DRAWING A ROADMAP

Barriers and Challenges to Designing the Ideal VIRTUAL WORLD for Higher Education

Chris Johnson

“ScubaChris Wollongong”

I never teach my pupils; I only attempt to provide the conditions in which they can learn.
—Albert Einstein

In the previous articles, the authors have provided an overview of the current status of virtual worlds in higher education, explored pedagogical and learning issues, and discussed what the future might bring. The goal of this article is to draw a roadmap for designing an “ideal” virtual world for higher education, pointing decision-makers in a general direction for implementing virtual worlds and noting various barriers along the way.

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When designing a virtual world, or any other Web 2.0 tool, users need to recognize that there are basic barriers to institutional change. These barriers include first-order barriers, issues that are extrinsic to the faculty such as “lack of access to computers and software, insufficient time to plan instruction, and inadequate administrative and technical support,” and second-order barriers, issues that “are intrinsic to teachers and include beliefs about teaching, beliefs about computers, established classroom practices, and unwillingness to change.” Based on my research and interviews, however, there are various additional barriers to implementing a virtual world. Some of these barriers have fairly simple solutions. For example, a world that requires higher-level graphics cards can simply wait until those cards become inexpensively available. Other barriers—discussed below—deal with significant limitations that will require careful thought.

Following the Road Less Traveled—Can Be Lonely.
Andrew S. Tanenbaum said: “The nice thing about standards is that you have so many to choose from.” This plethora of standards is becoming an increasing problem with virtual worlds. Currently, Second Life can be considered a front-runner in virtual worlds. However, it is not clear that Second Life will emerge as “the standard.” In fact, Larry Johnson, CEO of the New Media Consortium (NMC), states: “There are so many perspectives about what virtual worlds should be that I’m not sure it will be possible to have a one-size-fits-all solution.” He explains that some people are interested in the serendipity of a virtual world and the social aspects of these spaces, where avatars and identity are central to the interaction. Others are more interested in the physicality of the environment and the ability to model real-world spaces or to overlay real-world information on top of the virtual space. It is therefore difficult, if not impossible, to identify the “standard virtual world.”
A secure multi-age virtual world would provide educators with a rich environment in which to study instructional practices.

With decreased funding, most institutions are looking for the “enterprise-wide solution” that can be applied to all situations, even though these “one-size-fits-all” solutions simply do not exist at this time and probably will not for the foreseeable future. Therefore, it is important that an institution be clear about its goals in implementing a virtual world in order to determine what tool or tools in which to invest.

No, You Can’t Take It with You.

Due to the plurality of purposes in virtual worlds, we will continue to see a diversification of environments until such a time that computers, networks, and software become powerful enough to be all things to all people. In the meantime, a barrier to implementation will be the impermeability of the various worlds. Faculty who spend hours, if not hundreds of hours, developing their avatars and items become upset when they discover that they cannot take these items with them. Until standards for interoperability are developed, an issue that is currently being worked on, this will continue to be a significant barrier to time-strapped faculty and, as Chris Collins notes, “to a more robust sharing of research, content, and resources.”

But It Looks Like Such a Nice Place!

Welcome to the virtual worlds Wild West, where the socializing forces of law and order are just now moving in and trying to determine how to provide a safe environment. Until now, for example, Second Life has been a mélange of self-organizing social groups, a characteristic that has actually been one of its major strengths. However, given the litigious nature of our society, the perception of Second Life as an unregulated collection of people showing off their naughty bits causes many administrators either to shy away from the environment or to tell faculty that if they want to experiment, they are on their own. Therefore, we need to be aware of people’s perceptions of these dangers and create non-punitive policies and procedures that allow faculty and students to explore these environments safely.

Teens vs. Adults; or, Can’t We All Just Get Along?

In the case of Second Life, one method of ensuring the safety of younger students, ages thirteen to seventeen, has been to create an entirely separate world: Teen Second Life, known as the “Teen Grid.” There is no connection between the Teen Grid and the Second Life grid for adults (ages eighteen and up), and for many sectors this has not been a problem. So why should higher education be concerned about virtual worlds for those under eighteen? There are several reasons.

