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## Learning Spaces in a Second Life



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## Abstract

Pedagogy in virtual worlds is a new phenomenon that is evolving into something very different from the traditional classroom. Learning spaces are currently considered physical spaces, but with virtual worlds, learning spaces can now be designed in multiple ways for any given course. No longer is one constrained to location. A teacher can take their class to see international sites without the costs associated with a physical visit to the same location. As teachers begin to think about their methods of instruction and how best to enable their students to learn fully and completely, the pedagogy that is employed in these classes will be very different from that used in the traditional classroom. It will also be affected by the students that are enrolled in the course and how they see the use of virtual worlds in their own education. Because of these influences, pedagogy using virtual learning spaces needs to be studied for future business education classes that take place in virtual worlds.

## Introduction

Learning spaces have been a brick and mortar concept for several decades in higher education. However, with the advancement of web technologies and Web 2.0 tools, learning spaces are beginning to appear in virtual environments. The use of virtual worlds in higher education has moved learning spaces to these areas and allowed students at a distance to take advantage of these resources as their counterparts on campuses across the world use brick and mortar spaces. The purpose of a learning space can consist of creating a learning environment that pushes critical thinking, collaborative and active learning, and the hope for knowledge creation (Long & Holeyton, 2009). According to Michael Wesch (2008) most classrooms were built during a time when information was considered a scarce commodity and difficult to obtain. Once new media environments were created, a new type of thinking emerged, necessitating a new philosophy of thought. Now learning spaces have become change agents themselves through the flow of human knowledge across the Internet and accessible by laptops and web 2.0 devices. With these new devices and a 24-hour access to information and knowledge, virtual learning spaces will account for a new way that people will work, collaborate, and conceive and construct knowledge (Long & Holeyton, 2009).

Virtual worlds have been adopted by educators to offer discussion and work spaces, coaching utilities, and digital resource repositories (Karpati, 2009). As educators look at ways to take advantage of new Internet technologies, technology is capturing, storing, and distributing large amounts of data across the Internet on a daily basis. Many are of the belief that the Internet is the world's database and people are consumers of these data. Through the use of virtual learning spaces, new communities will be formed that will begin to learn and build. These communities will become communities of practice (COPs) that become knowledge building groups through the use of the data collected from the Internet. As data is collected, these COPs will begin to create information which through sharing and communicating becomes knowledge and when practiced becomes wisdom (Allee, 1997). As a result of this data transformation, new educational paradigms have evolved. One of these paradigms is the use of virtual worlds for learning spaces.

Virtual learning spaces should allow students to have an experience set within a technological environment that gives them a strong sense of actually being in that environment (Warburton, 2009). Learning environments created in virtual worlds should include persistence of the virtual environment,

a shared space allowing simultaneous participation among multiple users, the use of a 3-D personified representation known as an avatar, the interaction of users with objects in the virtual world, the interaction should occur in real time, and the virtual world should be similar to the real world (Smart, Cascio, & Paffendorf, 2007). All of these features will allow for a positive experience for students using the learning spaces.

Warburton (2009) claimed that Second Life (SL) is one of the best virtual worlds for the creation and use of virtual learning spaces in education today. Second Life has all the features necessary to create virtual learning spaces for education. It is a 3-D virtual world which is created and developed by its inhabitants. The virtual environment provides avatars with a sense of "being immersed in-world". Avatars called "residents" are able to create, buy, sell, and/or interact with objects in SL. Students are able to interact in real time as if they were in a brick-and-mortar course.

