Information Literacy and Online Reading Comprehension: Two Interconnected Practices

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Abstract

Information literacy is the practices involved in finding information to fulfill an information need. Online reading comprehension outlines what skills are involved in reading online, especially those that differ from reading in print. This paper outlines the interconnectedness of information literacy and online reading comprehension both showing the overlap of the concepts and the need for information literacy in order to reach online reading comprehension.

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, in the case of *World of Warcraft* a wiki like wowhead.com, but also in in-game chat. The in-game chat produces a call-and-response pattern that employs information literacy skills, i.e. a player realizes they have an information need and seeks the information by asking the community who then respond with the answer, as well as online reading comprehension skills which are needed for the interpretation of the chat itself and when a player needs to find an outside resource. 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 an individual, which is a value of communities of practice.

Information Literacy

With the vast amount of diverse information circulating and changing within the constellation of information (building on Steinkuehler's (2007) description of a constellation of literacies) surrounding an affinity space, it seems a natural place to observe and analyze the information literacy practices of naturally occurring communities online. Traditional information literacy theories and standards are designed to primarily describe the practices of information

literacy used in formal learning environments like K-12 or college level education (AASL, 1998; ACRL, 2000). Many traditional models for information literacy include a five step process using various terms but basically the same concepts: 1) seeking information, 2) evaluating information, 3) interpreting information, 4) synthesizing information, and 5) disseminating information. However, these models are unable to account for some of the most basic practices found within online affinity spaces, such as *World of Warcraft* (WoW), due to the fact the spaces share very little in common with more traditional resource heavy spaces. This is because the traditional models focus on formal educational settings using institutionally created information resources being sought and found 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 – like those put out by the game company, individually created resources – a player's individually created leveling guide or video, group created resources – guild websites (e.g. Elitist Jerks), and community created resources – a wiki (e.g. wowwiki.com). Because so many of the resources are user created and are constantly improved upon as the base data changes, 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's connection to other 21st century skills has been addressed by the Partnership for 21st Century Skills in their document Framework for 21st Century Learning, who place information literacy with media and ICT (Information, Communications, and Technology) skills. We argue, however, that information literacy is more than just a skill set. It requires reasoning and critical thinking skills to be effective in designing search terms for information needs as well as for determining which sources and information best fill the need at hand. Thus, information literacy should be placed more between media and ICT skills, on the one hand, and learning and critical thinking, on the other, because it encompasses both. Using examples culled from eight months of online ethnographic data (Steinkuehler and 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.

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 (2)

The functions of online reading comprehension show strong similarities to information literacy; these similarities will be explored below.

The difference between studying reading comprehension of print based media and digital media was 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, either being physically together, using synchronous online communications methods like gchat, or 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 about a websites author easily, retyped URLs because they were unaware of copy and paste, and typed in whole questions into the address bar and added .com at the end. She also determined that rewatching parts of struggling students' videos to look for these traits helped to identify the problem. 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 the linear narrative of one page and to another, then returning to the first page when appropriate. The reading that Coiro was studying was that of non-fiction and reference like materials. Although in book settings you would also employ techniques like scanning for reference materials, the ability to switch to a related subject highlighted by a link is just one of the ways that reading online, and therefore online reading comprehension, is a more fluid, hence complicated, process.

Conclusions

Studies of information literacy and online reading comprehension rely on a similar set of constructs and are equally driven by the goal of understanding what people do in online digital spaces with information in order to ultimately help them to be better prepared and more capable of accomplishing their comprehension goals. Although there has been no direct connection in the literature between information literacy and online reading comprehension until now, they are indeed closely related. Online reading comprehension shares a process that is strikingly similar to that of many definitions of information literacy. For example the five major functions of online reading comprehension (Leu & Zawilinski, 2007) outlined above could nearly be laid over top of the traditional model of information literacy and would line up point for point.

