that had 9 participants and the full lab running in 2009 with a total of 22 participants. Most participants were considered chronically disengaged with school and were identified as struggling readers. The lab met face-to-face once per month and regularly online in *WoW*. A modified version of the original Coiro and Dobler study was conducted during a Saturday face-to-face meeting. The main modification to the study was that a reading in the form of a wiki pertaining to *WoW* was substituted for the Yahoolagains! portion of the original study. One activity, referred to as “Tigers” for our research, used the Save the Tiger Fund

website; this is the same website that Coiro and Dobler used in their original study, which at the time was called 5 Tigers: The Tiger Information Center. The second activity, which we refer to as "Murlocs", used the Murloc WoWWiki.com page. WoWWiki.com is a wiki similar to Wikipedia, but dedicated entirely to articles about *WoW*. This site was used in conjunction with the website Save the Murlocs.

Both activities, Tigers and Murlocs, included worksheets that asked seven comprehension questions: five content questions and two inferential questions. The participants were asked about their levels of prior knowledge and interest in the topic before each activity, and about their enjoyment of and success with the activity after they had completed it. These activities required the participants to use the designated websites to answer the questions while thinking aloud to explain their actions and decision-making. The think-alouds were videotaped, transcribed.

## Analysis & Results

The data analyzed in this study was a combination of the results from the worksheets from the Tigers and Murlocs activity as well as analysis of the think-alouds. The think-alouds were analyzed using two a priori coding schemes, Coiro and Dobler's (2007) coding scheme and Information Literacy.

Analysis of the worksheets rendered the information in Table 1. While prior knowledge for the Tigers and Murlocs activities had a mean of less than three, which on a five-point scale is less than 50%, both mean comprehension scores were over 70%. Thus, although prior knowledge was low, participants were still able to find correct information with reasonable success.

| **Reading Tasks** | **Response** | |
|---|---|---|
| | Mean | Range |
| Prior knowledge about tigers [a] | 2.2* | 1-3.5 |
| Interest in Tigers [a] | 2.63* | 1-4 |
| Enjoy Tigers task [a] | 2.6* | 1-3 |
| Success at Tigers task [a] | 3.267* | 1-5 |
| Comprehension questions answered correctly [b] | 4.967* | 1.25-7 |
| Prior knowledge about Murlocs [a] | 2.5* | 1-4 |
| Interest in Murlocs task [a] | 2.63* | 1-5 |
| Enjoy Murlocs task [a] | 2.99** | 1-4 |
| Success at Murlocs task [a] | 3.89** | 1-5 |
| Comprehension questions answered correctly [b] | 5.183* | 3-7 |
| *N=15 **N=14<br>[a] Participants chose rank on a scale of 1-5, with 5 being the highest<br>[b] Total correct out of 7 questions; participants many not have completed all questions | | |

***Table 1*: Screenshot of WoWWiki Murlocs Website.**

Average scores across all measures were slightly higher for the games-related reading, but not high enough to be statistically significant. In Table 2, a sample of the participants' most recent grade in English is compared to their success on the worksheets. Participants' strategies for finding information and comprehending online texts were of central interest to our design.

| Participants* | Grade Level | Grade in English | Tigers Score | Murlocs Score |
|---|---|---|---|---|
| Jamie | 11 | A | 71% | 86% |
| Wes | 12 | A | 100% | 100% |
| Nicholas | 11 | B | 86% | 71% |
| Neil | 8 | F | 57% | 71% |
| Alex | 7 | B | 89% | 86% |
| Patrick | 9 | B | 71% | 86% |
| Jay | 7 | C | 71% | 46% |
| Jesse | 10 | A | 79% | 86% |

| | | | | |
|---|---|---|---|---|
| Derrick | 9 | D | 18% | 61% |
| Noel | 10 | A | 79% | 86% |
| Brandon | 11 | C | 71% | 75% |
| Todd | 8 | A | 86% | 100% |
| Christian | 7 | A | 79% | 57% |
| Zach | 7 | B | 71% | 57% |
| Connor | 12 | C | 43% | 43% |
| *Pseudonyms have been applied for this paper | | | | |

