Using Video Games to Increase Information Literacy:

A Literature Review

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Abstract

The purpose of this article is to examine how video games can be used to increase information literacy. There are varying views on the nature of video games and the impact they have on learning and information literacy. Some associate video games with violent content, while others advocate for more use of games. After reviewing the literature, the research found that video games allow for learning opportunities and increased information literacy skills. Additionally, gamers exhibited similar information behaviors as if they were performing research. The Seven Pillars model of information literacy was used to examine the activities of gamers and found the traits of gamers could be applied to the framework. The article ends with a discussion of how these behaviors can be applied to improving information literacy and recommendations for libraries to interact with the gaming community.
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Introduction

The purpose of this article is to examine how video games can improve information literacy and learning. There has been a long-lasting controversy surrounding video games. There are those who associate video games with violence, youth’s growing apathy towards reading, and a lack of thought process required to play (Adams, 2009, Steinkuehler, 2010). However, there are also those who argue that games are beneficial. Games increase decision-making and improve learning processes (Adams, 2009). For the purpose of this article, “video games” can be played on a game console such as Sony’s PlayStation, Microsoft’s Xbox, or Nintendo’s Wii; or on a computer (Gee, 2003). As such, the concept of using games to increase information literacy is grabbing hold of the population’s interest, especially in libraries.

According to van Meegen and Limpens (2010), information literacy is “the art of selecting the best information in a short period of time and using it correctly” (p. 270). This meaning can be expanded upon to “knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner” (Gumulak and Webber, 2011, p. 243). Information literacy is an important skill to develop as we enter deeper into the Information Age. Information literacy helps increase quality of life by allowing us to gather necessary information in order to make knowledgeable choices. In other words, information literacy boosts one’s confidence when making decisions (“Introduction to Information Literacy”, 2006).

To increase information literacy, librarians, as well as businesses, have begun applying concepts such as gamification. Becker (2013) defines gamification as “when the principles of
gaming or game mechanics are applied to a productive activity to support its effectiveness” (p. 199). For instance, MIT’s Sloan School of Management designed a game that simulates challenges in changing strategic competitive environments (Levasseur, 2012). It is said that games designed in an epistemology context, help students to increase his or her innovative thinking by producing real-world situations (Levasseur, 2012).

Furthermore, Gee (2003) reasons that if a game “facilitates learning in good ways” then it will be successful in attracting gamers, those who play the game. To fully learn a game, the game needs to include the thirty-six principles of learning. These principles are described in his book, *What video games have to teach us about learning and literacy* (Gee, 2003). Becker (2013) expands to say that Gee’s principles of learning can be built-in to information literacy instruction.

After briefly looking at the meanings of video games, information literacy, and gamification as well as the potential significance of gaming in information literacy, the article will follow with a review of the literature looking at the information behaviors of gamers and these behaviors can be applied to increasing information literacy.

**Literature Review**

The use of video games in the library has caused mixed feelings among patrons and librarians. Despite recent trends and greater acceptance of video games, less-than-positive attitudes still exist towards these games. For instance, it is easy for video games to be criticized when considering “their violent themes, their scantily clad and ludicrous depictions of women, their scatological humor, and the hyper-masculine discourse that surrounds them” (Steinkuehler, 2010, p. 63). Popular games, such as *Grand Theft Auto* series and *Call of Duty* series, carry these suggestive themes. While performing their study, Gumulak and Webber (2011) found that
despite the suggested Entertainment Software Rating Board (ESRB) ratings, many gamers did not fall into the suggested age for game play. This is cause for parents, educators, and librarians to be apprehensive towards video games.

Additionally, other, less controversial matters have arisen. Video games are seen as disruptive to others and too “trivial a pursuit” to bring into the classroom (Adams, 2009). There is also the view that book and video games are complete opposites and that video games are the cause for the increasing dislike for reading (Steinkuehler, 2010). These views are not wrong, but they should be examined further.

People play video games because they are challenging and entertaining (Buchanan and Vanden Elzen, 2012; Gumulak and Webber, 2011; and Van Meegan and Limpens, 2010). Games also allow for immersion. Buchanan and Vanden Elzen (2012) explain that people “crave immersion for reasons like stimulation, escapism, and self discovery” (p.22). Gamers play to connect with themselves, with others similar them, and with society (Buchanan and Vanden Elzen, 2012). Van Meegan and Limpens (2010) emphasize that when an emotional aspect is involved, there is a greater impact on the quality of learning. Another benefit to building social systems on video games is the “access to both collective information and collective intelligence” (Squire and Steinkuehler, 2005, p. 40).

Studies have shown that video games possess the ability to increase learning and information literacy skills (Adams, 2009; Becker, 2013; Doshi, 2006; Gumulak and Webber, 2011; Martin, 2012; and Steinkuehler, 2010). For instance, Adams (2009) applied two theories, everyday life information seeking (ELIS) theory and the dramaturgical perspective, to determine how gamers utilize information literacy skills. Adams (2009) discovered that “active seeking” was the most directed mode of information seeking, followed by “active scanning” and that the
player attached him or herself to their setting. In these scenarios, gamers would ask a question in an online forum, observe or watch their surroundings within the game, and be alert for cues from other game characters (Adams, 2009). Van Meegan and Limpens (2010) noted that official resources such as those produced by the game’s makes were consulted after other gamers were consulted. Gamers place more trust in the information from other gamers. Adams (2009) determined that information seeking behaviors and meaning making of social situations exists in game play. This study is one example depicting the existence of information seeking video games.