First, an increasing number of colleges and universities are enrolling students who are younger than eighteen. Of concern is that many faculty are unaware of their students’ ages and therefore may be exposing these “non-adults” to inappropriate Internet-based material.1 There may also be legal issues that should be addressed when dealing with these younger students. In addition, even if the students are not physically part of the college/university campus, they may be co-enrolled in a high school course offered by a community college or university. Without a unified, safe environment, these students cannot participate in courses that utilize Second Life.

Second, allowing interaction between high school and postsecondary students increases the potential for mentoring and outreach. As institutions become more competitive, many are trying to attract high school students earlier, sometimes starting when they are freshmen. A truly multi-age virtual world would allow institutions to extend their reach into these lower grades. Peggy Sheehy, the director of Ramapo Island,8 has suggested the development of a global curriculum for international human rights. Such a curriculum would allow students in grades seven through twelve to interact with adults at institutions from around the world to discuss social, economic, and environmental issues. Such a project would allow educators to come to a common agreement not only on the global curriculum but also, and more importantly, on a set of conventions and policies that would allow students of all ages to interact.

Third, a secure multi-age virtual world would provide educators with a rich environment in which to study instructional practices. Current educational instances in the Teen Grid, such as Ramapo Island and the Eye4You Alliance,8 allow educators to conduct research. However, the educators must first undergo a background check and then create a separate avatar in the adult grid; once this avatar has been moved to the Teen Grid, it can never return, and once there, it cannot leave the land owned by the individual project, thus limiting these educators’ social interaction with others. Even worse is the situation for students who have participated in Teen Second Life and want to participate in the adult grid when they turn eighteen. As noted by Alan Levine, NMC’s Vice President for Community and Chief Technology Officer, these students “lose their life when they go to the adult grid.”9 They are not allowed to bring anything from the Teen Grid to the adult grid and must start from scratch rebuilding their identity.

Currently, faculty in higher education deal with this age division by allowing “underage” students to watch from the periphery or develop alternative assignments. But as Sarah Robbins-Bell stated in an online discussion of this topic: “So we have to offer alternative options to Second Life in a course? Then we have to offer alternative texts too.”10 Although there are many potential solutions to this problem, until a solution can be found...
Walling off students from the rest of the environment may address international legal issues, but this defeats the social aspects of many of these worlds.

Can I Be Locked Up for This?
Related to providing a safe environment for all students are a number of legal issues. First is FERPA (Family Educational Rights and Privacy Act), which addresses issues related to the privacy of student information. In addition, administrators with students under the age of eighteen must be concerned about COPA (Child Online Protection Act), whose purpose is to restrict “access by minors to materials commercially distributed by means of world wide web that are harmful to minors.” This federal law applies to all access to the web by a student under the age of eighteen.

Copyright and intellectual property issues also must be addressed. Many faculty members work under their individual understanding of what constitutes the “fair use” of materials, and that understanding is often wrong in the online environment. Also, when using commercial services such as Second Life, an institution will have agreed to the terms of service, but most likely, administrators will not have communicated those terms to faculty. The individual faculty member may be surprised to find out what rights the terms of service protect or take away.

Another issue is that most virtual worlds are multi-state and/or international. Walling off students from the rest of the environment may address international legal issues, but this defeats the social aspects of many of these worlds. As noted earlier, Sheehy has suggested the development of a global consortium of educators at all levels to develop uniform terms of service, expectations of behavior, and guidelines for participation. Until a consortium like this is formed, an institution’s legal department must be involved in setting guidelines, policies, and procedures that protect the institution but allow for the creativity that virtual worlds provide.

Policies (or Lack Thereof) Create Confusion.
Many institutions rely on their Acceptable Use Policies (AUPs) for their legal protection. These policies are presented to students, staff, and faculty at arrival on campus and are usually glanced at, agreed to by a click of the right button, and then immediately forgotten. Even if a student, staff, or faculty member does take the time to read the AUP, the document is often written in legalize that makes it difficult to determine what one can and cannot do.