***Table 2*: Comparison of participants' last grade in English to succeed on worksheets.**

## Online Reading Comprehension

A coding scheme, similar to Coiro and Dobler (2007) (see Figure 1), was structurally altered from the original scheme in two ways: (1) a code to track when participants were critiquing the activity, and (2) a code to track mouse movement. The code for Prior Knowledge Search Engines was removed due to the fact that the study had been modified to exclude search engine activity.

| Coiro Dobler Coding Scheme | |
|---|---|
| **Category** | **Definition/examples** |
| **Inferential Questions** | |
| Inferential prediction (IP) | Makes, confirms, or adjusts a substantiated guess about what will come next, usually prior on clicking a particular link |
| Inferential prediction informed by literal matching (IP - LM) | Uses the words in the search question and seeks similar words within the hypertext to inform prediction about where information might be found |
| Inferential prediction informed by structural cues (IP-SC) | Makes connections between the way the website is organized and the type of information needed to inform prediction of where information might be |
| context cues by context cues (IP-CC) | Makes use of the descriptions, icons, graphics, and headings to inform prediction about where information might be found |
| Inferential prediction informed by anticipations across multiple levels(IP- ML) | Makes use of understanding that information may be "hidden" beneath several layers of links on a website to inform prediction about where information might be found |
| **Prior Knowledge** | |
| Prior Knowledge of the topic (PK-T) | Relies on domain specific knowledge and key vocabulary to inform reading choices |
| Prior knowledge of informational text structures (PK-ITS) | Uses knowledge about the ways informational text is organized on a website (e.g. titles, headings, description, captions) to inform reading choices |
| Prior knowledge of informational websites (PK-IW) | Uses ability to recognize and negotiate hyperlinks, navigational icons, interactive multimedia, and browser toolbars to inform reading choices |
| Prior knowledge of search engines (PK-SE) | Draws from experiences with the processes of browsing, selecting appropriate search engines, formulating keyword searches, negotiating subject hierarchies, and evaluating annotated search results to inform reading choices |
| Prior knowledge of website structure (PK-WS) | Uses ability to recognize the general structure of specific websites to inform reading choices |
| **Self-regulation** | |
| Self-regulation: Plan (SR-PL) | Thinks about multiple choices, sets a purpose, and prepares a plan of action that addresses questions such as: What do I need to find out? Where should I begin? Where do I want to go? What do I need to do first? |
| Self-regulation: Predict (SR-PR) | Makes, confirms, or adjusts a substantiated guess about what will come next, usually prior to clicking on a particular link |
| Self-regulation: Monitor (SR-MN) | Having selected a link with an anticipated result, the reader monitors the choice that has been made |
| Self-regulation: Evaluate (SR-ER) | Actively evaluates the relevance of a particular reading choice while considering: Does this choice bring me closer or further away from my goal? Is this a likely and appropriate place for the information I need? Should I move to a deeper level, select a related topic, revert back to an earlier location, or start all over again? |
| **Actions** | |
| Physical reading action: Keyword (PRA-K) | Employs physical reading actions using a mouse or keyboard to navigate Internet text - types in keyword or phrase; types in website address |
| Physical reading action: Click (PRA-C) | Employs physical reading actions using a mouse or keyboard to navigate Internet text - clicks search button; clicks back button; clicks hyperlink |
| Phsysical reading action: Mousing (PRA-M) | Employs physical reading actions using a mouse or keyboard to navigate Internet text - moves mouse over text, across the screen, or under text |
| Physical reading action: Scroll (PRA-Sl) | Employs physical reading actions using a mouse or keyboard to navigate Internet text - scrolls up, down, or across the page |
| Answer | States the answer to a given question |
| Writing | Writes notes or answers |

***Figure 1*: ORC Coding Scheme.**

Analysis of the coded transcripts (see Figure 2) revealed that the practices used by the participants for school and games websites are strikingly similar. An example of the practices demonstrated in the think-alouds would be a turn of talk like that of Wes, who said, "There is a thing at the top that uh…WoWWiki usually had sound clips and it's pretty, it's something like this. [clicks on a link and plays the sound file]." This demonstrates Wes's familiarity with WoWWiki as an informational website, which demonstrates his prior knowledge of informational websites. Similar examples can be found in the school examples.

