Libraries in Second Life: New Approaches to Education, Information Sharing, Learning Object Implementation, User Interactions and Collaborations

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ABSTRACT

Three-dimensional virtual worlds such as Second Life continue to expand the way they provide information, learning activities, and educational applications. This paper explores the types of learning activities that take place in Second Life and discusses how learning takes place, with a view toward developing effective instructional strategies. As learning objects are being launched in Second Life, new approaches to collaboration, interactivity, and cognition are being developed. Many learning-centered islands appeal to individuals who benefit from interaction with peers and instructors, and who can access learning objects such as information repositories, simulations, and interactive animations. The key advantages that Second Life offers include engaging and meaningful interaction with fellow learners, media-rich learning environments with embedded video, graphics, and interactive quizzes and assessments, an engaging environment for simulations such as virtual labs, and culturally inclusive immersive environments. However, because of the steep learning curve, technical difficulties, and cultural diversity, learners may become frustrated in Second Life. Since Second Life is social learning environment that emphasizes the creation of a self, effective learning requires step-by-step empowerment of that new, constructed self.

Key words: virtual worlds, simulations, Second Life, online learning, learning objects, repositories

1. INTRODUCTION

Origins
A multi-user virtual environment (MUVE), Second Life arrived on the scene in 2003 when Linden Lab, a small virtual world platform software developer, made the interface available for free through its client program, Second Life Viewer. Users, or residents, develop their own avatars in which they travel to different worlds, or "islands" which have been customized by developers who modify the environment. The Second Life virtual worlds have been very popular with learning organizations because the rich, immersive environment encourages action and interactivity, which overcomes an often dehumanizing learning management system approach.

Attributes of the Worlds
Second Life islands typically consist of a combination of indoor and outdoor venues or environments, many of which are modeled on the real world. For example, the University of Delaware's site is a combination of the real and the fantastic, with replicas of major buildings (library, stadium, art galleries), but with a fanciful look at meeting places under the ocean, where the school's marine biology studies and labs are highlighted. The community-driven experience encourages new residents

Characteristics of Users (Residents)
Residents of Second Life often mask their real world identity, and prefer to live only in the name of their avatar. The avatars are customized, often with extremely elaborate and/or expensive items traded or purchased.

2. LEARNING OBJECTS AND ACTIVITIES IN SECOND LIFE

Owners of real estate in Second Life take pride in creating individualized experiences and highly customized 3D worlds. Nevertheless the varieties of worlds tend to fall into categories, many of which are identifiable by the learning objectives and desired outcomes.

Libraries and Portals to Digital Repositories
Second Life islands that have been built into libraries and learning object repositories are appealing to developers because they represent an opportunity to bring together community-forming behaviors and objects that can be used to create knowledge. The community environment encourages individuals to emulate each other, and to experiment and try different techniques. Libraries can be organized around specific collections, topics, and purposes. Visitors to the library can access the information, download it, work with it, and share it with others. Universities, associations, and public libraries have Second Life islands which contain links and interfaces to their digital collections.

Laboratories
Research universities, learning organizations, associations, government research centers and think tanks encourage people to visit their islands, where they can participate in what can be viewed as an interactive, immersive learning experience. The hands-on feel of science museums is often replicated (Swanson, 2007). . The beauty of Second Life is that visitors can repeat experiments, revisit demonstrations, and participate in collective events and lectures. In addition, they can sometimes pick up free trinkets and items of clothing to wear, building a certain cachet and coolness. For example, the Centers for Disease Control has a series of virtual labs which range from HIV/ AIDS awareness to tropical disease information.

Simulations and Skills-Based Knowledge Transfer
Health Education, Virtual Nursing: Educators have become excited about the idea of having the ability to teach allied health topics within a virtual world. It is an excellent opportunity to

use visual learning, and also to situate the concepts within a realistic scenario. Sometimes becoming very close to a simulation, role-playing within the island allows nursing and allied health students to practice decision-making skills, identify equipment, analyze test results, and react to realistic situations. Tacoma Community College has developed a nursing role-playing island in Second Life. HealthInfo Island offers a combination of information repositories and interactive animations. It is possible to practice skills such as reading monitors, while also being able to access medical information.

Immersion Language Learning
A number of islands are dedicated to learning languages. For example, the Instituto Cervantes includes language labs and allows individuals to have access to learning objects (quizzes, vocabulary drills, audio comprehension, live practice). Other islands allow tutors to make appointments in rooms and to charge for language instruction. Community-based language instruction encouraged innovation and entrepreneurship. Chinese language instruction is offered by numerous Confucius Institutes sponsored by universities nationwide and the Chinese government.

