Chapter 5
Gaming Literacies and Learning

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ABSTRACT
This book chapter summarizes an extensive literature review on gaming literacies and learning. It carefully examines the definition of gaming literacies from both message consumption and production perspectives, stemming from the definition of foundational literacies and information communication and technology (ICT) literacies. We establish a framework based on Bloom’s taxonomy to explore the role of gaming literacies on learners’ cognitive, affective and psychomotor domains. We discuss the implications for teachers to adopt games in the classroom, possible problems and concerns to have learners play games, synthesize practices for using games in educational context, and provide suggestions for future research.

INTRODUCTION
In this chapter, we will define gaming literacies in terms of message consumption and production; identify types of knowledge and skills involved through playing and designing games; and establish a framework on how gaming literacies can promote the abovementioned knowledge and skills based on Bloom’s taxonomy (cognitive, affective, and psychomotor domains). We will also discuss controversies, concerns and issues about gaming literacies and provide suggestions for future research.

DEFINITION OF GAMING LITERACIES

Foundational Literacy
Literacy has been defined differently throughout the history due to the change of societal demands. Not too long ago, one can be determined as literate if s/he can read and write the basic information about herself or himself. With the change of the complexity in the society and the demand from the job

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market, one needs to have the ability to read, write, speak, listen, and think to be considered literate in order to function properly in their daily life. With new inventions of technologies, literacy, meanwhile, has upgraded and updated to include “the ability to identify, understand, interpret, create, compute, and communicate using visual, audible, and digital materials across disciplines and in any context.” (International Reading Association, 2012; Leu, Zawilinski, Forzani & Timbrell, 2014).

Literacy, in general, is a common practice among the public in terms of the purposes of usage in a macro-environment, such as the one defined by what most agree upon due to the necessity for an individual to properly function in a society at large. Literacy is even more powerfully defined as a “situated practice” due to the nature of the language and the communicative purposes involved in a certain culture in a micro-environment. The term “multiple literacies” was used to emphasize different literacy practices among people from different cultural and linguistic backgrounds (Taylor; Bond & Bresler, 2006). It was then expanded to address a broader range of literacy experiences among people who become literate in a world with diverse population and with diverse definitions of being literate (North Central Regional Educational Laboratory, 2001). In the 21st century, technology has raised the intensity and complexity of literate environments, a literate person should possess a wide range of abilities and competencies, many literacies. These literacies—from reading online newspapers to participating in virtual classrooms—are multiple, dynamic, and malleable. (NTCE, 2008)

With profound changes in new technologies such as gaming software, video technologies, Internet, webpages, search engines and many more yet to emerge, the notion of “new literacies” began a different era. Literacy evolves to include a broader set of skills of using information and communication technologies (ICTs) to consume and produce information (Leu et al., 2004a).

New Literacies: Media Literacy and ICT Literacies

To frame the definition of gaming literacies, we need to discuss media literacy and ICT literacies (some use computer literacy, information technology literacy) since all of which are affected deeply by multimedia, computer technology and the Internet. The changes and the advancement of technologies create new possibilities and ways to enhance comprehension and communication, and has therefore reshaped the meaning of literacy. With the prevalence of ICT tools (WWW, e-mail, weblog, digital video…); its integration in teaching and learning becomes an increasingly important area of focus and bring more opportunities and challenges to the educators and learners. Computer and internet tools become indispensable to a typical student in the information age. A student might need to complete assignments with productivity tools such as word processors and spreadsheets; collaborate with classmates through e-mails, Google Applications, instant messaging, wikis, and weblog; research on the internet using search engine, web browser or even web map (e.g. Google Earth); evaluate and synthesize information; or communicate idea with presentation software or video editing tools.

ICTs are redefining the skills and talents needed in the 21st century (Mehlman, 2003; Hsu, Wang & Runco, 2013). They make tasks easier so learners can place a greater burden on higher-level cognitive skills. In this case, the definition of ICTs should not be limited to the skills to access to hardware, software and network, but to also include the corresponding cognitive skills and general literacy (ICT Literacy Panel, 2002, p. 6). In other words, learners do not just simply apply ICT skills passively, they apply them actively to create and present information needed. Therefore, it is important to include both message consumption and production perspective while defining literacy. For instance, Livingstone (2004) de-