

## Chapter 12

# Computational Literacy in Online Games: The Social Life of Mods

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### ABSTRACT

*Modding communities are particularly ripe environments for rethinking what it means to be IT literate in the contemporary world. Mods are, as we argue, computational literacy artifacts, exemplifying not merely computer literacy but also the ability to understand and use computational models and processes to conceptualize and solve problems. In this article, we describe modding practice in the context of the best-selling computer game to date: World of Warcraft. By analyzing such activities as a form of computational literacy practice “in the wild,” we demonstrate how modding illustrates what it means to be technically literate in the contemporary participatory sociotechnical world. Based on our analysis, we argue for reconsideration of computer literacy as computational literacy, authorship as collaborative and negotiated rather than individually achieved, and digital media literacy practice as one involving design and production, not merely passive or critical consumption.*

### INTRODUCTION

There is a great digital divide between schools and the contemporary world beyond them. Despite extended efforts of the last decade to integrate technologies into schools, the ways in which computers and other digital media are used outside

the classroom contrasts sharply with how they are used within it. Within schools, information technology (IT) is still frequently taught as a decontextualized base of knowledge and skills (such as *keyboarding*)—computer science, for example, reduced to nothing more than computer programming (Denning, 2004)—rather than as a goal-

driven practice in authentic contexts where the outcomes might actually count. When integrated into subject matter, where students might have a better opportunity to experience technology as a powerful means toward various ends, it is often implemented in unreflective ways with little attention paid to designing students' experiences with the technology itself and not just with the content it is seen to (more or less transparently) mediate. In schools, "problems are assigned and understood by everyone as thinly veiled occasions to exercise tool knowledge or skills rather than as reasons for the existence of the tools" (diSessa, 2000, p. 40) in the first place. As educators, we have the deceiving luxury of acting as if computer literacy were some individual trait when, everywhere beyond the school, computer literacy *practice* is necessarily, increasingly social, distributed, and collaborative (Barron, 2004; Bell, 2005). In classrooms, technology is single media not multimedia, focused on content delivery not content creation and exchange (International Society for Technology in Education, 2007) with students positioned as passive recipients rather than active, critical participants in the production pipeline.

From this perspective, schools are one of the last remaining bastions of the old transmission model of technology and learning in the contemporary age of *participatory media* (Jenkins, 2006; Papert, 2007). Participatory media—such as blogs, Wikis, social bookmarking and networking sites, and mashups—are many-to-many media where both production and dissemination is distributed across an entire network of people (also see Web 2.0 discussions, O'Reilly, 2005). Today's adolescents and young adults are growing up in an age where participatory (rather than broadcast) environments are increasingly the norm: "Some 57% of online teens create content for the internet. That amounts to half of all teens ages 12-17, or about 12 million youth" (Lenhardt & Madden, 2005). Thus, while schools vigorously maintain the asymmetry between content provider (teachers and textbooks) and consumer (student), the con-

temporary world outside the school increasingly challenges such distinctions, in part, through the demand for and use of increasingly interactive media. This is all part of what some now call the *professional-amateur (or Pro-Am) revolution*:

*The twentieth century was shaped by the rise of professionals... From education, science and medicine, to banking, business and sports, formerly amateur activities became more organized, and knowledge and procedures were codified and regulated.... But in the last two decades a new breed of amateur has emerged: the Pro-Am, amateurs who work to professional standards... The Pro-Ams are knowledgeable, educated, committed and networked, by new technology. The twentieth century was shaped by large hierarchical organizations with professionals at the top. Pro-Ams are creating new, distributed organizational models that will be innovative, adaptive and low-cost. (Leadbeater & Miller, 2004, p. 12)*

Our current educational approaches to IT literacy do not prepare students for civic participation in such spaces—by a long shot (Jenkins, Purushotma, Clinton, Weigel, & Robison, 2006).

But if contemporary classrooms are not the right model of education in the contemporary age of participatory, Pro-Am culture, what is? One reasonable candidate for investigation is the informal learning communities that develop organically around popular interactive media out "in the wild" (Hutchins, 1995). One such example is the emergent communities found in massively multiplayer online games (MMOs). MMOs are virtual 3D gaming environments in which players, through their online digital character or *avatar*, are able to play not only with the computer software environment and characters but also with other human players. They are, in effect, persistent virtual social and material worlds in which players engage in collaborative or competitive activities (Steinkuehler, 2006a, 2006b) or, more minimally, individual activity in a populated so-

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