

Leveraging Identity to Make Learning Fun:

Possible Selves and Experiential Learning in Massively Multiplayer Online Games (MMOGs)

by Joey J. Lee and Christopher M. Hoadley

Elizabeth Simpson (2005) believes the relevance and engagement demands of today's generation of learners are largely unmet in typically didactic classrooms. Video games, she argues, can provide an opportunity to meet this challenge, since many teenagers already choose to live much of their real social lives in virtual space—exchanging instant messages, meeting friends online, and interacting with real people in virtual game worlds. Video games cross "all cultural and ethnic boundaries . . . [but] not recognizing that these shared experiences exist, public education has failed to provide for the impact of that experience on students' learning" (Simpson 2005, 17). Her argument represents the growing momentum of scholars and researchers who believe video games are the gateway to computer literacy and to better education in general (e.g., Gee 2003; Halverson [2005](#); Foreman [2004](#)). Along with their intrinsically engaging properties, games have been touted for their ability to teach ill-defined problem-solving skills, elicit creativity, and develop leadership, collaboration, and other valuable interpersonal skills via constructivist/active learning and Vygotskian social scaffolding (Prensky 2001; Gee 2003).

Despite researchers' optimism for melding gaming and education, some efforts to bolt learning onto video games—attempts to create edutainment—have been unsuccessful. Educational games frequently consist of repetitive, superficial tasks with limited transfer or poorly disguised attempts to sugar coat learning, which can leave the student feeling patronized or deceived. Recent initiatives to promote stealth education (e.g., the Liemandt Foundation's [Hidden Agenda](#) contest, which awards \$25,000 to the best entertaining game that secretly teaches middle school subjects) have been impressive in their own right, but they do not necessarily meet the video-game generation's demands for relevancy. Repenning and Lewis ([2005](#)), for instance, claim that educational games fail if they do not meaningfully link engagement with learning. We argue that a major reason edutainment has failed to be effective and relevant is because not enough attention has been given to identity—the sense and perception of who one is—or to supporting and leveraging virtual identity enactment to make learning by gaming meaningful.

In this article, we first consider the use of massively multiplayer online games ([MMOGs](#)) as a valuable intervention to support the formation and exploration of identity and the learning opportunities that can result from these experiences. We begin by briefly discussing the importance and role of identity for adolescent learners, and we present MMOGs as environments where students can explore identities as they learn about diversity and technology issues (e.g., "By exploring identities, what can I learn about other people and how they treat me based on my outward appearance?"; "How can technology be designed to bridge the gap between cultures?"). We then highlight a case study in which a small sample of students interacted within MMOGs; these relevant, identity-leveraged experiences within MMOGs directly promoted opportunities for further learning and students demonstrated a high degree of engagement and motivation to learn. Finally, we discuss characteristics of other video games that leverage identity to afford real learning, culminating with the idea that identity may be the key to transcending the engagement and learning trade-off in educational gaming.

Possible Selves and the Problem of Identity Formation

Perhaps more so now than at any other time in history, identity formation has become precarious and problematic for adolescents. Choice has replaced obligation as the basis of self-definition, and as a result, what was once a straightforward process—essentially assuming the culturally prescribed roles of one's parents and grandparents—now carries a high level of personal choice and corresponding long-term

consequences (Cote and Levine 2002). This can lead to identity crisis (Erikson 1968) or the avoidance of responsibility for one's actions, such that older adolescents often resort to strategies to defer or refuse entry into adulthood (Cote and Levine 2002). In addressing such problems, James E. Marcia (1966) introduced an identity status framework consisting of different levels of crisis and commitment related to an adolescent's quest for identity. Marcia, whose influential framework launched a new paradigm with more than 300 empirical studies over the last few decades (Dunkel and Anthis 2001), proposed that identity is resolved by an internal, self-constructed, and dynamic organization of aspirations, skills, beliefs, and other factors. Such research has shed further light on how the development of self entails a complex, shifting process of negotiation during adolescence and early adulthood.

A closely related concept is that of possible selves (Markus and Nurius 1986), a link between cognition and motivation that represents individuals' ideas about what they might become (e.g., a writer), what they would like to become (e.g., a successful entrepreneur), and what they are afraid of becoming (e.g., an assistant professor who does not get tenure). Described as the cognitive manifestation of enduring goals, aspirations, motives, fears, and threats, possible selves affect future behavior; an individual will behave so as to approach or avoid models of other possible selves. Possible selves can motivate an adolescent to learn when something is perceived to be relevant to a desired identity; they provide "an evaluative and interpretive context for the current view of self" (Markus and Nurius 1986, 962). Thus, an exploration of possible selves can help adolescents understand how perceptions of the self and others are socially determined and constrained. We wanted to see how possible selves could be tested within MMOGs by allowing adolescents to actively explore what they perceive to be desirable or undesirable identities. In doing so, we also sought to determine whether identity-based experiences in MMOGs enhance motivation for learning.

