THE OVERLAPPING WORLDS VIEW: ANALYZING IDENTITY TRANSFORMATION IN REAL AND VIRTUAL WORLDS AND THE EFFECTS ON LEARNING

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ABSTRACT

Of late, digital game-based learning has attracted game designers, researchers and educators alike. Immersion in the virtual 3D environment of a game may have positive effects on K-12 students' cultivation of self (Dodge et al., 2006). Currently, two opposing views related to game-based identity formation are presented in the literature: the Separate Worlds View (SWV) and the Identical Worlds View (IWV) (Stevens, 2007). The purpose of this paper is to explore these views to determine whether a third position might be required for a more comprehensive treatment. To this end, we offer The Overlapping Worlds View (OWV). The Overlapping World View proposes that an individual's virtual and real world identities are neither entirely separate nor identical. The degree of overlapping of identities depends on the social consistencies between virtual and real worlds. This third view thus opens opportunities in educational research and instructional design in a context, where current and future generations of learners will grow up in a digital, environment many experiencing virtual worlds as an integral part of their private and public lives.

Keywords: Identity, Separate World View, Identical World View, Overlapping World View, K-12 Education, Digital game-based learning, Massive multi-player online games.

INTRODUCTION

Although the use of games for educational purposes can be traced to the use of war games in the 1600s (Gredler, 2004; Langton, Addinall, Ellington, & Percival, 1980), the application of game techniques to create digital game-based learning (DGBL) has gained dizzying amounts of attention in the past decade. Riding on the back of continued advances in computing and networking technology, modern digital games have evolved far beyond their roots in arcades and simple graphical systems to include levels of complexity and realism that permit for unprecedented levels of embodiment, experience, and immersion (Chee, 2007; Smyth, 2007). Massively multiplayer online games (MMOGs), especially, have of late attracted specific attention from game designers, researchers, and educators. As Squire (2007) states, "the study of games and learning is ready to come of age" (p. 167). Attributes of digital games such as strong motivation effects, contextual bridging, and

personalization of learning, lead game-based learning proponents to claim: "A good game's design is inherently connected to designing good learning for players" (Gee, 2007a, p.21). Today's students represent a generation growing up with interactive digital and communication tools, in which the use of games for home and school is common (Oblinger, 2003, 2006). This generation, particularly youth from ages 8-18, are also considered to be the leading population in online gaming (Annetta, Klesanth, & Holmes, 2008).

An increasingly popular type of virtual experience for youth is what is referred to as massive multi-player online games, or MMOGs. MMOGs are persistent, 3D online gaming worlds that incorporate role-playing and multiplayer systems with the use of instant messaging and voice chat (Cole & Griffiths, 2007; Griffiths, Davies, & Chappell, 2004). Often times, these virtual worlds require teams of players to coordinate their efforts to conduct missions that advance their status, individually and

collectively, in the game world. These worlds continuously exist and evolve where literally thousands of players from around the world meet, interact, and play together (Smyth, 2007). Important to the position offered in this article, virtual worlds are believed to have specific impact on children's formation of identity. To illustrate, this, Dodge, Barab, Stuckey, Warren, Heiselt, & Stein (2008) conducted an in-depth ethnographic study of four middle school students participating in a 3D virtual world designed to explore life sciences, Quest Atlantis (http://atlantis.crlt.indiana.edu/). The cases demonstrated that children's senses of identity (within a learning context) might be altered and advanced within 3D multi-user virtual worlds through "expressing agency, adopting commitments, developing meaning, and engaging in learning" (p. 234). For example, one participant, Cliff, who had previously expressed disinterest and lack of motivation in the place-based classroom "lit up" when he entered the 3D virtual world and became a collaborative, supportive, expressive contributor. Most notably, Cliff expressed agency through the adopted role of technology expert. As evidenced in the case study (p.236), Cliff's time spent in the 3D world and contributions to the discussion increased noticeably. Most impressive was that Cliff identified himself as the "Quest Atlantis Master" and was proud that he could now express his inner "techno-geek" identity amongst classmates and teacher. This reported episode compels us to question a simple either-or distinction between virtual and real worlds. As Cliff's, and others' documented in Dodge et al.,'s (2008) work experience belies the relationships and effects of virtual and real world, which are more complex. Better stated is that there is a mutually constitutive relationship (Barab & Wolf, 2006) between real and virtual world identities.

