Social Learning Theory in *Second Life*

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Abstract

One of the current trends in distance education is the use of multi-user virtual environments (MUVE) as a training platform. MUVEs are being used for both formal and informal online learning. *Second Life* is a popular MUVEs being used for education today. Teaching and learning in *Second Life* requires a paradigm shift by educators, researchers, and learners who must adapt to a new environment of teaching and learning. Although things are done differently, many traditional learning theories can apply to *Second Life*. Examples of Albert Bandura's social learning theory in *Second Life* are explored in this paper.

Keywords: Second Life; social learning theory; MUVE; multi-user virtual environment; virtual worlds; Bandura

Introduction

Albert Bandura's (1977) social learning theory is based on the idea that we learn from our interactions with others in a social context. Separately, by observing the behaviors of others, people develop similar behaviors. New concepts of social learning are being formed as new trends in distance education programs emerge. The rise in popularity of these programs increases the physical distance between educators and students. With this in mind, relying on in-person classroom and face-to-face interactions to provide all of social learning needs is a thing of the past. How can people learn by observation and interaction in a distance education environment where there is no in-person contact taking place?

In keeping with this trend, technologies such as multi-user virtual environments (MUVEs) are skyrocketing in popularity among educators today (Harrison, 2009a). One of the most widely used MUVEs, *Second Life*, boasts more than 400 colleges and universities participating in delivery of in-world educational programs or having a presence in *Second Life* (Campusin3D.com, 2009). With this new platform for distance education come new challenges for educators to discover how social learning happens in virtual worlds. Analyzing how people learn and merging that information with distance education and blended learning contexts can be a challenge for educators. Still, it is being done, and best practices are starting to emerge. This paper examines how social learning theory is manifested in *Second Life* for higher education.

Second Life

Second Life is a three-dimensional, virtual world where users are represented by animated avatars that walk, fly, teleport, and talk to each other. After creating their in-world avatars, residents (i.e., users), can purchase and create real estate, homes, cars and other items in-world by using graphics tools and currency created by Linden Labs, the company that created *Second Life*. It is a 24/7, persistent, computer-generated, virtual world where users can log in at any time, day or night no matter where they

are. Although *Second Life* evolved from the concept of massive multi-player online role-playing games (MMORPG), such as *World of Warcraft* and *EverQuest*, it is not a game. There are no opponents to beat, or pre-defined goals (Helmer & Learning Light, 2007). Instead, it is a virtual world where residents create the content. It's a place where students can fly to class, a wheelchair bound person can become a dancer, or a person can alter their gender or appearance with a few clicks of the mouse. It's a fantasy world where a person can become whomever he or she wishes.

Second Life and Education

Learning in *Second Life* is a fairly new trend and is uncharted territory for many students and instructors. Both groups need to re-examine how to learn and teach. In order to do so, they need to immerse themselves in the environment by becoming a resident, attending classes, playing, observing, and making mistakes. Social learning theory applies to *Second Life* (and MUVEs in general), although a bit of a paradigm shift must occur away from the technology and tools used in traditional distance education and face to face learning. In understanding why a paradigm shift must occur, one has only to observe the differences in interaction of people and objects in-world and real life. The objects, tools, and software used are very different for in-world teaching than in real life. In order to improve *Second Life*'s effectiveness as an educational platform, designers, students, and instructors must open their minds to new things. For example, avatars are not real people, flying and teleporting are not the norm in real life, nor is an avatar that might attend class as a furry (animal). *Second Life* is a different world.

Social Learning Theory and *Second Life*

Some concepts of social learning theory are applicable to education taking place in *Second Life*. There are three key components to Bandura's social learning theory (Abbott, n.d.) that are manifesting themselves in the *Second Life* environment: observational learning, imitation, and behavior modeling (Bruner, 1990; Wood, Bruner, & Ross, 1976).

Bandura's social learning theory is based on the idea that observational learning involves the fact that humans often cannot learn for themselves.

