View points

By Marina Umaschi Bers

Virtual Worlds as
Digital Playgrounds

Paul is an eighteen-year-old incoming freshman participating in the Active Citizenship through Technologies (ACT) pre-orientation program at Tufts University. As part of ACT, Paul is using the Zora virtual world to develop a campus of the future and to imagine how it can better serve the needs of the surrounding community. During the three-day intensive program, each student first creates his or her own virtual dorm room. Paul downloaded pictures of his favorite sports team and of famous singers to decorate the virtual walls of his dorm room.

Paul's avatar is a cartoon character dressed in yellow. Paul is happy because his virtual dorm room is ready to be shared with others in ACT. So he goes around the three-dimensional virtual campus to find someone. He quickly navigates through Zora's different public spaces that he and others participating in ACT have created: the cafeteria, the bookstore, the police station ("a virtual place to explore the relationship between the local town police and the university police," as stated on one of its walls). Paul finds other virtual exhibits that teach about a diversity of issues such as the relationship between the university and the local public schools and the situation of immigrants who work cleaning the university's offices. In the latter exhibit, at the Immigration House, Paul encounters different objects created by his peers: flags from countries in Central America; a link to the current laws on U.S. immigration; and excerpts from interviews with immigrants who work on campus. He decides to add some statistics. He does his research online and brings the information back to Zora. He also writes a story, which he attaches to a picture of a young boy, about his own encounters with immigrants. Finally, he assigns the value "respect" to a picture of young immigrants and defines it in Zora's "collaborative values" dictionary.

As Paul is about to leave the Immigration House, he is invited to join a discussion in the admissions office of the virtual campus. Paul listens to the discussion. Mike says: "Anyone have strong feelings about the admission process?" Laura answers: "I think that peer review will be a better way of processing people—maybe on a sub-personal level." Caitlin says: "To what degree?" Tom says: "What do you mean by 'peer review'?" Mike says: "Would peer review take the place of an essay?" Laura answers: "Like interviews." Kim says: "More like having admitted students read applications and give their feedback: the common applications with a supplemental essay."

The discussion quoted above is an excerpt from a real-time conversation in Zora among a group of Tufts University incoming freshmen who participated in ACT, an optional pre-orientation program (http://ase.tufts.edu/devtech/act.html), which I developed in 2005. ACT is both an educational and a research program. Students participate for three days, using the Zora multi-user environment to create and inhabit a virtual campus of the future.[1] At the end of the intensive program, they make a short digital video about their virtual campus. During their first semester in college, students came together again in an open house to show their videos to the campus community. During their four years in college, ACT participants are asked to complete surveys and participate in focus groups in an effort to collect data regarding the impact of ACT on their academic and extracurricular experiences, as well as on their inclination to become engaged with both the campus and the wider community.

The ACT experience is designed to immerse students in a high-tech playground where they can acquire civic knowledge and skills, as well as experiment with civic behaviors and democratic participation. In the process of developing their campus of the future, the students first must learn about the real campus and discuss how they could improve its facilities, its policies, and its curricular offerings and, most important, what they could do to strengthen the relationship between the university and the community in light of students' privileges and civic responsibilities. For example, during the two years that the ACT program has been running, students have re-created, in Zora, virtual campuses similar to the ones they know, with spaces such as the Mike Jonas Student Center, the Math and Science Building, the Orwell Language Hall, the Winifred Mandela Library, and the Jumbo Appetite, a dining hall where "themed meals are served and a suggestion box [is provided] where requests for particular foods can be made." But the students have also developed virtual exhibits to educate students, faculty, and community members about issues of concern to all.

A growing body of research indicates the educational and social potential of virtual worlds.[2] Many virtual worlds have been developed to support young people in learning mathematics, the physical and natural sciences, literature, and the social sciences. Other worlds, such as Zora, have been designed specifically to support young people's explorations of issues of identity and community. Since virtual environments can provide quick access to a wide range of information and resources, communication mechanisms for engaging in critical debates, and tools for supporting collaboration and for enabling new expressions of social life, they also serve as powerful platforms for developing educational programs. The potential of these immersive environments goes beyond the four walls of the classroom. These worlds can reach students who are outside of the school.

However, both pedagogical and technical considerations need to be taken into account when designing virtual environments that, beyond providing knowledge and information, afford opportunities for learners to engage in discourse and action. Zora was inspired by a "praxis-based" educational model, which in the case of the ACT program, means supporting students to construct experiences through which they can become effective citizens. For

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example, the curriculum not only specifies the types of personal and collective experiences that students should engage in but also empowers students to decide what kind of projects and discussions to work on. The Zora environment provides a safe "social laboratory" for youth to experiment with some of the skills and attitudes needed to become good citizens.[3] Following the constructionist philosophy of learning, it also has authoring tools to enable novice users to make, design, and create digital artifacts while taking part in a peer community that faces the challenges of democratic participation.[4] Zora engages youth in chatting as well as doing, discussing as well as creating, and thinking as well as producing.