MMOGs as Virtual Playgrounds for Socialization and Identity Exploration

MMOGs are rich, pervasive 3D virtual worlds with thousands of participants rendered in real time. The interface allows participants to create and experiment with a second life, experiencing an alternate reality that includes aspects of possible selves, regardless of who one is offline. In a virtual world, people can reinvent themselves to become better, worse, or altogether different from their real-world identities. A normally shy player can become someone with a more attractive physique or a more confident personality. Alternatively, a player can choose to have an ugly physique or to adopt a brash, obnoxious personality. He or she may even change gender, age, or ethnicity, or take the opportunity to investigate seemingly impossible options; for example, a disabled person may have an avatar that can walk or fly. Because the virtual world is free of most of the constraints of the offline world, players can communicate, behave, appear, and be differently in an MMOG.

To accomplish this, a player designs an avatar, a digital representation of an online character, customizing various features, such as gender, skin color, age, genetic makeup, facial features, or body structure ([Exhibit 1](#)). A player has nearly full control over the avatar's aesthetic characteristics and behavior, and other participants in the game are never really sure who the player is offline. Remarkably, an avatar's design, behaviors, and speech still cause stereotyping, prejudice, and preferential treatment (Kolko 1999). For example, studies have shown that female characters receive more assistance, freebies, and handouts than male characters (Yee [2003](#); Griffiths, Davies, and Chappell 2003). MMOGs also can expose avatar builders to expressions of aggression or hate speech that would not ordinarily be directed at them. Avatar creation is a fruitful opportunity for learning, particularly for adolescents who may wish to enact and test possible selves at a time in their lives when their own identities are changing (Dunkel and Anthis 2001). The ease of creating and modifying virtual identities encourages players to think of themselves as "fluid, emergent, decentralized, multiplicitous, flexible and ever in process" (Turkle 1995, 263-264). A MMOG therefore can be used as a unique virtual playground for identity exploration, as the flexibility in role-playing coupled with the dynamic online social interactions affords rich, first-hand, experiential learning. Exploring identity through online avatars is not new (e.g. Turkle 1995; Kolko 1999), but trying to foster learning about and through identity is relatively uncommon (see Bers [2001](#), for one exception).

Case Study: Possible Selves in *There* and *Second Life*

In summer 2005, we designed and implemented a five-week course for 14 high school students as part of a full-scholarship information sciences and technology summer enrichment camp. Our class consisted of 11 boys and 3 girls from various regions across Pennsylvania. Class sessions, which met in a networked classroom with laptops for three hours per session, consisted of instructor-facilitated in-game activities, face-to-face discussions, and reflections in the form of weblog entries and open-ended questionnaires ([Table 1](#)). We were particularly interested in how the teenagers explored possible selves in MMOGs, and what they learned about identity, culture, stereotypes, and prejudice in the first-hand experiential context of a virtual world. As a result, the in-game tasks and activities often served as a springboard for class discussions and assignments.

For the in-game tasks, we used two virtual environments: Makena Technologies' social MMOG [There](#) and Linden Labs' [Second Life](#), both chosen for their low cost, relatively shallow learning curve, flexibility in avatar customization, and high degree of socialization. The virtual environments were also ideal due to their modern-day setting and realistic avatars with no rigid objectives or winning outcomes (e.g. no combat, quests, or dying as found in several other MMOGs). The focus of these games is oriented towards exploring new identities, sharing experiences, and interacting with others.

In addition to promoting cross-cultural reflection, the course explored issues related to interaction design and the importance of social context in dealing with information technology problems. In terms of deliverables, the students were assigned a final design project that sought to synthesize what they had learned. Students were asked to choose a target audience different from themselves (in age, national origin, or some other respect) and design a technology to address this audience's need. Thus, the learning goals for the course included a better understanding of diversity as well as the cultivation of user interface design skills. By leveraging the opportunities afforded by virtual identities, the design of the course aimed to open students' eyes to move beyond prejudgments and stereotypes based solely on external appearances and toward a greater sense of agency.