For example, the University of Arizona’s policy on the “Acceptable Use of Computers and Networks” states: “Individuals using computer resources belonging to The University of Arizona must act in a responsible manner, in compliance with law and University policies, and with respect for the rights of others using a shared resource. The right of free expression and academic inquiry is tempered by the rights of others to privacy, freedom from intimidation or harassment, protection of intellectual property, ownership of data, and security of information.” Although this policy seems fairly straightforward, the ten “Acceptable Use Guidelines” meant to clarify this policy instead introduce confusion. For example, Guideline 3, which instructs the computer user to “clearly and accurately identify one’s self in electronic communications,” adds: “Do not forge or misrepresent one’s identity. Concealing or masking the identity of electronic communications such as altering the source of an email message by making it appear as if the message was sent by someone else is a violation of this policy.”

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Challenges
“But I don’t want to go among mad people,” Alice remarked. “Oh, you can’t help that,” said the Cat. “We’re all mad here.”
—Lewis Carroll

The authors of the previous articles in this issue of EDUCAUSE Review have done an
Even when faculty members have been persuaded to take the first step and create an avatar, they often feel like Alice: they have fallen down the rabbit’s hole.

excellent job of describing the potential educational benefits of virtual worlds. However, when the discussion turns to how a virtual world works, and to the potential of that world as an instructional tool, people’s eyes tend to gloss over, and they often start inching toward the door. Even when faculty members have been persuaded to take the first step and create an avatar, they often feel like Alice: they have fallen down the rabbit’s hole.

One reason for this is that the current environments tend to have interfaces and initial orientations that were designed for a generation of gamers. New users can become bogged down in learning the simple aspects of the interface and may never experience the environment itself. For example, at the University of Arizona, faculty have expressed frustration because they cannot learn how to sit down in virtual worlds or because they cannot figure out how to correctly set the hair on their avatar. Because of these frustrations, they tend not to invest the time needed to explore the world as an instructional resource.

However, as the NMC’s Levine has pointed out: “In our first life, it generally takes us maybe eighteen years . . . to get to be fully functional adults. It’s an evolutionary process. A virtual world that had a short learning curve would be something not very interesting. So I think an ideal virtual world needs some of that complexity.” The challenge thus becomes how to select a virtual world that has the necessary complexity to keep users engaged while developing strategies and structures to support them as they learn.

Even more important is that if an institution wants to implement a virtual world of any type, it needs to convince faculty that the early adopters are, in fact, not all mad and that the tool does have value. Instruction may just be in a form with which the faculty is unfamiliar. Therefore the institution must begin by offering faculty, staff, and students the time and support to perform simple tasks like learning how to navigate the environment. Faculty must then be assisted in visualizing something outside of their understanding of what it means to be a teacher.

Potential faculty development might include the following: a) ongoing public conversations explicating stakeholders’ . . . pedagogical beliefs, including explicit discussions about the ways in which technology can support those beliefs; b) creation of small communities of practice in which teachers jointly explore new teaching methods, tools, and beliefs, and support each other as they begin transforming classroom practice; c) opportunities to observe classroom practices, including technology uses, that are supported by different pedagogical beliefs; d) gradual introduction of technology tools, beginning with those that support teachers’ current practices and expanding to those that support higher-level goals; and e) access to ongoing technical and pedagogical support as teachers develop both confidence and competence with the technological tools, as well as the new instructional strategies, required to implement a different set of pedagogical beliefs.”

**Leadership**

Nothing is more terrible than activity without insight.

—Thomas Carlyle

For any successful change, there must be a leader who has the vision to see the potential, to set the goals and direction, and to champion the process. For example, at the University of Arizona, Limell Lawson, Director of the Office of Student Computing Resources, has identified Second Life as a potential tool for (1) supporting instruction, (2) promoting the university, and (3) providing an avenue for student participation, recruitment, and retention. Guided by the faculty lead for the project, Lawson has assembled a faculty and staff team that includes both pedagogical and programming/graphic expertise and has provided the team members with the resources to begin exploration. The goal is to carefully study the resources necessary to support a virtual world and then to implement that world to its full potential.