The social and technical features of virtual worlds make it easy for learners to observe the connections between what is said in the online conversations (e.g., discussing discrimination) and what is done in the virtual city (e.g., creating the Immigration House). A learning environment that offers the possibility of observing the relationship between *saying* and *doing* is powerful because in education, concrete actions matter as much as analytical thinking.

I believe that praxis-based programs are at the heart of most powerful educational experiences using technology, but this view is not always in agreement with current U.S. educational trends, which tend to focus on knowledge-based programs in which students can be assessed using traditional means such as comprehensive multiple-choice exams. Praxis-based models stand in sharp contrast to knowledge-based models, which focus on what people should know and understand. However, virtual environments such as Zora can provide a bridge between both approaches by strengthening either the dimension of praxis or the dimension of knowledge, depending on the demands of the content domain.

Even when there is a strong push toward knowledge-based approaches that are best suited to test-driven curriculum, the advantage of virtual worlds that can accommodate praxis-based models is that they are open-ended. For example, in the ACT program, faculty can use Zora to create their own public virtual spaces to directly educate students about civic facts and processes.[5] But they can also design an experience in which students will take the lead. Open-ended technologies allow different kinds of learners to use the technologies in the way that suits them best. For example, some learners might choose to display content (as did those ACT participants who organized virtual exhibits), others might decide to engage in storytelling (as did those who used Zora to write stories or values definitions), and still others might want to engage in debates (as did those who discussed the admissions process).

The fast-growing uses of virtual worlds for education are consistent with a recent paradigm change in the learning sciences—a change that is shifting the process of cognition from the idea that cognition resides within the head of one individual to the view that cognition is situated within a particular community of learning or practice. As technology rapidly changes, new tools will be developed and new possibilities for crafting educational programs will emerge. Thus,

the question is: What will *not* change, when everything else changes? A short answer to this complex question is that people, and our inclination to learn by doing rather than by being told, won't change. We thus need to focus on technologies that allow students to experiment with "what if" situations by making, creating, developing, discussing, and debating. Praxis-based models can guide learners in the design and use of virtual worlds as safe digital playgrounds for learning. This is a less-explored terrain, but one with a rich potential.

Notes
1. I first developed Zora as part of my doctoral work at the MIT Media Lab, later revising and reimplementing the virtual world at Tufts University through a faculty grant from Tufts Academic Technologies and an NSF Career award (NSF IIS-0447166).
2. See, for example, Sasha A. Barab, James G. MaKinster, Julie A. Moore, Donald J. Cunningham, and the ILF Design Team, "Designing and Building an On-line Community: The Struggle to Support Sociability in the Inquiry Learning Forum," *Educational Technology Research and Development*, vol. 49, no. 4 (2001), pp. 71–96; Jody Clarke and Chris Dede, "Making Learning Meaningful: An Exploratory Study of Using Multi-User Virtual Environments (MUVES) in Middle School Science" (paper presented at the American Educational Research Association Conference, Montreal, April 2005); Kurt Squire and the Games-to-Teach Research Team, "Design Principles of Next-Generation Digital Gaming for Education," *Educational Technology*, vol. 43, no. 5 (September-October 2003), pp. 17–23; and Constance A. Steinkuehler, "Learning in Massively Multiplayer Online Games," in Yasmin B. Kafai, William A. Sandoval, Noel Enyedy, Althea Scott Nixon, and Francisco Herrera, eds., *Proceedings of the Sixth International Conference of the Learning Sciences* (Mahwah, N.J.: Lawrence Erlbaum Associates, 2004), pp. 521–28.
3. Sherry Turkle coined the term "social laboratory" for the Internet in her book *Life on the Screen: Identity in the Age of the Internet* (1995), in which she analyzed the first experiences of adolescents using the Internet in the early 1990s.
4. Seymour Papert, the pioneer precursor of the use of technologies to promote learning, developed the constructionist philosophy of learning based on his work with Jean Piaget.
5. For more on Zora and civic engagement, see Marina Umaschi Bers, "Civic Identities, Online Technologies: From Designing Civics Curriculum to Supporting Civic Experiences," in W. Lance Bennett, ed., *Civic Life Online: Learning How Digital Media Can Engage Youth*, The John D. and Catherine T. MacArthur Foundation Series on Digital Media and Learning (Cambridge: MIT Press, 2008), pp. 139–160.

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