### **North American Education Institution's use of Virtual Learning Spaces**

For the past two years a North American education institution has been using virtual learning spaces in Second Life to enable students who are taking distance education courses to have a sense of presence and a sense of space. Second Life has been used in this institution's business and information technologies education (BITE) program to assist students in the task of learning and working. Johnson and Lomas (2005) suggest that the virtual learning space needs to meet the demands of the department's curriculum when being designed and created. This is very important because "a learning space will shape what people do in it and, therefore, will promote or diminish certain types of learning" (Long & Holeton, p. 47). Hunley and Schaller (2009) reflect this idea by explaining that institutions that assess the use of learning spaces must also consider what pedagogical practices yield optimal learning. This suggests that learning spaces and pedagogy are intertwined (p. 34). The BITE program created learning spaces to assist students from a distance to feel immersed into that institution's campus even though it was in a virtual world. The following data depict what these students believed about the virtual learning environments. To understand how students used learning spaces in their courses, a survey was developed and administered through the Perseus Survey Solutions (PSS) system.

A survey-based research methodology was used to collect data concerning student perceptions of learning spaces in a virtual environment. Students who were enrolled or had taken courses in the BITE program that used SL learning spaces were sent an email to request their participation. The questions consisted of fill-in-the-blank and check-box and radio-button selection questions administered through the PSS system over the World Wide Web. The questions addressed the students' personal strategies for using learning spaces in a virtual environment. The survey asked the post-secondary students demographics questions, questions about computer usage for SL, for which purposes students used SL, their personal perceptions of the learning spaces. The following questions concerning the use of virtual learning spaces were then posed:

- Describe your most positive experience in using virtual learning spaces in SL.
- Describe your worst experience in using virtual learning spaces in SL.
- What advice would you provide to a professor who was thinking about using virtual learning spaces in their course's curriculum

Lincoln and Guba (1985) express that the sample size should be large enough to provide informational redundancy. Patton (1990) expresses that sample size is dependent upon many factors including “what is useful, what will have credibility, and what can be done with available time and resources” (p. 184). The challenge is to make sense of all the findings of the study, keep bias in check, and to record for the reader what has been found (Patton, 1990, p. 371-372; Denzin & Lincoln, 2000). A total of 167 post-secondary students were contacted via email and asked to participate in the survey. Of that number, 128 surveys were submitted with 122 completed and usable, for a response rate of 73 percent. That response rate is adequate for drawing conclusions regarding survey variables. For open-ended questions, answers were imported into Microsoft Excel and themes, keywords, and phrases were identified based upon the review of literature. The following section discusses the results of these submissions.

## Results

Tables 1, 2 and 3 display respondents’ demographic information and length of time they have used learning spaces in Second Life. The respondents to the survey were predominantly female (72.1%) between the ages of 28 and 32 (30.3%) and the majority were members of the senior class (70.5%).

Table 1: Age.

AGE	MALE		FEMALE		TOTAL	
	#	%	#	%	#	%
18-22	0	0.0%	17	13.9%	17	13.9%
23-27	7	5.7%	12	9.8%	19	15.6%
28-32	23	18.9%	14	11.5%	37	30.3%
33-37	0	0.0%	9	7.4%	9	7.4%
38-42	4	3.3%	12	9.8%	16	13.1%
43-47	0	0.0%	15	12.3%	15	12.3%
48-52	0	0.0%	5	4.1%	5	4.1%
53-57	0	0.0%	4	3.3%	4	3.3%
<b>TOTAL</b>	34	27.9%	88	72.1%	122	100.0%

Table 2: Class Standing.

CLASS	MALE		FEMALE		TOTAL	
	#	%	#	%	#	%
Junior	8	6.6%	12	9.8%	20	16.4%
Senior	18	14.8%	68	55.7%	86	70.5%
Graduate	8	6.6%	8	6.6%	16	13.1%
<b>TOTAL</b>	34	27.9%	88	72.1%	122	100.0%

Table 3: Length of time using Second Life.