Students' Limited Awareness of Diversity

At the beginning of the course, students were given a pre-test with open-ended questions and five-point Likert scales that assessed their awareness of diversity issues (for instance, "How diverse is your high school?" or "How often do I challenge others when someone makes a racial, ethnic, or sexually derogatory comment?"). Students were also asked to identify three key words to describe their current views of themselves in a weblog entry, along with a description of their cultural backgrounds, what their high schools were like, and their current understanding of culture. In these weblog entries, many of the students complained of a lack of diversity in their high schools or hometown environments ([Exhibit 2](#)). Notably, the students had a limited conceptualization of diversity at the beginning of the course; their observations typically adopted a notion of diversity based solely on racial demographics. We were interested to see whether their understanding of self, perceived agency, and cultural dimensions would change over the duration of the five weeks and how games that leverage identity could play a part in maintaining engagement and learning.

Experiential Learning in MMOGs

One in-game activity involved *gender bending*, or the popular strategy of interacting with others using an avatar of a different gender from one's real-life gender. The students were asked to explore the social construction of gender firsthand in the virtual worlds by observing the treatment they received while posing as the opposite gender. The activity also served as an "opportunity to explore conflicts raised by one's biological gender" (Turkle 1995, 213). Consistent with other gender-bending studies (Yee [2003](#); Griffiths, Davies, and Chappell 2003), boys who played as girls observed more incidences of courtesy, flirtation, and in some cases, sexism. In exploring possible selves, students observed how their success or failure often depended

on arbitrary social perceptions rather than their individual merits. After much experimentation, students wrote detailed observations in their weblogs regarding the discrimination and preferential treatment that takes place within virtual worlds. One student, Bill, observed:

There is discrimination based on perceived qualities, but not real ones. "Cool" avatars are more popular. Ugly ones lead to being unpopular or disassociated. . . . I designed my avatar to be very unattractive, and as I would walk up to groups of people, they would all scatter and avoid talking to me. Even though stuff like digital money and appearance isn't real, it still affects the way people respect you and interact with you in the game.

By taking on different identities in MMOGs, students learned from various perspectives, and they learned to think beyond themselves in an experiential, tangible way. While interactions within MMOGs comprised less than 25% of the overall course, they served as a springboard to a host of other topics. Class discussions were rich as students shared experiences on how cultural issues in the real world translate into virtual worlds and vice versa. Meanwhile, students learned not only about diversity, but also about user-centered design principles, while discussing how to negotiate gender, cultural, and digital divide issues in order to build technologies for others ([Exhibit 3](#)).

Assessments of Student Learning and Student Motivation

At the end of the course, we gave students a post-test to measure the extent of their learning and the degree to which the virtual gaming environment enhanced their motivation. Results from the post-test suggested that learning took place. Students showed significant pre-post gains on this instrument in a repeated measures two-tailed t-test; all but one student had an increased score, and student definitions of diversity moved beyond essentialist categories to more sophisticated, nuanced definitions (Lee and Hoadley [2006](#)). Several students also reversed their positions on the perceived lack of diversity in their own high schools ([Exhibit 4](#)).

Were MMOGs able to sustain engagement and motivation as teaching tools? At the end of the five-week course, students were highly enthusiastic about using MMOGs in general, calling them "fun, engaging . . . amazing learning tools" with "the potential to teach many things." Using a five-point Likert-type scale on the post-course evaluation, we found that the mean student rating for the statement "MMOGs are fun" was 4.1 (SD=0.73), while "useful for educational purposes" and "useful for exploring culture" also scored highly, with response rates of 3.71 (SD=0.579) and 3.79 (SD=0.469) respectively. Moreover, in their open-ended feedback, students clearly indicated that they found MMOGs engaging, versatile environments for learning about a variety of subjects. For example, a student named Bill commented on the pedagogical value of such gaming scenarios: "These games provide a risk-free environment for exploration and discovery. When coupled with course material correctly, they can be used for learning." Students commented on how they enjoyed the immersive and interactive properties of the technology, while also recognizing the value of having a technology that allowed them to experience the learning objectives firsthand. Although they did not comment explicitly on the role that identity played in sustaining their interest, it was clear that the distinctive benefits they noted were rooted in this vital aspect of the gaming environment. For example, a student named Mike observed: "Yes, a virtual world is useful for teaching and learning because they let people experience things firsthand and that is the best form of education."