Lectures, Concerts, Rallies, Events
Many islands in Second Life include pavilions, theaters, concert halls, and meeting spaces, which allow a large number of residents to interact. It also gives individuals the opportunity to gather together in a single place to watch a presentation through streaming media (synchronous or asynchronous), or to participate as a fellow resident makes a presentation. The community atmosphere, with the opportunity to communicate with other residents, access information, and to interact with learning objects (ranging from graphics, videos, and small simulations), makes the experience unique. Elements of what Guy deBord has referred to as "the spectacle" combine with a sense of a constructivist world, constantly in a state of flux and becoming.

3. ADVANTAGES AND DISADVANTAGES OF LEARNING IN SECOND LIFE

A number of theories explain how and where learning takes place in Second Life. They also help explain how and why some learners may face difficulties when participating in instructional events in Second Life.

Advantages

Learning Communities and Social Learning: Developing communities of purpose and learning communities allows residents with shared interests to deepen their knowledge, to practice what they know, and to share and collaborate with fellow learners. The experience can be very motivating because it contains built-in affirmation(s).

Need for Affiliation: While McClelland (1983) has described the need for affiliation, Argyris (1964) has taken the idea of social learning and motivation a step further with his "double loop learning" theory. For Argyris, the social conditions of a group make it both acceptable and desirable to self-examine and to subject oneself to a group review. The need for affiliation becomes bundled with the organizational / community self-consciousness, which suggests that Second Life enactments are effective because they give people the time and

space they need to posit a certain existential position, and then to step back and question themselves, even maintaining the possibility of self-correcting and modifying oneself. The fundamental exigency is the need to create an identity (via an avatar) that meshes with a group identity that imparts a sense of beingness that allows the encoding of schema, or knowledge structures. For example, the Virtual Neurological Education Center (VNEC) island in Second Life (Boulos, etal, 2007) becomes in some ways a living schema.

Self-Determination: One of the key advantages of the Second Life virtual world is that residents can control their own movements (depending on their level of skill). They can go where they want to go. Self-determination (Deci & Ryan, 2004) is reinforced, which opens the residents to a positive situation of receptivity to intellectual risk-taking, schema-building, and learning.

Self-Efficacy: Self-efficacy refers to one's belief in one's own ability to perform at the level that they themselves define. Self-efficacy is related to self-confidence, except that it is usually tied to very specific performance criteria (Bandura). The performance criteria may be attached to a one-time evaluation or assessment. For that reason, the importance of self-efficacy can easily be overlooked. Nevertheless, self-efficacy is important, and it is important to keep in mind that Second Life requires a level of technical skill and acumen that usually far outstrips that of new residents.

Engaging: The interface of Second Life is very engaging. Some of the islands are masterful works of art; others have intriguing learning objects and events of instruction that make the residents / learners pay attention.

Connected to Prior Learning: The islands that are extremely referential – that is to say that they seem to take a look back even as they are moving forward – are often asking the resident to analyze oneself and to find the concrete experiences and details that will bring the class away from abstraction and into a realm of blended elements.

Simulates Real-World Environments: Islands in Second Life often contain the same landmarks and physical elements as their real world counterparts, only idealized. Similarly, residents create idealized physical manifestations of their personal notion of identity. As such, the learning space is an idealized blend game-like fantasy world, but with enough markers, tasks, and interaction to engage the player (resident) in real-world concerns. Processes requiring the identification of equipment and step-by-step procedures are easily practiced in Second Life.

The unique environment creates an ideal platform for engaging in story-telling and role-playing (Sanchez, 2009) as well as good location for creative problem-solving activities. The idealized world of simulation with idealized and potentially anonymous avatars encourages intellectual risk-taking, since the environment could potentially be less hostile than a real-life setting. However, the reality is often that anonymity may lead to the kind of aggressive behaviors found in discussion boards and blogs.

Culturally Diverse: Real-world cultures can be woven by varying degrees into the texture of Second Life. Sometimes the island's purpose is to educate individuals about a

distinct culture. For example the Korean Cultural Center Island offers an enjoyable immersive experience which inspires a sense of wonder and discovery. Cultures vary in Second Life because many are, in essence and in practice, invented cultures, and as such are protean, ever-changing, and engagingly chimerical.