There are many other arguments for video games positive effect on information literacy and learning. Gumulak and Webber (2011) state, “gamers have to discriminate between information sources to solve problems” (p. 243). Gamers need to choose what actions to take and what information sources can help them make the correct choice. For instance, information can be determined from character’s costumes or appearance (Adams, 2009). This information can tell the gamer what the other character’s role is in the game. Gumulak and Webbers (2011) found that gamers try different paths while moving through the game until they find the information they needed. They apply texts Gamers are also able to realize their need when they are unable to move forward in the game (Gumulak and Webbers, 2011).

Moreover, gamers are able to apply the skills they learn from video games to real-life scenarios. For example, Gumulak and Webber (2011) reported that one of the respondents recalled a fact from a game and was able to apply the knowledge to a science test for school. The application of skills ranged from specific facts and numbers to being able to care for a pet (Gumulak and Webber, 2011). This is another example of gamers’ ability to retrieve and recognize the use of information gleaned from playing.
Furthermore, Gumulak and Webber (2011) applied The Society of College, National and University Libraries’ (SCONUL) Seven Pillars model of Information Literacy and found that the information behaviors of gamers applied to the framework. SCONUL is an organization located in the United Kingdom and “promotes awareness of the role of academic libraries in supporting research excellence and student achievement and employability …“ (SCONUL, n.d.). This model was derived to enhance the education of information literacy by providing a process to developing information literacy (SCONUL, 2011). The following is a brief explanation of the Seven Pillars (SCONUL, 2011).

**SCONUL’s Seven Pillar model of Information Literacy**

**Identify.** In this stage, the gamer is able to distinguish between his or her information needs. This can be realized an item needs to be unlocked before the next level can be reached. The player is needing to become “unstuck” to continue through the game. (Gumulak and Webber, 2011).

**Scope.** This is where the gamer is able to detect what information he or she has and then decipher what is needed. The gamer may revisit another level to determine the “gap” or missing information. (Gumulak and Webber, 2011).

**Plan.** In this stage, the gamer is needing to develop a strategy for obtaining his or her information need. For instance, the gamer may need to choose between finding the solution in online discussion forums or ask for advice from a friend. This pillar had the least amount of evidence. The gamers did not provide thorough enough answers (Gumulak and Webber, 2011).

**Gather.** Here, the gamer is needing to locate and access the needed information. This is where the gamer has already made his or her decision and is pursuing his or her source for
information. This can be searching for reviews or asking a friend for help. (Gumulak and Webber, 2011).

**Evaluate.** In this stage, the gamer is reading reviews about a game, or different tips for successfully beating the game (Gumulak and Webber, 2011).

**Manage.** The gamer is able to communicate with other gamers, administering advice, and using the acquired information. Also in this pillar, the gamers displayed awareness to ethical aspects such as obtaining cheat codes and watching walkthroughs for game solutions. However, gamers saw cheating as okay if they nothing else could be found to solve the level or game (Gumulak and Webber, 2011, and SCONUL, 2011).

**Present.** This final pillar allows the gamer to create new knowledge. This can be in the form a game review (Gumulak and Webber, 2011, and SCONUL, 2011).

The Seven Pillar’s model of Information Literacy is a simply way to depict the similarities between the information behaviors of video gamers and characteristics of information literacy.

Lastly, these information behaviors can be applied to game design theory and gamification of information literacy. Becker (2013) highlights the use of information behaviors of gamers and their application to gamification, “Gaming mechanics complement one another, and are most effective when all of the principles are incorporated in to the learning activity” (p. 202).

The literature reviewed can be synthesized into the statement, “… game cultures promote various types of information literacy, develop information seeking habits and the production practices (like writing), and required good, old-fashioned research skills, …” (Squire and Steinkuehler, 2005, p. 38).
Discussion and Conclusion

Information literacy is becoming an important topic among librarians, as is providing access to video games in the library. Gee and Levine (2009) stress the changing ways of learning and acquiring information as we progress into the twenty-first century. Others have noted the level of engagement and increased use of technology within the Millennial generation (Gee and Levine, 2009; Squire and Steinkuehler, 2005; and Van Meegan and Limpens, 2010). Technology is allowing for more innovation, but it is also requiring a new set of skills. Gee and Levine (2009) suggest linking “literary skills with […] other competencies such as critical thinking, collaborative problem solving, and media literacy” (p. 50). After reviewing the literature, it is easy to see how video games possess qualities for improving information literacy.

Squire and Steinkuehler (2005) recommend librarians engage in dialog with the gaming culture and remain educated in the latest technologies. An initial step to interacting with gamers and fostering information literacy is for librarians to use existing game play exercises and information seeking experiences, expand upon current strategies, or develop new models gleaned from the information behaviors of gamers. A good start to understanding the impact of the video gamer’s information behaviors is by applying the Seven Pillars of Information Literacy.

Game situations can also be applied to real-life scenarios, enhancing the individual’s learning experience. Doshi (2006) suggests using gamification and explains, “By presenting students with real-world situations and allowing them to play a game by applying newly learned library skills, the concept of information literacy loses its abstract, theoretical quality and becomes a relevant part of their lives” (p.16). Ultimately, the literature has shown that aspects of video game play can improve information literacy and help serve the needs of the digital generation.
References