Discussion: Engaging Learners via Games That Leverage Identity

As suggested by our experience with MMOGs, effective, engaged learning occurs in games that take identity into account from the ground up. Merely applying a superficial sugar coating of game-like activities to educational tasks like the repetitive math tasks found in games like *Math Blaster* or *Number Munchers* is not motivating or engaging in the long run, since students may quickly lose interest due to unmet relevance needs (Squire and Jenkins [2004](#)). In contrast, MMOGs promote learning by motivating and engaging

students through the direct leverage of identity enactment and role play; that is, they deeply recruit an individual's identity while taking on the identity of a character in a game. This identity adoption process trains students to solve problems from the point of view of the roles they are assuming, opening them up to new perspectives and challenging them to think in new ways.

These advantages may be noted in various degrees across a variety of MMOGs and virtual gaming systems, including commercially available games that are not explicitly educational. Such games allow students to think like different kinds of people—urban planners, scientists, doctors, engineers, or even people of another time period or civilization—and learning takes place during this enactment. For example, in the commercial game [IndustryPlayer](#), players assume the roles of virtual entrepreneurs as they seek to compete with one another within the global marketplace. In [Revolution](#), a game produced by the MIT-Microsoft [Games to Teach Project](#), each student is given a specific role in a middle-sized town during the American Revolution, and each person's actions are significant to the events of the story that unfolds. In each case, taking on a role and identity causes the learner to think as if he or she were actually present. What factors would one have to consider? What would be one's interests, values, concerns, thoughts? Thinking from an alternate point of view and experiencing events situated in context helps students maintain interest and facilitates learning while the student grows into the alternate identity.

The notion that identity provides the most vital key to finding an effective trade-off between engagement and learning in game-based environments is consistent with related findings by other researchers. Shaffer (2005) argues that epistemic games can be created in which people learn to work and think like doctors, lawyers, scientists, architects, journalists, and thus develop skills, habits, and understandings in the process. Identity formation occurs whenever individuals participate in a community of practice; people learn to become members of communities and, in the process, learn the practices of those communities (Wenger 1998; Lave and Wenger 1991). Nasir (2002) describes how alignment with identity can make the difference between an activity students willingly undertake and learn for (such as learning mathematics in order to play dominoes or in order to keep complex basketball statistics) and an activity students may reject or "fail" at (such as learning mathematics in order to pass tests in school). It is noteworthy that although Nasir's examples of activities that promote learning do not include information technology, they do foster a level of engagement that leads to them being called "play" or "games." One of the defining features of a game that successfully motivates learning is that it takes identity and possible selves into account; the player is able to explore aspects of one's identity (even if unconsciously so) and through these relevant experiences of who one could become, one is motivated to learn associated skills.

Conclusion

We are not yet at the point where we can always identify what types of environments would encourage learners to adopt the identity of an expert in some subject. However, allowing players to construct identity is an important way to keep activities engaging and, if we believe Nasir and other researchers, good for learning as well. As educational tools, MMOGs can provide realistic scenarios and a safe space for learners to test and explore possible selves, including selves that are competent in the domain being taught. Identity thus may be the key to the balance between engagement and learning, allowing the two to support, rather than compete with, each other. In this regard, the potential value of such technology can best be understood in terms of a fundamental precept that educators already recognize: When students have a direct investment in the learning experience, they will more readily embrace their new knowledge as a vital component of their own personal growth and development.

[Editor's note: This article was adapted in part from Joey J. Lee and Christopher Hoadley's presentation "Online identity as a leverage point for learning in massively multiplayer online games (MMORPGs)," delivered at the 6th IEEE International Conference on Advanced Learning Technologies ([ICALT06](#)).]

References

Bers, M. U. 2001. Identity construction environments: Developing personal and moral values through the design of a virtual city. *Journal of the Learning Sciences* 10 (1): 365-415.

<http://ase.tufts.edu/devtech/publications/ICE-values-design.pdf> (accessed July 3, 2007).

Cote, J. E., and C. G. Levine. 2002. *Identity formation, agency, and culture: A social psychological synthesis*. Mahwah, New Jersey: Lawrence Erlbaum.

Dunkel, C. S., and K. S. Anthis. 2001. The role of possible selves in identity formation: A short-term longitudinal study. *Journal of Adolescence* 24 (6): 765-776.

http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6WH0-45S4RN3-7&_user=10&_coverDate=12%2F31%2F2007&_rct=1&_cc=0&_cc6e0f36b8d83b269135d7683aeee1 (accessed July 3, 2007). [Editor's note: Access to full text requires a paid subscription or single-article access fee.]

Erikson, E. H. 1968. *Identity, youth and crisis*. New York: W.W. Norton.