> An alternative theory which is not strictly *constructivist* or *behaviourist* is Bandura's *Social Learning Theory.* This theory combines *behaviouristic* reinforcement theory and *cognitive* psychology to describe the learning process in individuals. Bandura emphasizes the personal or self-system which controls learning by influencing attentional processes, schematic processing of experiences, memory representation and reconstruction, cognitively-based motivation, emotion activation, psycho-biologic functioning and the ease and skill to which these are employed to deal with everyday life experiences (Bandura 1986). The learner has the power to influence their own learning in new situations by controlling the environment around them — whether that environment is imposed, selected or constructed (Bandura 1999). (Hathaway, Muse, & Althoff, 2007, p. 3)

Learners observe behaviors by others in order to start the learning process. This happens in *Second Life* constantly, especially when faced with a new activity such as becoming a student. It is important to observe the behavior of others (also called "lurking") before taking on new activities in *Second Life*.

The next concept in Bandura's theory that manifests in *Second Life* is *imitation*. After observing the behavior of others, people assimilate and imitate that behavior, especially if their observational experiences are positive ones or include rewards related to the observed behavior. According to Bandura, imitation involves the actual reproduction of observed motor activities. In *Second Life* this could be as basic as learning how to navigate an avatar so as to not fall off a wall or into a body of water.

The third component of Bandura's theory that happens in *Second Life*, is *behavior modeling*. behavior modeling, the learner takes everything positive about the observed and imitated behavior, and begins acting according to the experiences (Foster 2006). There is plenty of opportunity for all this to happen in *Second Life*.

Second Life, according to Cohen (2006), is a Petri dish for teaching and learning. It is new, exciting, and a virtually untapped medium where both formal and informal teaching and learning are happening.

Second Life makes it easy to design and use role playing and simulation tools for many different training topics. Imagine a psychology student being able to enter a multimedia barrage of visions that imitate those experiences of a schizophrenic patient. How about a role playing scenario where a student becomes an OSHA security official? These simulations and more happen in-world currently (see, for example, Graham, 2007; & Cook, 2006). MUVEs allow educational professionals to do things they've always wanted to do. They can tear down classroom walls and the confinements of face-to-face learning and create a fun learning environment with a spirit of collaboration. The possibilities for educational success are virtually endless.

Some proponents of education in *Second Life* include Harvard and Stanford universities. Both of these well respected universities among many others, have fully-funded, virtual campus extensions in *Second Life*. It is the forward thinking mind-set of these pioneer organizations that others have and will continue to follow. They provide validity for others to follow in using *Second Life* as a viable teaching platform. (see, for example, Harrison, 2009b; Jennings & Collins, 2007; Lamb, 2006; Wriedt, Ebeling, & Reiners, 2008).

Damian Hart, an instructor at University of Baltimore is currently teaching a hybrid course in applied simulation utilizing *Second Life* and in-person classroom meetings with students. He believes that today's students are gamers (Hart, April 4, 2009, personal communication). When Hart teaches in *Second Life*, he is actually using a platform familiar to today's generation of students. The students meet at his in-world beach house and are given in-world assignments. One such assignment, a treasure hunt, requires students to search for graphical elements such as new hair, clothes, etc. Students teleport or fly to other in-world locations and report back to the beach house with the items they found. He uses the items the students have brought back to teach texture and color simulation techniques. Hart also takes his students on field trips to in-world places like the Van-Gough museum where students can actually step into, and become a part of, the artist's masterpieces Segneri, 2008).

Why is *Second Life* gaining popularity? For many students and teachers it is fun and combines some of the best of all teaching tools from distance education, face-to-face, and virtual reality to become a viable educational medium with virtually unlimited capabilities. And, let's not forget the convenience for instructors, designers and students all over the planet who can login from virtually anywhere at any time.

