

Chapter 18

Collaborative Learning in Massively Multiplayer Online Games: A Review of Social, Cognitive and Motivational Perspectives

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ABSTRACT

In this chapter a theoretical framework is proposed for the investigation of Massively Multiplayer Online Games (MMOGs) as environments for the emergence of collaborative learning. Elements and features of MMOGs such as the integrated tasks, the interactions among players, the groups, the members' characteristics, and the environment are examined through the perspective of their motivational, cognitive and social potential, based on literature review, interviews with players and participant observation. It is argued that MMOGs are environments that can integrate a wide range of motivational features, opportunities for social interactions and for the emergence of cognitive processes, into a meaningful context. Implications for the educational practice are also reviewed.

INTRODUCTION

Why should we review Massively Multiplayer Online Games (MMOGs) in a handbook oriented towards educational games, learning and motivation? MMOGs constitute a flourishing industry, attracting and sustaining the interest of millions

of players. Their “massively multiplayer” aspect entails a large number of players logging in the same environment and interacting with each other through their virtual representations, their avatars. Although they are often criticized for aggression, violence, addiction and sensitive to gender and race discrimination issues, with stereotypes describing the typical gamer as socially deviant or

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marginalized, addicted, usually young and male (Soper & Miller, 1983; Fisher, 1994; Anderson, 2004; Wallenius & Punamäki, 2008; Anderson et al., 2010), this debate is still ongoing: the stereotypes have been debunked (Williams et al., 2008) and research on the impact of video games on aggressive behavior and addiction is being challenged, either in relation to the selection of the sample, the statistical methods used, or the interpretation of results (Castronova, 2010). Linking of aggressive behavior with video games does not suggest causality; aggression does not always entail violent behavior; excessive playing does not necessarily qualify as addiction (Griffiths & Davis, 2005; Charlton & Danforth, 2007) or should be attributed exclusively to the medium rather than to individual or social factors. In response to this criticism, and although they are mainly commercial games aiming at the entertainment of the players, far from the formal objectives of the curriculum, a number of studies have discussed their learning potential, focusing on areas such as collaborative problem-solving, the acquisition of expertise, their employment in educational settings, digital media literacy, collaboration skills, informal scientific reasoning, computational literacy, and cultural mechanisms for learning (Griffiths, 2002; Steinkuehler et al., 2007; Schrader & McCreery, 2008).

McGrenere (1996) reviewed multi-player games for education, from the perspective of CSCL and CSCW. Although MMOGs were not directly addressed in this study, since they were at that time at their initial stages, the educational benefits of children's co-operation and social interactions within a gaming environment were recognized. Garris et al. (2002) examined instructional games from the perspective of their motivational features and proposed a model where the instructional content and motivational characteristics of games, such as fantasy, rules, and challenge, trigger the game cycle (user judgments, user behavior, system feedback), and after a debriefing phase (i.e. the instructional support)

may produce learning outcomes. Kiili (2005a) presented a model linking educational theory and flow theory with game design. In this model the challenges based on educational objectives form the heart of the model; design decisions on the gameplay, the storytelling, the game balance, the optimization of cognitive load and appropriate challenges sustain and support motivation, engagement and learning outcomes. de Freitas and Oliver (2006) proposed a framework for the evaluation of games and simulations in relation to curriculum objectives. This framework involved learner or learner group preferences and requirements, the context within which play and learning take place, the representation of the environment, and the relevant learning processes and frameworks. These approaches though did not address the highly social aspect of MMOGs and the role of the spontaneous social interactions of players in motivation and learning. On the other hand, in research on MMOGs involving the social interactions and in-game group dynamics, there is limited review of the learning aspects. The complexity and the dynamics of these environments require novel models and tools for the investigation of the cognitive processes emerging. Our article is situated within this context, attempting to combine aspects of learning, motivation and social interactions into one conceptual framework, and view MMOGs through this interconnection of factors.

Single Player Games, MMOGs and Virtual Worlds

Although MMOGs present many similarities to single-player, stand-alone games and virtual worlds, they also present inherent structural characteristics which may positively impact learning. Virtual Worlds such as "Second Life"©, "There" ©¹, and "Active Worlds" © are being used over the past few years as environments to support learning and training (de Freitas, 2008). Although they present many similarities to MMOGs, such as the 3D space, the graphical representations, the flex-

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