Avatars' Informational Preferences in a Virtual World

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Abstract: There is a growing interest among educators in exploring multi-user-virtual environments (MUVEs), such as Second Life, as platforms for distance learning and other applications. Additionally, such virtual environments provide rich opportunities for constructivist approaches to teaching and learning. Yet, the notion that virtual worlds also provide an opportunity for writing instructors to teach about multimodal texts and new media literacies is an area that has received less attention. This study examined the informational preferences of avatars (students) who were members of a class that met online in the virtual world of Second Life. Specifically, the purpose was to assess avatars' informational preferences from among three different media: print articles, machinima, and direct exploration within Second Life while enrolled in a course studying the virtual world of Second Life. Study found that avatars expressed a greater preference for information gathered from machinima and information gathered first-hand from Second Life than print-based information, although their subsequent discussions about the information varied in specificity, depending on the medium they were referencing.

Introduction

In recent years, new media researchers and practitioners have challenged the definition of traditional literacies in the academy while attempting to situate the act of "composing" in a much broader sense than alphabetic text alone. English and Communications departments have responded by offering courses and programs in digital media that invite students both to study and create these new media texts. Composition pedagogy has responded by fostering multimodal approaches to teaching first-year writing, challenging student writers to consider the affordances of images, sound, and video towards a broader understanding of text—(see, for example, Kress, 2003; Selfe, 2007; Wysocki, 2003) . Within this context, the explosion of Web 2.0 technologies (blogging, social networking sites, and peer-to-peer media sharing) has both enhanced and complicated writing instructors' understanding of the 21st century classroom (Lutkewitte, 2009; Middlebrook, 2010).

In the backdrop of this larger conversation has been a smaller, yet steadily-growing, interest in virtual worlds, 3-D immersive environments that users inhabit in the form of avatars. Some recent research has focused on game-based worlds as potential learning spaces (Abrams, 2009; Gee, 2007). However, less attention has been paid to non-gaming virtual worlds, spaces such as Active Worlds, Second Life, or OpenSim, user-generated worlds used by business, government, education, entertainment entities, and millions of avatar residents

While there is much interest in the popular media about the psycho-social aspects of living and working as an avatar in a virtual world, the academy has largely ignored these spaces as literacy events. Yet, many questions of pedagogy remain. For example, how do we define "literacy" in a 3-D, virtual environment? What sorts of skills will avatars need to communicate effectively within and about these virtual spaces? In what ways do student avatars function as readers and writers in a virtual world? This current study looked at one of these questions of virtual world literacy by examining the informational preferences of avatars (students) in a virtual world classroom.

Research on Virtual Worlds and Second Life

"Virtual world" is an umbrella term that can refer to a variety of different types, ranging from a MMORPG (massively multi-player role-playing game) such as World of Warcraft to a MUVE (massively multiuser virtual environment), such as Second Life. In both instances, users inhabit these spaces as avatars. However, the relevant distinction between these two is that the former has a pre-established structure or narrative to it (for example, completing a quest or mission) while the latter is totally controlled and created by the user.

The use of 3-D virtual worlds in education has increased in recent years (De Lucia, Francese, Passero, & Tortora, 2009; Michels, 2008). Virtual worlds present opportunities for distance learning, providing opportunities for real-time communication and collaboration (Kemp & Livingstone, 2006). A virtual world like Second Life also provides opportunities for constructivist learning, that is, the idea that knowledge is constructed by learners through negotiation and collaboration (Vygotsky, 1978). Additionally, Fogg (2003) demonstrated that there are affordances to using virtual reality as a mediational tool while Dickey (2003) and Dickey (2005) found that virtual worlds can support constructivist learning because avatars are able to interact with each other and collaborate within these spaces.

Perhaps the most striking difference between Second Life and other Web 2.0 tools for teaching and learning is that the former is an *immersive* virtual learning environment. Learners inhabit the environment as avatars. They become a "living" part of the world. Dede (2009, p. 66) argues that immersion can enhance the educational experience: "The

more a virtual immersive experience is based on design strategies that combine actional, symbolic, and sensory factors, the greater the participant's suspension of disbelief that she or he is "inside" a digitally enhanced setting." Similarly, Savin-Baden (2010, p.71) suggests that an immersive environment like Second Life "will lead to a sense of the user feeling 'in' or 'part of' a virtual environment as they interact with it and become absorbed or deeply involved." In a similar vein, Dean et al. (2009) suggest that users of Second Life adjust their identity to match that of their avatars.