Observational Learning

Second Life is a great platform for observational learning to take place. There are educational programs running at virtually all times of the day, that a convenient opportunity to attend an in-world class is almost always available. Attending an in-world class is a great way to observe and learn from other *Second Life* residents. Instructors can observe other instructors, designers can learn about the tools others have used, and students can observe acceptable behavior from other students.

Of course, there are drawbacks to the observation process. For example, students observing and imitating other student behavior can be detrimental for an in-world class. Because *Second Life* is a world where residents rule, there are no definitive rules about behavioral expectations. Student behavior in an in-world class can be unpredictable, and undesirable to instructors and other students. If students observe undesirable behavior it has the potential to be repeated. The idea of self-control is important here (see for example, Dewey, 1939; Martin, Burger, Elias-Burger & Mithaug, 1988). Imagine a student (avatar) coming to class naked. How about students slumping over in class (this happens when an avatar is inactive for a period of time)? Not all behavior is acceptable in *Second Life*. However, the benefits can outweigh the disadvantages. Such problems are usually easily fixed by teachers taking initiative and composing a set of classroom rules (such as: "do not come to class naked") for their students.

Designers have plenty to observe in *Second Life*. The concept of community knowledge and sharing of resources is fairly ubiquitous in *Second Life*. People are often more helpful in-world then in real life (Brdicka, 1999). Researchers of instructional design in *Second Life* are the pioneers that are sharing resources and data to pave the way for successful instructional design in-world.

Lisa Dawley, a professor at Boise State University, has been researching the teaching and learning potentials of *Second Life*. All of the work she is doing takes place on EdTech Island, an in-world learning place for instructors and instructional designers, fully funded by her university. Dawley's research to date

has included how students move through space in *Second Life*, and tracks patterns of movement (on EdTech Island) and the most popular learning prims (*Second Life* learning objects). As a result of her research, Dawley is developing new instructional design methodology and practices for use exclusively in *Second Life* (Dawley, 2007). The most valuable part of Dawley's research is that she is sharing this information and teaching other designers how to best use her data to build effective learning environments in-world. Dawley's philosophy of sharing with others in-world is this: "What we do with our students doesn't just need to be for our students…it can be made available to help other teachers…and provide an open source" (Dawley, 2007).

Professor Dawley is not the only educator sharing information in *Second Life* for other designers to observe and simulate. There are all sorts of groups and lists that a resident can join such as the "*Second Life* Research List" (SLRL). This scholarly discussion list allows in-world researchers to share information about their in-world findings. Many new residents, interested in education and research in *Second Life*, will join a discussion, group, or course in-world just to lurk and observe. By doing this they can use the knowledge gained by observation to move on to the next important stage of social learning theory, imitation.

Imitation and Behavior Modeling

Bandura's second and third stages of social learning, imitation and behavior modeling, will occur if a person observes positive, desired outcomes in the first stage. If, for example, an instructor attends and observes a course in-world and is entertained, informed, and approves of the way students act, they are more likely to want to teach a course in-world themselves. They can then use the behavior they experienced to imitate and model other instructors' teaching styles in-world.

Because of the open source format, and community sharing that takes place among designers and researchers in *Second Life*, the imitation and behavior modeling stages of social learning are more evident for those groups. According to Brown and Adler (2008), "Open source communities have developed a well-established path by which newcomers can 'learn the ropes' and become trusted members of the community through a process of legitimate peripheral participation". This is something that does not happen as often in real-life educational settings because learning the ropes in real-life requires a lot more effort than just logging in. In real-life, there are conferences, travel, meetings, etc. required. All of which are time consuming and expensive. Since actions and best practices are shared and easily observed, other designers and researchers will have many behaviors to imitate and model. The pioneers in these fields are paving the way.