Foreman, J. 2004. Video game studies and the emerging instructional revolution. *Innovate* 1 (1).
<http://www.innovateonline.info/index.php?view=article&id=2> (accessed July 3, 2007).

Gee, J. P. 2003. *What video games have to teach us about learning and literacy*. New York: Palgrave Macmillan.

Griffiths, M., M. Davies, and D. Chappell. 2003. Breaking the stereotype: The case of online gaming. *CyberPsychology & Behavior* 6 (1): 81-91.
<http://www.liebertonline.com/doi/abs/10.1089/109493103321167992> (accessed July 7, 2007). [Editor's note: Access to full text requires a paid subscription or single-article access fee.]

Halverson, R. 2005. What can K-12 school leaders learn from video games and gaming? *Innovate* 1 (6).
<http://www.innovateonline.info/index.php?view=article&id=81> (accessed July 3, 2007).

Kolko, B. E. 1999. Representing bodies in virtual space: The rhetoric of avatar design. *The Information Society* 15 (3): 177-186.

Lave, J., and E. Wenger. 1991. *Situated learning: Legitimate peripheral participation*. New York: Cambridge University Press.

Lee, J. J., and C. Hoadley. 2006. Ugly in a world where you can choose to be beautiful: Teaching and learning about diversity via virtual worlds. In *Proceedings of the 7th International Conference of the Learning Sciences (ICLS06)*, ed. S. A. Barab, K. E. Hay, and D. T. Hickey, 383-389. Mahwah, NJ: Lawrence Erlbaum Associates. <http://www.tophe.net/papers/Lee-Hoadley-ICLS06.pdf> (accessed July 3, 2007).

Marcia, J. 1966. Development and validation of ego-identity status. *Journal of Personality and Social Psychology* 3 (1): 551-558.

Markus, H., and P. Nurius. 1986. Possible selves. *American Psychologist* 41 (1): 954-969.

Nasir, N. I. S. 2002. Identity, goals, and learning: Mathematics in cultural practice. *Mathematical Thinking & Learning* 4 (1): 213-248. http://www.learonline.com/doi/abs/10.1207/S15327833MTL04023_6 (accessed July 7, 2007). [Editor's note: Access to full text requires a paid subscription or single-article access fee.]

Prensky, M. 2001. *Digital game-based learning*. New York: McGraw-Hill.

Repenning, A., and C. Lewis. 2005. Playing a game: The ecology of designing, building, and testing games as educational activities. Paper presented at ED-Media 2005, World Conference on Educational Multimedia, Hypermedia, & Telecommunications, Montreal, Canada, June.
<http://www.cs.colorado.edu/~rale/papers/PDF/PlayingGameEDmedia05.pdf> (accessed July 3, 2007).

Shaffer, D. W. 2005. Epistemic games. *Innovate* 1 (6).
<http://www.innovateonline.info/index.php?view=article&id=79> (accessed July 3, 2007).

Simpson, E. 2005. Evolution in the classroom: What teachers need to know about the video game generation. *TechTrends: Linking Research & Practice to Improve Learning* 49 (5): 17-22.

Squire, K., and H. Jenkins. 2004. Harnessing the power of games in education. *Insight* 3 (5).
<http://website.education.wisc.edu/kdsquire/manuscripts/insight.pdf> (accessed July 3, 2007).

Turkle, S. 1995. *Life on the screen: Identity in the age of the Internet*. New York: Simon & Schuster.

Wenger, E. 1998. *Communities of practice: Learning, meaning, and identity*. New York: Cambridge University Press.

Yee, N. 2003. The demographics of gender bending. The Daedalus Project.
<http://www.nickyee.com/daedalus/archives/000551.php> (accessed July 3, 2007).

COPYRIGHT AND CITATION INFORMATION FOR THIS ARTICLE

This article may be reproduced and distributed for educational purposes if the following attribution is included in the document:

Note: This article was originally published in *Innovate* (<http://www.innovateonline.info/>) as: Lee, J., and C. Hoadley. 2007. Leveraging identity to make learning fun: Possible selves and experiential learning in massively multiplayer online games (MMOGs). *Innovate* 3 (6). <http://www.innovateonline.info/index.php?view=article&id=348> (accessed April 24, 2008). The article is reprinted here with permission of the publisher, [The Fischler School of Education and Human Services](#) at [Nova Southeastern University](#).

To find related articles, view the webcast, or comment publically on this article in the discussion forums, please go to <http://www.innovateonline.info/index.php?view=article&id=348> and select the appropriate function from the sidebar.