Online Reading Comprehension	Information Literacy
developing important questions	seeking information
locating information	{locating information is assumed between seeking & evaluating information}
critically analyzing information	evaluating information & interpreting information
synthesizing information	interpreting information & synthesizing information
communicating information	disseminating information

Online reading comprehension as one of its main differences from print based reading includes practices of creating search terms, sifting through sources, making evaluative choices, synthesizing the chosen sources, and responding through digital communication. All of these traits are synonymous with information literacy. The ability for students to have flexible skills is also important in information literacy for the same reason, the changing digital environment.

Information literacy and online reading comprehension offer two bodies of literature looking at the processes of people finding information, and in the case of this comparison between the two, finding information online. The overlap of these two areas offers an interesting opportunity for research, as well as for scholars in literacy studies and in library and information science to collaborate.

References

Association of College and Research Libraries [ACRL]. (2000). *Information Literacy Competency Standards for Higher Education.* Chicago: ACRL. Retrieved from http://www.ala.org/ala/mgrps/divs/acrl/standards/standards.pdf

American Association of School Librarians [AASL] (1998). *Information literacy standards for student learning: Standards and indicators*. Chicago: American Library Association. Retrieved from http://www.ala.org/ala/mgrps/divs/aasl/guidelinesandstandards/informationpower/InformationLiteracyStandards_final.pdf

Black, R. W. (2008). *Adolescents and online fan finction.* New York: Peter Lang.

Black, R. W., & Steinkuehler, C. (2009). Literacy in virtual worlds. In L. Christenbury, R. Bomer, & P. Smagorinsky (Eds.), *Handbook of adolescent literacy research* (pp. 271–286). New York: Guilford.

Coiro, J. (2009). Rethinking online reading assessment. *Educational Leadership, 66*, 59-64.Coiro, J., & Dobler, E. (2007). Exploring the online reading comprehension strategies used by sixth-grade skilled readers to search for and locate information on the Internet. *Reading Research Quarterly, 42*(2), 214-257.

Gee, J. (2003). *What Videogames have to Teach Us about Learning and Literacy.* New York: Palgrave Macmillan.

Jenkins, H. (2006). *Fans, bloggers, and gamers: Exploring participatory culture*. New York: New York University Press.

Lave, J. & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation.* Cambridge: Cambridge University Press.

Leu, D. J., Coiro, J., Castek, J., Hartman, D. K., Henry, L. A., & Reinking, D (2001). Research on instruction and assessment in the new literacies of online reading comprehension. In C. C. Block, S. Parris, & P. Afflerbach (Eds.), *Comprehension instruction: Research-based best practices* (pp. 321-346). New York: Guilford Press.

Leu, D. J. & Zawilinski, L. (2007). The new literacies of online reading comprehension. *Reading Online, 43*(1), 1-8.

Levy, P. (1997). *Collective intelligence: Mankind's emerging world in cyberspace.* Cambridge, Mass.: Perseus.

Partnership for 21st Century Skills. (2009). *Framework for 21st Century Learning*. Tuscon, AZ: Author. Retrieved from http://www.p21.org/documents/P21_Framework.pdf

Steinkuehler, C. A. (2004). Learning in massively multiplayer online games. In Y. B. Kafai, W. A. Sandoval, N. Enyedy, A. S. Nixon, & F. Herrera (Eds.), *Proceedings of the Sixth International Conference of Learning Sciences* (pp. 521-528). Mahwah, NJ: Erlbaum.

Steinkuehler, C. (2007). Massively multiplayer online games as a constellation of literacy practices. *E-Learning and Digital Media, 4*(3), 297-318.

Steinkuehler, C., Compton-Lilly, C. & King, E. (2009). Literacy practice & reading performance in the context of MMO games. To be presented at the Annual Meeting of the American Educational Research Association (AERA), Denver CO, April 30-May 4.

Steinkuehler, C. & Duncan, S. (2009). Informal scientific reasoning in online virtual worlds. *Journal of Science Education & Technology.* DOI: 10.1007/s10956-008-9120-8.

Steinkuehler, C. & King, B. (2009). Digital literacies for the disengaged: Creating after school contexts to support boys' game-based literacy skills. *On the Horizon, 17*(1), 47-59.

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