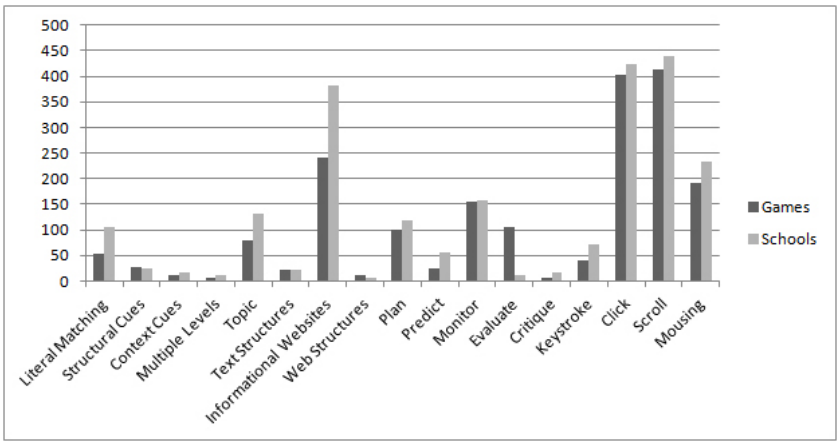


***Figure 2*: Graph of Online Reading Comprehension code occurrences for data set.**

## Information Literacy

An a priori coding scheme for information literacy (Martin, in progress), expanded the five-step process of information literacy (AASL, 1998; ACRL, 2000), was applied to the data (see Figure 3). More variability was added to original five factors in order to look at the minutia of information seeking, such as breaking information seeking into two subcategories of recognizing information need and determining the extent of information need.

| Information Literacy Coding Scheme | |
|---|---|
| **Code** | **Definition** |
| Recognize Information Need | To recognize needed information for a particular problem |
| Identify Information Needed | To identity information and resources that are necessary to fulfill the information need |
| Construct Strategy | To construct a strategy in order to locate and access needed information to fulfill the information need |
| Determine Extent of Information Need | To determine the extent of information needed to fulfill the information need |
| Disseminate Information | To disseminate information to others who have an information need or as a way of sharing results of the information literacy process |
| Organize Information | To organize retrieved resources and information for later use |
| Evaluate Information and Source | To evaluate information both for its applicability to fulfill the information need and the reliability of the source itself |
| Access Needed Information | To access needed information |
| Construct New Concepts | To apply prior and new information to construct new concepts or understanding |
| Use Information | To use information to fulfill the information need |

***Figure 3*: Information Literacy coding scheme.**

Preliminary analysis of the coded transcripts reinforced our findings that the information seeking practices within both game and school based texts are similar (see Figure 4). Further analysis can examine the correlations between codes and the participants' success in the activity.

