

## Utilizing Massively Multiplayer Online Games to Foster Collaboration and Learning

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### Introduction

Successful integration of traditional learning objectives with the elements of entertainment, play, and fun becomes the goal for the design and application of educational video games commonly referred to as *serious games* (Aldrich 2005; Eck 2006; Kelly et al. 2007; Mayo 2005). Because serious games are designed to demonstrate transfer of knowledge or skills developed in the virtual realm to the real world, careful evaluation of learning in video games needs to be a crucial component of the design process. Oftentimes assumptions are made that students who are not gamers can play serious games and reap the pedagogical benefits of gameplay without experiencing a learning curve relative to understanding the purpose of the game. Thus, inexperienced players encounter two different trajectories of learning: the cognitive process associated with understanding how to play the game (e.g. navigation of game controls, manipulation of resources for completing game tasks, etc.) and the cognitive processes embedded in gameplay activities that correspond to domain specific learning goals (Fullerton et al. 2004; Gee 2003; Mayo 2007; Prensky 2001; Rankin et al. 2008; Salen & Zimmerman 2004). These dissimilar trajectories of learning can represent competing goals for the player who portrays dual roles of student and novice gamer, and possibly impede positive learning gains. Prior research reveals that social interactions with other players during gameplay decreases the learning curve associated with comprehending game objectives and that these strategic alliances enable novices to accomplish game tasks (Nardi & Harris 2006; Rankin et al. 2008; Steinkuehler 2005). However, less is known about the interdependency of in-game social interactions among players and their impact on individual learning achievements relative to a specific subject domain (Rankin et al. 2008). In response to this dilemma, we examine the affordances attributed to one genre of video games, Massively Multiplayer Online Role Playing Games (MMORPGs), and correlate them to second language pedagogical strategies.

### Affordances of MMORPGs

The structure of MMORPGs supports character evolution, one of the primary goals of gameplay. Players assume the role of the virtual characters they have created and consciously commit to the advancement of these characters in the virtual world. Consequently, the avatar masks the real identity of players who are actually foreign language students and reduces the degree of language anxiety associated with face-to-face interactions with native speakers in the real world (Horowitz et al. 1986; Beauvois & Eledge 1996). In addition, foreign language students develop reading comprehension

skills in the target language as they translate Non Player Characters' (NPCs) dialogue displayed on the screen and glean information pertinent to completion of game tasks commonly referred to as *quests* (Rankin et al. 2006a; Rankin et al. 2006b). Quests describe challenges that provide opportunities for character advancement (e.g. achievement points). Experienced gamers realize successful progression through the virtual world depends on well-formed affiliations that enable players to complete increasingly difficult quests. MMORPGs are designed to create and support social networks of gamers (Jacobson & Taylor 2003). Powerful alliances play a key factor in gamers' abilities to defeat enemies and accomplish tasks that are virtually impossible to perform alone (Nardi & Harris 2006; Steinkuehler 2005). Players establish strategic relationships via conversations displayed as chat messages on the screen (Steinkuehler & Williams 2005). In-game social interactions require foreign language students to practice their conversational skills in the target language and further develop communicative performance skills while acquiring knowledge of the gaming culture (e.g. planning raids to defeat enemies).

## Methods

Twelve Advanced ESL students enrolled in an Intensive English Program at a southern liberal arts college were randomly assigned to one of two groups: six ESL students who played *EverQuest*® II independently for five hours and six ESL students who were grouped with native English speakers for five hours of gameplay. Participants completed pre- and post-test assessments to evaluate learning outcomes attributed to gameplay experiences. Additionally, eleven of the twelve ESL students completed a post-game questionnaire that evaluated participants' gameplay experiences.

Based upon analysis of in-game social interactions between English as Second Language (ESL) students and Native English Speakers (NES) who play Sony Online Entertainment's, we identify gameplay activities that promote understanding of game objectives and collaboration between Native English Speakers (NES) and English as Second Language (ESL) students and attribute to ESL students' increased English proficiency. Results indicate that ESL students experienced difficulty with mastering the game objectives for two reasons: 1. slow processors which resulted in delayed response to keystrokes and produced slow navigation of avatars during gameplay and 2. lack of understanding of game activities due to inexperience playing MMORPGs. Despite these difficulties, in-game social interactions with native speakers assisted ESL students with understanding the rules of the game and contributed to second language vocabulary acquisition. Leveraging the use of technology and digital media, such as this, may further aid in the globalization of science and innovation by enabling a new method of transferring knowledge and skills across cultural boundaries.

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