TIME USING	MALE		FEMALE		TOTAL	
	#	%	#	%	#	%
< 6 Months	29	23.8%	75	61.5%	104	85.2%
6-11 Months	0	0.0%	4	3.3%	4	3.3%
1-2 Years	5	4.1%	5	4.1%	10	8.2%

> 2 Years	0	0.0%	4	3.3%	4	3.3%
<b>TOTAL</b>	34	27.9%	88	72.1%	122	100.0%

When students were asked the open ended questions, trends appeared concerning their positive use of learning spaces, their worst experience within the learning spaces, and what advice to give to a professor who was considering implementing virtual learning spaces into their course curriculums. The resulting trends show that a majority of the students enjoyed meeting and communicating with other avatars (54.1%), had software problems involving voice chat or audio in Second Life (30.3%), and the recommendation to professors to have patience and give enough time for students to use the virtual learning spaces to complete their projects (72.1%). Tables 4, 5, and 6 show the resulting themes expressed by the respondents to the three open-ended questions.

Table 4: Themes from, Most positive experience using virtual learning spaces. (n=122)

Theme	N	%
Meeting and Communicating with other avatars	66	54.1%
Building and using the Sandbox (practice area)	20	16.4%
Learning a new technology that could possibly impact the future direction of distance learning	19	15.6%
It was something I could relate to and still learn	10	8.2%
Having an additional method of communication	7	5.7%
<b>Totals</b>	122	100.0%

Table 5: Themes from, Worst experience using virtual learning spaces. (n=122)

Theme	N	%
Software problems with using Second Life (Audio/Voice Chat)	37	30.3%
Learning the new technology in a short summer session class	28	23.0%
Personal schedule made it difficult to meet in-world and use the learning space	22	18.0%
Not being able to maneuver in the virtual learning space	17	13.9%
Building	11	9.0%
Griefers: Original residents of SL	7	5.7%
<b>Totals</b>	122	100.0%

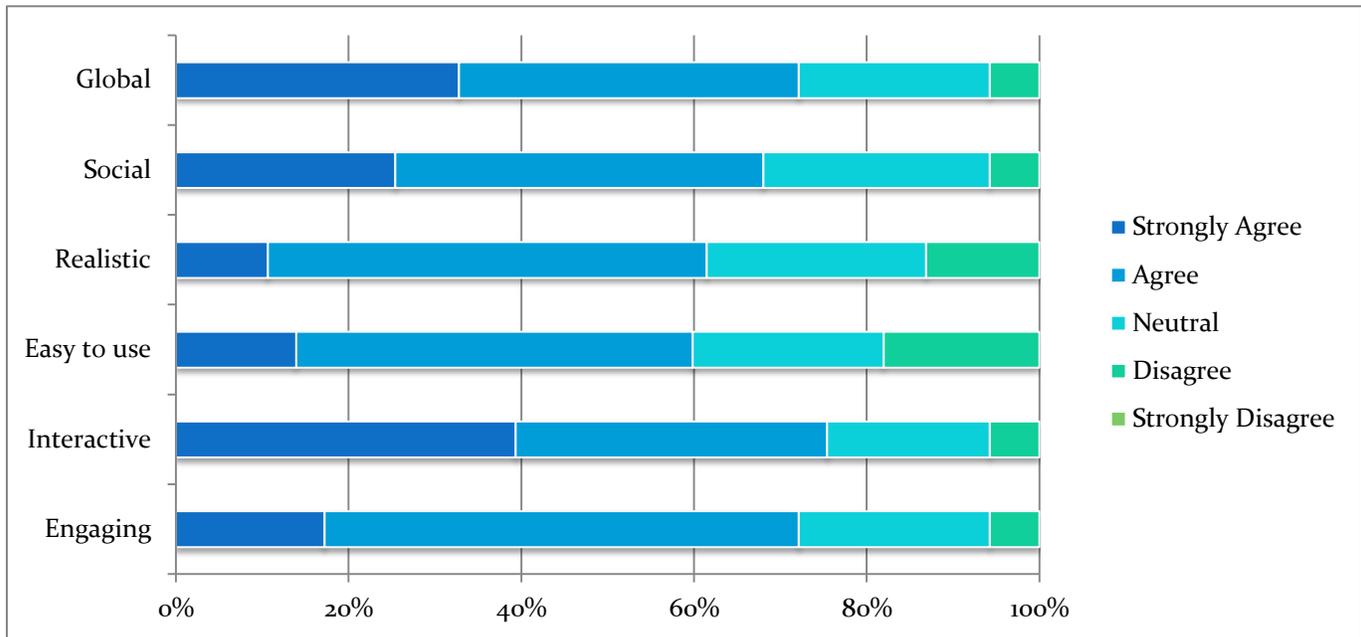
Table 6: Themes from, Advice to future professors considering using virtual learning spaces. (n=122)