As Dinter (2006) notes, digital networked technologies and associated media are of great importance for children's processes of individual identity formation. Currently, two opposing views related to game-based identity formation exist in the literature to explain the effects: the Separate Worlds View (SWV) and the Identical Worlds View (IWV) (Stevens, 2007). The SWV view proposes

that a player takes on a new or independent identity in a game world, one that is markedly different from the real world identity. Examples of these can be found in the 3D virtual world Second Life (www.secondlife.com), where participants portray themselves as animals, who in the in-world parlance are referred to as "furries." The parameters of Second Life allow players to construct and portray an identity much different from the real world. The IWV, on the other hand, claims that game identities and real world identities are the same (Stevens, 2007). The argument is that players do not make a distinction between their real world and virtual world identities. One way this is expressed is that virtual world occupants refer to themselves as "gamers."

Using the example of Cliff above as a substantive case, our proposal is that separate and identical worldviews are insufficient to explain the complex interrelationships of real and virtual world identities. In the next section, we examine ways MMOGs potentially affect identities of youth during game play. After identifying what is perceived as insufficient specification and complexity in the existing two views on identity, we offer a third perspective, the Overlapping World View (OWV). The OWV suggests that virtual and real world identities are mutually constitutive in game play. The integration of an MMOG player's virtual and real world identities depends in part on the individual's local and distant connections, ties, and collaborations. As Nardi and Harris (2006) noted in an empirical investigation of players in World of Warcraft, perhaps the most popular MMOG in the world, learning and identity are intricately intertwined during game play. As one player commented, "I like [in World of Warcraft] that you kind of feel a part of this bigger world. You have to go and explore and find out things and meet people" (p. 155). In conclusion, we suggest two key questions related to this view that should be investigated to understand potential learning and to guide future teaching, design, and development: 1) What aspects of identity can be extracted from the virtual world to have positive, lasting effects on learning? 2) How should developers, designers, and teachers orchestrate virtual play to facilitate positive, healthy identity formation?

MMOGs: Interdependency of Play, Identity, and Learning

Self, or identity, as Mead (1934) pointed out, "is accomplished in a process of taking the role of the other with increasing degrees of sophistication that are mastered in sometimes literal and other times metaphorical play and gaming activities" (p.338). From a situated learning and legitimate peripheral participation perspective (Lave & Wenger, 1991), identity transformation is a crucial indicator of learning and development. Identities, in contrast to and combination with group norms and practice, are important features to attend to when analyzing performance (Barab, Evans, & Baek, 2004; Evans & Powell, 2007). Digital technologies including video games, as Jaffee (1998) states, may disrupt, threaten, or enhance identities. Consequently, an exploration of identities and game play is in order.

The impact of video games is believed to have particular relevance to today's K-12 students, the so-called "Net Generation" (Jones, 2002), as they have grown up with interactive digital technologies readily at-hand. These students approach life differently as they integrate digital technologies into their daily routine (Federation of American Scientists, 2006). Gaining particular attention in this realm of technologies and software are massive multi-player online games (MMOGs), which are defined as persistent, networked, interactive, narrative environments in which players collaborate, strategize, plan, and interact with objects, resources, and other players within a multi-modal environment (Dicky, 2006; Nardi & Harris, 2006). Social interaction with mid-size to large groups online is a defining feature of MMOGs (Smyth, 2007). MMOGs allow users to experiment in a safe, non-threatening environment and to expand, explore, and reflect on different aspects of themselves (Turkle, 1995). In MMOGs "children can play imaginary roles and in the process develop the capacity to see themselves, as others might-to see themselves as both object and subject- the quintessential quality of self " (Waskul & Lust, 2004, p.338). Therefore, immersion in MMOGs may possibly affect K-12 students' cultivation of self or identity specifically (Dodge et al., 2006) since they are still in the

process of developing their own identity (Konijn & Bijvank, 2007). Stahl (2006) defined self and identity as a cognitive artifact that is socially constructed and internalized through mimicking. Identity, as proposed by Marcia (1966), is resolved by an internal, self-constructed, and dynamic organization of aspirations, skills, beliefs, and other factors. This paper defines identity as, basically, a subjective sense of an invigorating feeling of being active and alive (Erikson, 1968), that is to say, the sense and perception of who one is (Lee & Hoadley, 2007). The virtual environment of a game is a sandbox, a set of representations and behaviors with which the player can use to express himself (Squire, 2007, p.175). Individuals, therefore, can explore new identities in game-based virtual worlds, i.e., MMOGs, by participating in virtual communities and forming social relations (Hagel & Armstrong, 1997).