The concept of immersion does raise some interesting questions in terms of how students are able to participate in a virtual world in ways not possible with other technologies. However, does such participation have some sort of effect on the learning environment? Some preliminary research in this area indicates that students find virtual worlds engaging and interesting (Cooper, 2007) and that scripted software in a virtual world does help students to learn (Holmes, 2007). Peterson (2006) found that non-native speakers in the virtual world of Active Worlds were able to effectively use features of that environment to successfully interact with each other.

While some research has studied Second Life as an effective vehicle for teaching simulations, role playing, and other activities, only a few research studies have looked at the types of literacy events that take place in Second Life. For example, Remley (2010) describes using Second Life for students to create machinima in a business writing class. The venture was successful insofar that students "developed a video product within a realistic situation and articulated their understanding of the affordances and constraints of using Second Life" (Remley, 2010). Similarly, Vie (2008) suggests that "Second Life can be used to address composition students' educational needs—including the development of complex, dynamic literacies coupled with critical and adaptive subjectivities." Second Life does provide the opportunity for writing instructors to expose students to multimodal composing and new media literacies, a direction that contemporary writing classrooms should consider, as studies in multimodal composition have suggested (see, for example, Selfe, 2004; Shipka, 2011; Wysocki, 2003). However, a virtual world like Second Life is still relatively unexplored in terms of being a *text* itself. In other words, little is known about how students, as avatars, function as readers and writers in this environment.

A Study of Students' Informational Preferences in Second Life

The purpose of this study was to examine the informational preferences of avatars (students) who were members of a class that met online in the virtual world of Second Life. Students in this course studied topics related to virtual worlds while simultaneously exploring, writing about, and communicating within Second Life. The topics covered included gender, business, education, writing/creative arts, among others. All materials for the course were housed at an inworld classroom (see Figure 1), created

specifically for the course. As students progressed throughout individual units of the course, they could select among three options for the course material: links to online print articles; machinima (video created inworld and related to course topics); and Slurls (links to actual locations in Second Life, to which the avatar could teleport, explore, and learn firsthand more about the topic under discussion). The three options represented three distinct ways of receiving and interacting with information: print-based information as a reader; machinima-based information as a viewer; direct exploration of the 3-D virtual world as an avatar. In practice, students had the opportunity to select all, some, or perhaps even none of the informational sources available as they progressed through the course.

The following research questions were considered:

1. Would avatars (students) demonstrate a preference for receiving information in print, machinima, or through direct inworld exploration?
2. Would these preferences change as avatars (students) became more familiar and experienced with the environment?
3. Would the content of online class conversations reflect references to material presented in text, machinima, or through direct inworld exploration?

Figure 1. Snapshot of inworld classroom.

Design

A quasi-experimental case-study approach was used. This case-study methodology is appropriate for smaller sample sizes and for research based on an analytic strategy that

leads to conclusions (Yin, 1994). The students participating in this study were 15 junior- and senior-level college students enrolled in the course. These six men and nine women reported no prior experience with using Second Life or a similar MUVE; four students reported previously having played a MMORPG, such as Call of Duty or Final Fantasy. Students' mean age was 25.2 (SD = 2.7).

Data was drawn from two sources: online discussion logs where avatars (students) engaged in a discussion of course materials and anonymous avatar journal entries.

Results presented here were gathered from the course throughout the semester after an initial two-week orientation unit that served to familiarize students with the basics of Second Life, such as avatar movement, becoming accustomed to the Second Life viewer, and other tasks. The length of the study was 13 weeks.

Data Collection and Analysis

In order to address the first research question, to determine if avatars expressed a preference for receiving information in either text, video, or direct inworld experience, everyone in the class was asked to keep an anonymous journal for each of the five units in the course, recording what they read, watched, or did in Second Life throughout the unit (that is, how many times they accessed each of the three areas, and how much time they spent doing so). To address research question 2, journal logs were further compared between the first unit and the last unit responses to assess if a change occurred throughout the course.

To determine if differences existed in terms of specific references made by avatars to the three different informational sources, the focus of research question 3, transcripts from the online course discussion board were downloaded and analyzed. Two independent raters analyzed the transcripts; inter-rater reliability was 88%.

Raters categorized the discussion comments as to their individual focus. A scale was devised to categorize the comments into the following areas of focus: *print-based*—the comment made reference to material from the articles presented in the unit; *machinima based*—the comment made specific reference to any of the videos presented in the unit; *SL-based*—the comment made specific reference to information gathered from direct exploration within Second Life; *non-specific*—the comment made a reference that could not be categorized in any of the above three categories.