Although small implementations may occur, for institutional acceptance of virtual worlds to take place, a sponsor such as Lawson—with enough administrative credibility to guide the project and, in some cases, to protect it from doubters—must be identified. Since implementation of a virtual world has enterprise-wide potential, this sponsor must have the vision and expertise to know where the world fits within the stable of tools being supported by the institution. The sponsor then must set realistic goals for implementation and must provide the resources necessary to support the implementation.

**Assessment . . .**

Perhaps as important as setting goals and providing resources is developing realistic assessments of the project’s success. For example, in a virtual world such as Second Life, what are the metrics that will be used to determine the institution’s return on investment? Often, the “value added” is instruction, and institutions must rethink their traditional assessment methodology to develop new metrics of student learning.

**. . . and Accountability**

Along with reassessing what will be assessed, institutions need to rethink how they will collect the data and make decisions about this data. When students create aliases, how can faculty collect accurate assessment data? The Second
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Life educational community has begun discussing how to tie participation in virtual worlds into the institution's authentication methods, but no simple solutions present themselves. Still, by creating a single sign-on that provides access to the institution's resources and allows students to participate in a virtual world or other Web 2.0 tools, the institution not only increases the security and reliability of student data but also helps to create a more secure environment. If a person is tied to a fictional name, then there is recourse if that individual violates the institution's policies.

**Conclusion**

*Behold the turtle. He makes progress only when he sticks his neck out.*

—James Bryant Conant

When using a roadmap, one can take many different paths to reach a desired destination. Similarly, institutions can take many different turns along the road to implementing a virtual world. It is up to everyone on the journey—administrators, faculty, staff, and students—to decide the best path for an individual institution. The important thing is to take the first step.

Virtual worlds offer untapped potential for expanding the learning environment to the new WWW: Whenever, Whatever, Wherever. But that potential is often blocked by barriers, leading to the question: What would an ideal virtual world for higher education look like? First, it must allow users to shape their individual experiences by allowing them to create their own content. As Johnson states: “The promise of virtual worlds is to illuminate topics that are difficult to communicate now. You are not limited by constraints of the real world, so scale can be manipulated. You can build things at nano-scale, wander around them, wander around inside of a cell—all of those things are easily possible.” By having a robust set of building tools, the ideal virtual world allows its participants to actively participate in the co-creation of the environment and in their own expression of complex concepts.

To accomplish this, the ideal virtual world must allow users to both import and export content so that it can be manipulated by software external to the world. It must also allow users to share information through familiar formats such as a word processor, spreadsheet, and/or presentation program, and it must do so from behind the institution's firewalls in order to provide the security and single sign-on capabilities currently being developed by many institutions. The world must also maintain a balance between ease of use and complexity, to encourage participation while maintaining interest. Johnson notes that by doing these things, the ideal virtual world will provide the tools necessary to allow users to “travel through the glass and be together as one.”

Although finding this “holy grail” of virtual worlds currently seems to be a difficult—if not impossible—task, we will let Alice have the last word:

Alice laughed. “There’s no use trying,” she said; “one can’t believe impossible things.”

“I dare say you haven’t had much practice,” said the Queen. “When I was your age, I always did it for half an hour a day. Why, sometimes I’ve believed as many as six impossible things before breakfast.”

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**Notes**

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3. Larry Johnson, Chief Executive Officer, New Media Consortium, personal communication with the author, May 2008.
5. Second Life Education Roundtable held in-world on April 6, 2008, at Montclair State CHSS.
6. Ramapo Island is the virtual presence of the Suffern Middle School in Suffern, New York. More information on the project can be found at: http://ramaposilands.edublogs.org/.
7. Peggy Sheehy, Instructional Technologist, Suffern Middle School, Suffern, New York, personal communication with the author, June 2008.
8. More information on the Eye4You Alliance can be found at: <http://eye4youalliance.youthtech.info>.
10. Sarah Robbins-Bell quoted from the Second Life Education Roundtable held in-world on April 6, 2008, at Montclair State CHSS.
12. Second Life Education Roundtable held in-world on April 29, 2008, at Montclair State CHSS.
17. Levine, personal communication.