Identity Formation and Transformation in Virtual and Real Worlds

There are two current opposing views regarding game-based identity formation and transformation: Separate World View (SWV) and Identical World View (IWV). The SWV states that "games are a world apart from the real world where players can take on new identities" (Stevens, 2007, p.59). While the opposing view claims that identities are crafted through game play, virtual/game identities actually mirror real world identities (Stevens, 2007). These two extreme views either neglect the effect of the virtual community on individual identity formation or exaggerate it. On one hand, the SWV tends to propose that players leave their virtual identities in the virtual world as "leaving work at home". This view fails to take into account the effects of the virtual communities on an individual's identity formation. As Calvert (2002) stated, people's interactions and interpretations significantly influence the identities they form. MMOGs provide participants with a different way of social interaction and different technical experiences, which contribute to formation of individual identities. In a randomized, longitudinal study conducted by Smyth (2007), it was discovered that 100 college-aged MMOG players (18-20 year old) developed new friendships as a result of playing

the game, and game play had unexpected, adverse effects on the real world (less sleep, worse health). Thus, spending excessive time in a virtual world began to have both positive and negative impact on the participants' real world. Though Smyth noted MMOGs bring a different experience than other types of game play, further work need to be done to clearly delineate the unique behavioral implications. Contrastingly, the IWV takes virtual and real world identities to be identical, which may exaggerate the effects of virtual worlds on identity formation. As the work of Penual and Wertsch (1995) help us to understand, the identity of an individual established in a virtual world, most often in the form of an avatar with varying similarities to the player's actual physiognomy, is often contextually constrained and will not be completely transformed to his or her real life. Similar to everyday life, the cultivation of a virtual identity in MMOGs emerges from the innumerable possibilities that culminate over a history of choices, decisions, and consequences that are patterned and structured (Waskul & Lust, 2004). Very often, there is a difference between an individual's self-presentation in real life and what they develop as their virtual form of self-presentation (Dinter, 2006). For example, gender-reversal is an often-practiced technique of MMOG players. A shy girl may become a talkative brutish boy in MMOGs. Neverthless, it does not mean she will take this male persona back to her everyday life, the embodiment of digital avatars is much more complex than the IWV claims (Biocca, 1997). Taken as a whole, a player's virtual and real world identities are neither entirely separate nor identical. The development of self entails a complex, shifting process of negotiation among an individual's ideas about what they might become, what they would become, and what they are afraid of becoming. An individual will behave so as to approach or avoid models of other possible selves (Marcia, 1966). The identities are often limited or shaped by the social identity, which is formed in a given situation in which one gains the values, established practices, knowledge, and skills from more capable peers. Research conducted by Yee (2005, 2007) indicate that MMOGs allow new forms of social identity. Social identity

flows from being or seeking to become a member of a particular society, be it in-game or in-world (Gee, 2007a, p. 40). That is to say, the transfer of a MMOG player's virtual and real world identity to the opposite world depends on their social identity in that world. The mutual constitution of an MMOG player's virtual and real world identities depends to a certain extent on social consistencies between these two worlds. Based on these raised issues, this paper suggests an "Overlapping World View". Figure 1 indicates the relationship among these three worldviews. When putting these three views on a continuum based on the degree of identity sharing between the virtual and the real world, the OWV is centered emphasizing a healthy middle ground between extremes of the continuum. Implicit points being raised are that ultimatums should be avoided and that real and virtual worlds now need to be examined in tandem. In an age of growing up digitally, and with national priorities (at least in the United States) towards cyberlearning (US National Science Foundation, 2008), empirical and practical work that engages real and virtual worlds cannot be avoided.

The Overlapping World View: Mutually Constitutive Identities

Virtual and real world identities are mutually constitutive in MMOG play. As Oblinger (2006) states, gamers must immediately recall prior learning from outside venues - life and school - when participating in an online virtual world. That is to say, gamers draw from their real world identities to adapt to and to succeed in a video game. However, there is a limitation of the transfer of an individual's real world identity to the virtual identity. As Stryker (1980) indicated, the human sense of identity is linked to roles, groups, and society. It is a product and process, as the identity is shaped by the larger society (p.163). The transfer of virtual and real identities depends on the social identities in the opposing worlds. Returning to the study by

Figure 1. The continuum of worldviews on real world and virtual identities.

