Chapter 8
Information Literacy in Virtual Environments:
Changing Needs of P–12 Learners

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ABSTRACT

This chapter provides an overview of information literacy needs of P-12 learners in virtual environments. As more of life is spent in global digital participatory culture, information literacy skills have moved from primarily print-based to include digital content evaluation, content curation, and a personal responsibility for digital citizenship. Using standards for 21st century learning from the American Library Association, examples highlight information literacy elements embedded in immersive learning environments, such as the Anne Frank simulation (a 3D replica of Amsterdam and the annex where Anne's family hid) and a digital citizenship game built by students in the game of Minecraft. Creators of immersive learning environments in virtual worlds must accurately depict historical eras and cite sources for authority and accuracy of information. These 3D simulations provide opportunities to teach information literacy in virtual spaces with a shared "sense of presence". Learners in virtual environments have digital citizenship responsibilities from a very young age.

INTRODUCTION

As more of life is spent in *global digital participatory culture*, information literacy skills have moved from primarily print-based to include digital content evaluation, content curation, and a personal responsibility for digital citizenship. Global digital participatory culture refers to the immediate access across distance (global) through mobile devices (digital). The majority of students today (92 percent) have mobile devices which are used daily, sometimes instantly according to the Pew Internet Report (2015) and are expected to demonstrate learning using technology tools (participatory culture). The importance of information literacy in the information age, where today's youth live, cannot be over emphasized. In fact, the future of civilization and the successful education of the citizens of tomorrow may depend upon understanding information literacy in the

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information age and encouraging young people to take personal responsibility for digital citizenship. Identifying the information literacy needs of learners, particularly in virtual environments, is fundamental to educators, librarians, students, parents, and society. Through discussion of the revolutionary changes taking place in digital culture, we can develop a better understanding of the need for information literacy embedded in virtual environments.

BACKGROUND

Learners growing up in global digital participatory culture have new information literacy needs that differ greatly from the needs of prior generations. Reading and writing were of utmost importance for P-12 learners just decades ago, but information literacy now includes numerous other formats: listening, viewing, creating, evaluating, and curating content. Futurist, Alvin Toffler, suggested back in 1980 that individuals are now *prosumers,* meaning both consumers and producers of content (Kotler, 1986). Prosumerism impacts all aspects of our lives, including the education of youth growing up in a culture where user-generated content is more prevalent than content from traditional publishing sources. The move from a primarily print-based world into digital and virtual world learning environments puts personal responsibility for digital citizenship on each learner.

The expectation of learners to produce content illustrating learning concepts, particularly in digital formats, such as uploading electronic Web 2.0 products, has become common in classrooms through free technology applications and websites. Glogster, Edublogs, Livebinder are a few examples of online resources that provide students with digital tools. Sometimes digital applications can be deceiving because the high quality graphics are exceptional but the critical thinking underlying them may be minimal. Librarians and teachers are encouraged to scaffold learning through guided inquiry (Kulthau and Maniotes, 2010), modeling good questioning techniques and a critical stance on issues.

Deep learning requires rigor. Learners of all ages, not just the younger learners, can run into trouble evaluating electronic resources and digital tools. Fontichiaro (2010) shares strategies for developing a questioning stance regarding digital content that can "nudge learners toward inquiry". Learning to ask better questions when seeking information helps students think deeply and critically and makes learning a rigorous activity. This rigor applies to immersive gaming environments where participants must concentrate on difficult tasks even though the game-like state is interpreted as play (Gee, 2003). The first academic article to use the term 'playbour' (often spelled *playbor*), a portmanteaux combining *play* and *labor*, was Julian Kucklich (2005). The playbor concept illustrates that learning in a gaming environment can be both enjoyable and challenging; however, education has been far behind commercial business in utilizing videogames (Rey, 2012).

The rise in digital content online coincided with the popularity of video games and the birth of immersive learning environments or virtual worlds, like Second Life and Minecraft over the past decade. Children ages 10-14 represents the largest user group within virtual worlds with millions of registered users in environments like Habbo Hotel, Club Penguin and Minecraft (Kzero, 2014). These environments can be synchronous and multi-player or asynchronous and entered alone. Either way, learning in virtual environments or videogames requires many elements of information literacy.

Merriam Webster defines *gamification* as "the process of adding games or game-like elements to something (as a task) so as to encourage participation". This definition aligns with global digital participatory culture and suggests that students may be able to learn rigorously in virtual immersive learning environments that have been designed with embedded information literacy alongside