Results and Discussion

Table 1 presents avatars' self-reported (through journal logs) informational preferences regarding type of informational source. As evidenced in the table, initially avatars, during the first unit, demonstrated a stronger preference (as reflected in their recorded instances of access) for receiving information by viewing machinima related to the topic (M = 6) over reading print material (M= 4) or through direct exploration in Second Life (M= 3). Not only did they access the machinima more frequently, they spent more time viewing it (M=2.4 hrs.) than they spent time reading print material (M= 1.5 hrs.) or being inworld (M= 1.9 hrs.). In addition to providing a quantitative record, journal log comments from unit 1 shed some light as to why avatars selected to read or watch information about

Second Life more frequently, rather than experience it directly. Some representative comments were:

> Avatar: I felt like I wanted to know more about SL before exploring it.
>
> Avatar: Watching the videos gave me a better sense of what I should be doing.
>
> Avatar: I was nervous about meeting other people in the game.

Not surprisingly, avatars initially were uncertain about exploring locations in Second Life because they seemed unfamiliar with what the virtual world had to offer them. This pattern quickly changed over time (the focus of research question 2), however, with avatars spending on average either near or slightly above half their time, both in number of times accessing and actual hours, in direct exploration of Second Life in the latter half of the course (units 3-5).

Unit 5 totals provide a striking example of this change. Here avatars reported accessing Second Life nine times more frequently than they did print materials (M= 18 versus M = 2). Additionally, avatars reported spending much more actual time in Second Life than they did reading print material (M=6.8 hrs. versus M=.3 hrs.). Throughout the course, machinima access and actual time spent viewing machinima remained fairly constant from unit 1 (M=6; M= 2.4 hrs.) to unit 5 (M=5; M= 1.7 hrs.). Journal log comments from unit 5 illustrate why avatars seemed to spend a consistent amount of time viewing machinima throughout the course:

> Avatar: The videos were useful because they more accuratly (sic) showed what SL is like, you could actually see it.
>
> Avatar: I liked the videos because they were actually filmed in SL.
>
> Avatar: It's one thing to read about it but when you actually see it you see what it looks like for real.

These comments suggest that avatars seemed to find the visual nature of the machinima experience more closely represented their inworld experiences; thus, they consistently looked to these sources for information. While machinima use remained constant, direct interaction within Second Life increased consistently throughout the course. Journal log comments here suggested that avatars began to see value in seeking out information directly from inworld experiences:

> Avatar: I've met some interesting people who really are passionate and know a lot about SL.
>
> Avatar: This [SL] helped me open up to using a different medium for learning.
>
> Avatar: Believe it or not their (sic) is lots to learn by roaming about.

Table 1. Avatars' informational preferences: Time spent reading, watching, or exploring inworld.

Source	Print-Based	Machinima-Based	SL-Based
Unit 1			
Times accessed			
Number =	60	90	45
Mean =	4	6	3
Standard Deviation=	2.1	1.4	.8
Hours spent using			
Number =	23	36	29
Mean =	1.5	2.4	1.9
Standard Deviation=	.6	.5	.5
Unit 2			
Times accessed			
Number =	45	105	90
Mean =	3	7	6
Standard Deviation=	.6	1.1	1.2
Hours spent using			
Number =	11	27	26
Mean =	.7	1.8	1.7
Standard Deviation=	.2	.3	.3
Unit 3			
Times accessed			
Number =	45	105	135
Mean =	3	7	9
Standard Deviation=	.3	1.3	1.8
Hours spent using			
Number =	14	26	47
Mean =	.9	1.7	3.1
Standard Deviation=	.2	.3	1 .3
Unit 4			
Times accessed			
Number =	30	120	210
Mean =	2	8	14
Standard Deviation=	.5	1.3	2.8
Hours spent using			
Number =	9	24	86
Mean =	.6	1.6	5.7
Standard Deviation=	.2	.4	2 .2
Unit 5			
Times accessed			
Number =	30	75	270
Mean =	2	5	18
Standard Deviation=	.4	1.2	3.3
Hours spent using			
Number =	5	26	102
Mean =	.3	1.7	6.8
Standard Deviation=	.2	.4	2 .3

As avatars became more familiar with resources and information available in Second Life, they were willing to spend time there to seek them out. As the course progressed, direct exploration as an avatar became, by far, the preferred method of seeking out information.

The focus of research question 3 was to determine what informational sources avatars referenced in their discussion comments throughout the course. Table 2 presents the results of that analysis, showing what percentage of comments were focused on the three informational sources available, as well as those comments that could not be categorized.

Table 2. Avatars' references to informational sources in class discussion.