Dodge et al. (2008), the case of Amelia, a fifth grader participating in Quest Atlantis, illustrates how real and virtual world identities are susceptible to overlap. In a wonderful example of how a young girl combines her real and virtual identity, Dodge and his colleagues write:

Amelia demonstrates a fluency with technology showing spontaneity and sociability. For example, she moves comfortably through the Quest Atlantis virtual space, zapping between worlds and often inviting other students to accompany her: "u want to go somewhere fun?";

"Minnie do u want to go to culture world?... follow me." Likewise, Amelia uses several different chat venues to meet friends: she often asks others, "you know AIM talk? do u ever get on?" Indeed, in her online chats, she meets students at other local schools often asking questions to establish whether they have friends in common and even in other cities and countries, a network of online communities. Despite the tension between nature and technology, these examples suggest that technology affords authentic and novel modes of participation. (P.242)

As Goffman (1974) pointed out, in taking on a role, the individual does not take on a personal identity but a bit of social categorization, that is, social identity. On the other hand, in a MMOG, a player may gain an identity as a great warrior; this identity is obviously not transferable to his or her real world identity without some obvious alterations. For that reason, although it is often believed that identity formation occurs whenever individuals participate in a community of practice (Lee, 2007), transforming one's real world identity to the virtual world (or the reciprocal) is limited by some degree to the social consistency between two worlds. The phenomena of playing with external self-presentations can be found in the virtual world quite often (Dinter, 2006). Virtual worlds provide participants with chances of role-playing to try out different roles and identities, even among different virtual worlds. These examples indicate that consistency between two worlds cues the transfer of the user's virtual identity to his everyday life, and transforms his real world identity into one that is more closely aligned to his virtual world identity.

Finally, in support of our proposal, Waskul and Lust (2004) claim, "in role-playing game participants are uniquely situated in the loose boundaries of the person-player-persona trinity" (p.340). Waskul and Lust (2004) define person as the wide variety of identities players occupy and roles they play in everyday life such as students, employees, adolescents, adults, spouses, and parents. Persona is the player's game role while player is gamer who plays the imaginary persona. Therefore, the person-player-persona in some significant ways justifies the need for a middle ground, or overlapping world view. Waskul and Lust (2004) take persona mainly as the product of game rules, which fails to recognize the importance of the virtual social identity in the formation of the virtual identity. Waskul and Lust (2004) briefly touch on the identity transformation idea by stating "fantasy, imagination, and reality are notoriously porous: experience, knowledge, and understanding routinely slip from one to another" (p.339).

Implications for MMOGs in Education: Designing for Identities

As Lee and Hoadley (2007) point out, a major reason that educational games have failed to be effective and relevant is because not enough attention has been given to the formation and effects of virtual identity. On one hand, the freedom to develop a healthy, positive identity in a virtual world should be a general design specification. Contrarily, how one organizes and directs online play to influence offline identify is poorly understood. For MMOGs to have a potentially positive influence on learning, game developers, instructional designers, and teachers might seek ways for social identities constructed in virtual worlds to have positive effects on learners' real world identities. Figure 2 specifies the identity transfer between the virtual world and the real world. There is a certain overlap of a game player's real and virtual identities. The transformation of identity starts with the transfer of the real world identity to the virtual world. Players bring their real world identities, knowledge, and skill into the game world. When these two worlds have high social consistency in terms of the learning objectives, the circle will rotate, in our example in an arbitrary counter-clockwise fashion. If

executed correctly, players might feel more of themselves after playing the game, similar to the expressions captured by Cliff and Amelia above. As a result, indicated by the dotted line in the second image in Figure 2, the overlap between identities increases.

The transformation of identity in real and virtual worlds is an artifact of game play that requires further exploration to understand potential learning and guide future design. There are two key questions that need to be investigated. 1) What aspects of identity can be extracted from the virtual world to have positive, lasting effects on learning? 2) How should developers, designers, and teachers orchestrate virtual play to facilitate positive, healthy identity formation?

Domain related identities are the first and the most important identities that can be extracted from the virtual game world to have positive, lasting effects on learning. As Gee (2007b) pointed out learning in semiotic domains requires taking on a new identity and forming bridges from one's old identities to the new one (p. 45). That is to say, a student needs to be willing to take on the identity related to a learning objective to be successful in learning it. For example, students in a foreign language learning class need to take on the identity as a conversational person to be involving in oral language practice. In addition to domain related identities, identities such as scientific thinker and team worker are also important.