For student residents in *Second Life*, imitation and behavior modeling can take on a very different shape. Students are exposed to many types of environments other than ones designed for learning. As in real life, there are schools, social clubs, bars, museums, parks, beaches, etc. in *Second Life*. Because the content of *Second Life* is user generated, their target audience is everyone. Students in remote areas can be exposed to so many more learning opportunities than they would have otherwise. The ability to fly, teleport and observe behaviors in places students wouldn't normally be exposed to in real life is commonplace in *Second Life*, and can affect the imitation and modeling stages of social learning for students in a positive way.

If students have a positive experience with their observed behaviors in non-educational environments, as in real-life, they are more likely to imitate them. On the other hand, if students observe, imitate, and model negative or non-desirable behavior, learning can most definitely be affected by it. The imitation and modeling of these negative behaviors may cause distraction and disruption to learning that should not happen, and could inhibit the learning process.

Attitudes and Emotional Reactions

One important concept is the observation and modeling of attitudes and emotional reactions. How does this concept manifest in *Second Life*? That question is more difficult to answer for in-world, or any distance education environment that does not include in-person contact between instructors, students, designers, and researchers.

Observing attitudes and emotional reactions is easy in real life. One can usually do this by looking at and talking to another person. With the avatar residents of *Second Life,* the expression of attitudes and emotional reactions does not exist. There are ways to imitate attitudes and emotions using machine generated objects such as the clothes we wear and our physical construction of our in-world avatars. But how do residents really show true emotions in-world? It generally cannot be done. The absence of attitudes and emotional reactions are in *Second Life* prevents social learning theory from being 100% manifested in 3D, virtual worlds.

Conclusions

Second Life is distance education 2.0. Development of MUVEs will take distance education to new heights over the next decade. In-world educational events will be the primary source for distance education. There will also be many more "worlds" to explore. *Second Life*, or what supersedes it, will be very different than today. People will be residents of multiple worlds, and all those worlds will be connected together, similar to the way hyperlinks take us from website to website today in the flat world. Advances in technology will allow us to not only see and hear things in *Second Life,* but also to feel and smell things, too, that we may never come in contact with in the real world, because the expense or time commitment involved. One intriguing question is: how can educators present problem-solving in an environment without realistic consequences. One answer, and major advantage, is that is one of the major goals of any simulation, in Second Life or elsewhere.

Online learning in a 3-D environment has limitless potential for formal and informal learning and will change the future of distance learning as educators rethink their methods of guiding learners. In comparing activities in *Second Life* to real life using Bandura's social learning theory, the only things that cannot be observed, imitated and modeled in respect to distance education are attitudes and emotional actions. Everything else can be accomplished in-world. Trips to museums, theaters, conferences, school, and many other places can be accommodated in-world because of the technology of digital imitation and design. Because of that, another benefit to in-world learning is that it can be a more cost effective alternative to distance education. Imagine a world where the only activities that require leaving a computer are ones that satisfy emotional and physical needs. Some of those needs include exercise and sports, food, experiencing nature, romance, physical closeness, family and peer interaction, and physical body maintenance. Real life would become a life of convenience, satisfaction, and of course, death. Everything else could be done online.

Second Life is a great example of social learning theory in action, although there are some components that cannot be satisfied in-world. Technologically, it is an open source environment that fosters observation, imitation and modeling behaviors. Residents are constantly learning from each other through interaction. The absence of the ability to observe attitude and emotional reactions of others is perhaps the only barrier to social learning theory being fully manifested in *Second Life*. There is no doubt that interacting in-world requires a user to shift his or her thinking about human relations and the social world. However, it is not too difficult or time intensive to get accustomed to interacting in-world. Although the tools, technology, resident identities, best practices, learning styles, teaching techniques, etc. in-world are different than any other distance education platform, adjustment usually comes fairly quickly.

As MUVEs continue to grow in popularity, there may be more opportunities for enhancements and expansions of the social learning theory. In fact, educators, instructional designers, and researchers are already forming new pedagogies and discovering patterns of learning and learning tools that have not even been tapped in real life distance education environments. The possibilities for exploration and development of new practices in distance education using MUVEs is worth exploring.

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