Disadvantages

Steep Learning Curve: One of the most frequently heard complaints is that the learning curve is very steep in Second Life. Despite the presence of orientation islands, it can be difficult to learn how to use the Second Life Viewer and to move from island to island while in world. Learning how to move one's avatar takes time, and skills such as fast-walking and flying are not necessarily easy to learn. Unfortunately, inept movements are painfully public, which can also discourage an individual from visiting worlds with many other residents.

Social Pressure for New Residents / Bullying and Shaming: As in any community, codes for etiquette and proper behavior have developed. Unfortunately, there are few ways to learn what they are except through time in world and through trial and error. There are ways that residents shame new residents, and the experience can be unsettling, even if one is theoretically cloaking oneself in the anonymity of an avatar (Schroeder, 2006). The rules of behavior can be particularly awkward in events involving groups. If the new resident feels awkward moving around in a room, to sit, fly, dance, etc. it can discourage one from participating. The experience can also reduce the learner's confidence and erode her "I can do it" attitude.

Culturally Confusing: The culture of Second Life is an invented culture, and while the residence does receive guidance from other residents, and from information from kiosks and signage, the world can be confusing. Automated web site avatar attendants or other virtual customer service representatives are often used. They are preprogrammed with information and they answer questions. Sometimes automated bots are helpful, but sometimes they exacerbate the problem, since by not answering specific questions, the resident may become all the more confused. While Second Life has an overarching culture that spans the entire virtual world, each island, particularly those that are well-trafficked and have high levels of interaction, develop their own cultures. One way to learn about the culture is to go to "safe" or friendly sites where people share a common goal or interests. For example, the International Society for Technology in Education (http://www.iste.org/) offers an island in Second Life where society members can meet and learn about ways to use Second Life in education.

Technical Difficulties: Another common complaint about Second Life is that the client program requires too much bandwidth and that it quickly overwhelms the capability of many computers, particularly small laptops and netbooks. Second Life islands can be slow to load, and the amount of time required to do anything when system lags can discourage residents from returning. Further, wifi often does not achieve the connectivity (it can be intermittent or the speed can be slow), which tends to undermine the flexibility and "any time, any place" advantages of web-based learning. Technical difficulties lead to frustration and contribute to the high attrition rate among residents. Several writers have commented that technical difficulties and the fact that interacting in Second World is time-consuming have led to a high dropout rate and infrequent visits.

Cognitive Overload / Distractions: Cognitive overload (Miller, 1964) can occur in Second Life. Poor design and placement of interactive objects and text can be distracting (Sweller, 1999). Further, the use of informational kiosks, while useful for accessing learning objects, can be distracting, particularly if a group event or lecture is occurring. Residents are tempted to leave the event and to interact with the objects in the kiosk, particularly if they are free articles of clothing or gifts that enhance skills or abilities.

4. LIBRARY ISLANDS: TYPES AND FUNCTIONS

One of the fastest-growing fields of Second Life involves libraries, which tend to be portals to repositories of information. For convenience, it is easy to classify them as libraries, but it is important to keep in mind that not all sponsoring organizations are libraries. Many are institutions of higher learning, while others are associations or not-for-profit organizations. Others are for-profit media and information companies.

Library Consortia and Libraries for Professional Librarians: The American Library Association, the California Library Association, and other islands focus the best way to design information systems and to improve information access and retrieval. They feature demonstrations and models.

Colleges and Universities: Many universities include a library within their island. The library may be in a separate building, or associate with a museum. They often feature learning objects that connect the resident to the particular strengths or focus of the collection / repository.

Libraries for Children and Youth: Collections of children's literature may be available in their own islands as in the case of the Mi Pueblo island. At the same time, they may be a location within an island, as in the case of Rachelville in Imagination Island. Mystery Manor island and others emphasize a sense of adventure, play, and discovery.

Public Information Libraries: Islands such as Health Info island, CDC island, and the Light Bearer Grief Center offer very specific information in order to answer residents' questions. The emphasis is less on encouraging a sense of play and adventure, and more on clarity, efficiency, and responsiveness to one's information needs.

5. CONCLUSIONS

Effective use of an immersive multiplayer virtual environment requires a designer to be aware of the kinds of learning objects that are currently used, and to be able to discuss how and why some motivate and inspire learners who feel they are a part of a community, while others frustrate or intimidate users.

Success requires an examination of key factors: 1) learners' familiarity with Second Life; 2) learning objectives; 3) connection between learning objectives and available learning objects in the islands; 4) how learning takes place in Second Life; 5) factors that motivate and demotivate students.

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