In order to orchestrate virtual play to facilitate positive and healthy identity formation, the game developer and designer should first be clear about what identity they want students to bring out to their real world identities. After that, the designer can design the game roles, rules, and challenges based on the desired identities by taking full

Figure 2. Relationship among three psychological needs

use of the role-playing features of MMOGs. The successes in the game world should be determined by the degree to which that the player is taking the desired identity. Consequently, the learner will feel that she/he should be praised for the virtual character's success or be blamed for the failure (Gee, 2007b, p. 49). NPCs in the game can also be designed to provide positive feedbacks to lead the shared value of the virtual communities toward the desired identities. Meanwhile, teachers can help to increase the transfer of the virtual identity by building the social values in the classroom to be consistent with the social identity in the virtual game world. For example, if the desired identity is "I am a math person". The characters of the game can be those who are normally related to math work in the real world such as mathematicians, engineers, or even a carpenter. All the challenges and rewards of the game should to some extent be closely related to math, though, they can start from very simple one to help the player gradually adapt to the new identity " I know math". The new math identity needs to be reinforced through the entire game play process by various forms of feedback introduced through design. In the end, the point we wish to emphasize has been captured well by Dodge et al. (2008): "educators should endeavor to better understand and utilize the potential of modern media and technologies for the cultivation of self" (p.247).

Conclusion

Our emphasis on real and virtual world identities, and subsequent import for education, is not unique. James Paul Gee, perhaps the most recognizable scholar in this emerging area of games and education, defined three different identities related to playing games: virtual identity, real identity, and projective identity (2007b). His definitions of virtual and real world identities lend credence to the definitions and extensions offered in this paper. The virtual identity is "one's identity as a virtual character in the virtual world" of game while the real world identity is the non-virtual person playing a computer game (Gee, 2007b. p. 47). Gee's focus of the projective identity is different to the overlapping view. Gee defined the projective identity as "to project one's values and desires onto the virtual characters and seeing the virtual
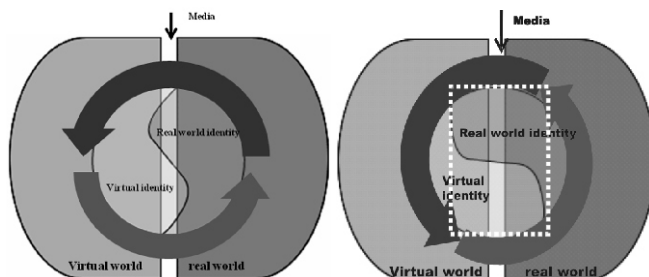
characters as one's own project in the making" (Gee, 2007b, p. 48). The projective identity emphasizes on the player's desire for what the character want to be and to become. The projective identity view slightly neglects the importance of the social identity to the development and transfer of a player's virtual and real world identities. The building of a character to a certain kind of person and history does not solely depend on the player's desire. It is also limited by the social values of the game world. In addition, Gee did not discuss the transfer of the virtual identity to the real world or the contribution of the transfer to the transformation of the player's real world identity, which are believed by the authors of this paper as the conjunction of identity and learning. Players transform their real world identities to recruit a subject related new identity to commit themselves fully to the learning in terms of time, efforts, and active engagement (Gee, 2007b, p. 54).

As Turkle (1994) stated, the cultivation of self or identity involves participation in groups that foster a sense of agency, goals and commitments, meaning construction, and personal learning trajectories. Focal components that have contributed to identity development throughout history entail new forms in the Digital Age. MMOGs provide players with virtual environments for them to explore new relationships, new places and themselves (Cole & Griffiths, 2007). Today's K-12 students are the leading population in online gaming (Annetta et al., 2008). Their cultivation of self or identity can be affected by immersion in the virtual communities. However, a player's virtual and real world identities are neither entirely separate nor identical. Only a certain amount of a player's virtual and real world identities can be transferred to the opposite world. The successfulness of identity transformation to a certain extent depends on social consistencies between virtual and real worlds. Game designers, developers, and teachers should be aware of this and orchestrate virtual play to facilitate positive, healthy identity formation. Meanwhile, the aspects of identity that can be extracted from the virtual world, that have positive, lasting effects on learning should also be considered.

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