Theme	N	%
Be patient with students and provide enough time to work on assignments	88	72.1%
Provide basic orientation training for newbies	22	18.0%
Have more discussions within second life	12	9.8%
<b>Totals</b>	122	100.0%

Respondents were also asked to respond to six characteristics of virtual learning spaces to score from strongly disagree to strongly agree. The six characteristics were: engaging, interactive, easy to use, realistic, social, and global.

Table 7 illustrates the responses of the participants. There were no strongly disagree selections for any of the six characteristics. Participants selected agree or strongly agree 72.1% for engaging, 75.4% for interactive, 59.8% for easy to use, 61.5% for realistic, 68.0% for social, and 72.1% for global. The highest disagree was found for easy to use at 18.0%. Students showed a positive attitude toward virtual learning spaces the majority of the time. As table 7 illustrates, there is still technical and realistic work to be done to improve learning spaces within virtual worlds.

Table 7: Six characteristics of virtual learning spaces.



As the data shows, the students' attitude toward the virtual worlds was mainly positive. Respondents enjoyed the social aspect of using virtual learning spaces, but were disappointed with the technical difficulties that the virtual world caused. Their main advice to professors considering using virtual learning spaces was to be patient and allot more time than normal to allow students to learn the environment and begin using it as it was intended.

### Ten Virtual Learning Spaces Strategies

Virtual learning spaces are important to students in accomplishing their assignments and achieving scholarship. There are ten strategies that Shirley Dugdale (2009) has described for brick-and-mortar campuses (p. 52) which can be transformed to address the virtual world environment of Second Life. These ten transformed strategies are:

1. Analyze the entire virtual world as a learning space
2. Develop insight from user experience and engagement within the virtual world
3. Plan to support multiple types of learners within the virtual environment

4. Use the virtual environment to gain space to accomplish curriculum goals within the virtual world
5. Leverage the growth of distance education classes to solidify the virtual learning space paradigm among department faculty
6. Seek strategic partnerships among other educational institutions using the virtual world to develop other learning spaces at strategic educational locations
7. Consider the virtual classroom as a learning space that students can return to after the class session has ended
8. Link space use to learning assessment
9. Develop virtual learning spaces that foster the creation of communities of practice among students
10. Recognize that learning spaces can be anywhere, anytime tools for your curriculum

These strategies will allow faculty to take advantage of the virtual environment to create engaging, active learning spaces that will increase student performance through engagement, interactive activities, and realistic assessments. The following discussion focuses on these ten strategies of virtual learning spaces.

#### *Analyze the Entire Virtual World as a Learning Space*

Through the analysis of the virtual world as a whole, course planners can determine where students can venture to become engaged in the course content. For example, if your course is to cover basic programming skills, one could have students go to the NASA Jet Propulsion Laboratory in Second Life and look at the case study on the Mars lander project that went wrong when the software programs were not compatible due to project teams having coded using standard measurements and others using metric measurements. It was a costly mistake, but one that NASA learned from and others are free to learn from by using the entire virtual world as a learning space. By taking students to other locations in the virtual world they are able to learn through experiencing the virtual environment versus just being told what happened.

#### *Develop Insights from Virtual Users*

It is important to analyze the students and what their needs may be through a planning process that engages them from the beginning of the process. Understanding their needs helps one to plan the learning spaces required to assist the students the most with the subject matter being taught.