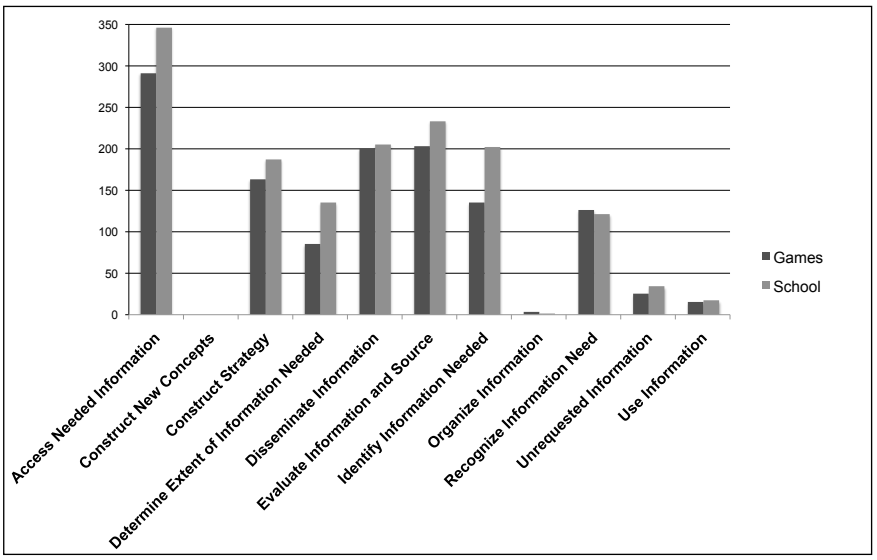


***Figure 4*: Graph of Information Literacy code occurrences.**

## Conclusions & Discussion

This study offers a look at the comparison between how people find different types of information from online resources and the types of online reading comprehension skills and information literacy practices that they employ, both for a more traditional informational, school-like topic such as tigers, and a more contemporary, games-related informational topic like murlocs in the *WoW* universe. One explanation for the similar approaches between school and leisure contexts could be that the tasks we have given them were essentially imposed queries. An imposed query is a question given to someone else to transact or resolve (Gross, 1995; 1999), as opposed to a self-generated query in which the information seeker has recognized an information need and has created the question they are seeking an answer for themselves. A major issue with imposed queries is that the person asking does not have context for the question; even if the context is explained to the person, it is not the same as having developed the need and then generating the question autonomously. Therefore, imposed information seeking is externally motivated and the questions are appointed or assigned (Gross, 1998). Self-generated information seeking is spawned by interest, the recognition of a need for information, and then the development of a question to fulfill the information need.

The imposed query prevented us from allowing the participants to make determinations about whether a site was credible and a sensible choice for the assigned questions. Instead, the text was selected for them, much like textbooks are selected by school boards and states rather than the students themselves. The constraints that this activity put on the natural information literacy processes of the participants was made apparent through their critique and push back on the rules that were designated for them. For example, one participant when asked to find answers to the questions on the worksheet told the interviewer, “That’s what Google’s for. Not this website.” Another said, “I'm tempted to almost just search on wowwiki ‘oracles.’ Can I do that? (clicks back space and then scrolls down) Or is that not allowed?” this was in regards to a question that many participants had trouble finding, partly due to the wording of the question. A third said, “Am I allowed to just go on Google and search for a sample of Murloc?” These three examples illustrate how the activity affects the participants’ natural online reading comprehension patterns, namely the approach they would use if they were looking for information on their own.

The critique given by the participants underlines how imposed query affects the online reading comprehension habits of an individual. Limiting the resources that are available to a person solving pre-structured problems changes the way they approach the problem, limiting their problem-solving abilities and online reading comprehension practices, just as seen in the imposed query research mentioned previously (Gross, 1995, 1998, 1999). Steinkuehler (2011) observed a similar phenomena in a study where she asked her participants to read texts that were at their grade level. In the first run of the study, participants performed nearly identically on a reading task with both a games and school-based text. In the second run of the study, participants selected their own game text, resulting

in marked improvement over their "school designated" reading level. The study demonstrates that students are able to read at a much higher reading level when choice and interest come in to play.

With the issue of imposed query creating similar results with the game and school activities and eliciting similar strategies in the coding schemes, we find that continuing analysis is needed. The analysis for this data set will continue using a finer grained analysis. This will look qualitatively at exactly what each participant did when they were successful in finding an answer and when they were unsuccessful in finding an answer. We will also look at the differences in practice that both the online reading comprehension and the information literacy schemes illustrate to create a comprehensive picture of seeking information in an imposed query context.

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