Source	Print-Based	Machinima-Based	SL-Based	Non-Specific
Unit 1 % of comments	8%	32%	40%	20%
Unit 2 % of comments	5%	20%	48%	27%
Unit 3 % of comments	6%	25%	42%	17%
Unit 4 % of comments	4%	27%	49%	20%
Unit 5 % of comments	4%	21%	61%	14%

Consistently throughout the units, avatars made reference to information gathered from machinima resources and from direct exploration in Second Life. Avatars spent the least amount of time discussing information from print resources, even though in earlier units, they had spent a comparable amount of time reading print information as they had spent actively exploring inworld. Avatars spent almost as much time reading print sources in the first unit than they did exploring Second Life, yet their discussions spent more time talking about those inworld experiences.

Avatars' print-based comments, although fewer, typically focused on very specific references to points an author(s) made in a given article. For example:

> Avatar: She makes the point that more disabled people are using SL for networking.
>
> Avatar: I am surprised to learn that Harvard was one of the first schools [in SL].
>
> Avatar: I don't agree with the authors (sic) description of female avatars in general.

As characterized by these representative comments, when talking about print articles, avatars often made very textually-specific references to the material in their online

discussions. This approach contrasted with avatars' references to material gleaned from machinima resources. These comments were more general in nature, typically summarizing broad issues presented in the machinima. Representative examples were:

> Avatar: It seems like this place [SL] can be a fun and interesting way to role play and be somebody you're not in the real world.
>
> Avatar: I'm not sure I agree with people swapping genders. I don't think I would.
>
> Avatar: There seem to be a lot of businesses that try to do something, but some left, maybe because it was too much trouble or too expensive.

Unlike the print-based comments, the discussion comments concerning machinima-based resources generally seemed to be more "take away" impressions from the information, rather than specific references to ideas and information presented. So, while avatars discussed information viewed from machinima throughout the course in a consistent fashion, the depth here tended toward general commentary, in contrast to those comments coded as print-based. Thus, even though avatars relied upon machinima consistently as an informational source throughout the course, when referencing this material in discussions, they provided few specifics as to what they learned from these sources.

As further illustrated in table 2, avatars' discussion comments related to information they gathered through direct exploration of Second Life increased throughout the course (40% in unit 1 to 61% in unit 5). The increased emphasis on Second Life-based information does parallel, not surprisingly, the increased amount of time avatars were spending inworld as the course progressed. In terms of their focus, however, these comments concentrated more explicitly on specific information derived from Second Life, as illustrated by these sample comments:

> Avatar: This space for learning about other cultures and understanding them through education and discussion also exists in places like the Second Life Synagogue, which hosts Torah Talk every week.
>
> Avatar: GimpGirl offers women-specific support and helps members deal with more gender specific issues within the disabled community such as fetishization.
>
> Avatar: Attending a church in SL makes you more connected with people who are either homebound or prefer not to go to a physical church.

When avatars referenced information derived from direct interaction with Second Life, their comments were, for the most part, very specific and detail-driven, in stark contrast to the machinima-based comments. Interestingly enough, the references to Second Life information treated the virtual world much like the printed texts that avatars referenced. In a way, the Second Life comments were as "world-specific" as the print-based comments had been text-specific.

Conclusion

For the avatars involved in this case study, their preferences for seeking out course-related information were more focused on machinima-based resources and information gathered directly from Second Life. The latter preference, however, took some time to acquire over the course, but eventually became their main preference by the final unit. Savin-Baden (2010) suggests that the immersive characteristic of a virtual world like Second Life can be a powerful tool for educators--that is, "Second Life provides a form of challenging infotainment that hooks students into learning at the outset" (p. 70). As avatars became more familiar with Second Life, they spent more time there, and were willing to explore the resources offered.

However, it is not just that avatars were entertained by or interested in Second Life, they also treated the virtual world as a "text" itself, one that provided deep reading/learning experiences, as reflected through their comments. Machinima resources, although essentially providing the same type of information about Second Life, seemingly did not promote this sort of experience. One explanation for the difference might be that, in the context of the machinima, the avatar was passively viewing the world (once removed as a viewer of the video), rather than actively interacting with it.

While avatars in this class had a generally positive experience with Second Life and used it frequently as an informational source, questions remain when considering the virtual world as a "text" in the classroom. For example, we, as educators, have many effective strategies for teaching critical reading of print sources, and, more recently, one might argue that new media literacies have emphasized strategies for "reading" multimodal texts. Yet, what strategies do we teach for "reading" a virtual world? While we understand what it means to be a reader and/or viewer of information, what does it mean when the reader can become a living part of the text, that is, the avatar interacting with the virtual world? Similarly, how do we assess the credibility and authority of information gathered in a virtual world in the same ways we might other informational sources?

These questions notwithstanding, virtual worlds like Second Life, do hold promise for distance learning, as platforms to teach about new forms of information and different types of literacies, as well as extending the classroom experience in engaging and interesting ways.

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