#### *Plan to Support Multiple Types of Learners*

Using the data collected from the virtual users, learner types can be identified and strategies can be employed to address any needs that may occur. Are there technical skills needed to use the virtual learning space? Are there navigational skills needed to use the space? Questions such as these must be addressed in order to serve all the learners in the course that is going to employ virtual learning spaces.

### *Use the Virtual Environment to Gain Space*

The virtual world can be beneficial from a space standpoint through stacking learning spaces vertically into the virtual sky at an unlimited height giving the advantage of using a small space. This is important if an educational institution is using Second Life and does not want to rent multiple islands in the Second Life grid. Planners can begin building virtual learning spaces in the air to meet the demands of multiple courses wanting to employ virtual learning spaces.

### *Leverage the Growth of Distance Education Classes to Solidify the Virtual Learning Space Paradigm among Department Faculty*

As more students engage in taking distance education courses, more faculty need to begin to seriously consider employing virtual learning spaces in their curriculums. As brick-and-mortar costs continue to rise, faculty moving to virtual worlds for learning spaces can save their institutions costs. This same faculty will find that their students are more engaged and excited to learn.

### *Seek Strategic Partnerships among other Educational Institutions Using the Virtual World to Develop other Learning Spaces at Strategic Educational Locations*

Educational institutions need to begin considering partnering with organizations that have already developed learning activities within the virtual world. Many of these organizations are very willing to allow visitors to explore their virtual space. But, education institutions can also partner with real-world organizations to help develop in-world activities to assist in the teaching and learning of the student. This will only enhance the learning spaces that are developed.

### *Consider the Virtual Classroom as a Learning Space that Students can Return to*

Many individuals have the idea that only a brick-and-mortar classroom is a learning space. This thinking causes the ignoring of a powerful tool that the virtual learning space gives to a course. The learning space itself can be the classroom! At the North American education institution all the virtual classrooms are the learning spaces. Some courses have multiple learning spaces with a different space that is visited each new class period. This enhances the learning since students feel engaged and immersed into a realistic environment.

### *Link Space Use to Learning Assessment*

This strategy focuses on asking students how well the virtual learning space has supported their performance in the course. Faculty should also be asked how they have employed the learning space in their curriculum. Through this analysis one can determine if the virtual learning space needs to be adjusted to help the needs of both student and faculty groups. There needs to be a method for obtaining feedback and measuring learning in the use of the virtual learning spaces.

### *Develop Virtual Learning Spaces that Foster the Creation of Communities of Practice among Students*

The use of virtual learning spaces will foster the development of learning communities that in turn will form communities of practice for the classroom. Students will begin to transform data into information, information into knowledge, and knowledge into wisdom. The community will learn together and from one another. This fostering of community building through the use of virtual learning spaces will enhance the curriculum. Faculty will become more engaged in a facilitation role than a lecturer. This will enable learning to occur among everyone included the teacher.

### *Recognize that Learning Spaces can be Anywhere, Anytime Tools for Your Curriculum*

Virtual learning spaces can be created in any location within a virtual world and they can be accessed at any time on any day. This allows the course planner to use these learning spaces as tools for creating engaging activities for students. It also enhances the curriculum of the course and engages the student. Understanding this one concept gives a course planner the power to give distance education students an experience of engagement and satisfaction that encourages the student. This can be seen as a win-win for both teacher and learner.

### **Conclusion**

The future of learning spaces is rapidly changing as virtual worlds improve and faculty at educational institutions begin to engage in its use. By implementing the ten strategies for virtual learning spaces, students from a distance can become more engaged and have access to materials that were not available. Academic disciplines can give students access to locales that would be impossible to reach in the real-world environment. This is the power of using a virtual world like Second Life. Using the virtual world allows the building of learning spaces that can be accessed anytime from anywhere. Implementing a strategic plan for incorporating virtual learning spaces into course curriculums is advantageous to educational institutions and to students. The future is bright for virtual learning spaces.

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