Collaborative Efforts: Teaching and Learning in Virtual Worlds

With shrinking budgets and the current economic climate, academia should be looking to cloud-based technologies as a way to support students and achieve institutional goals. Over one-quarter of the current U.S. population is under twenty years of age. With more than one-fourth of the nation's population qualified to be in educational institutions, administrators could conclude that there is an overwhelming need to reinvent the way we deliver education. Just as important, institutions need to address the way IT professionals support teachers in designing their curriculum.

Today's students, most of them “technology natives,” are often able to process multiple multimedia platforms concurrently. This shift from traditional education has brought about a multitude of innovative pedagogical strategies. According to Yun Jeong Park and Curtis J. Bonk, we have entered into a new way of teaching, one in which technology, the art of teaching, and the needs of learners are converging. Support from IT professionals who know what hardware and software options are available will help faculty tackle the challenges they face both programmatically and fiscally. In particular, IT professionals who know how to support the complex, cloud-based technology of virtual worlds can help faculty adopt and integrate this technology as an innovative practice for teaching, learning, and research.

Virtual Environments

Virtual environments allow faculty to create a world that encompasses anything they can dream up. The collaborative environment provides synchronous communication and interaction among students, faculty, and other “in-world” residents. This social interaction and the relationships that develop between and among students and others create a community of learners. For example, a faculty member can immerse students in learning design principles by having them explore a museum or, better yet, collaborate on a design project that allows them to build a three-dimensional (3D) object that encompasses the design principles.

Interaction, simulation, and collaboration enable learning in the interactive environment. Let’s suppose a chemistry teacher is trying to teach students about the greenhouse effect of carbon emissions on Earth’s atmosphere. A traditional instructor might cover content from a book, in a presentation that discusses how these gasses affect one another. But in a virtual environment, the instructor could have the students build the solar system and could develop a simulation that presents how burning fossil fuels will impact Earth’s ozone layer. The simulation would immerse the students in multiple learning strategies: critical thinking on how to design the simulation, mathematical calculations, scripting objects, collaboration for the construction of the solar system, analysis of greenhouse gasses and how they impact the environment, reflection on the process, and presentation of the material. The benefits of learning within a virtual environment vastly outweigh those provided by traditional methods; virtual worlds promote a greater in-depth knowledge of the content, process, and applications, facilitating an authentic learning experience.

Chris Dede notes that additional shifts have taken place not only with the instructor but also with the student: roles, relationships, power, discourse, centrality/peripherality, and ownership of knowledge. Notably, students are taking ownership for the level of learning they receive within the interactive environment by engaging more in the learning. The experiential learning processes involve a higher level of interaction, which evolves as student and teacher participate in discussions, collaborations, feedback, and shared content knowledge.

Constructing an effective virtual environment to enable experiential learning can be a challenge, however. The design and the delivery of the material are multifaceted processes. Support is required from IT professionals for the instructional design, technical training, computer literacy, and technical issues associated with starting a virtual program.

Factors to Consider

The framework for creating a learning environment has long been established by the foundations of instructional design theories and models. But before educators move forward with the integration of a 3D virtual environment, they need to understand the 21st-century environment in which current students are learning. Whether an instructor is in a K–12 school, a technical training school, or an institution of higher education, the classroom has expanded to include much more than the teacher and student in isolation. Today's classrooms are a web of students, teachers, and administrators who interact...
with families, local and global communities, and businesses and industries—all through the use of social media tools available via the Internet. The challenge that faces all teachers is determining who their audience is, understanding the content, and determining the best approach to deliver that content.

IT Professional Support

Working with 3D virtual environments is not always intuitive. Doing so requires faculty to rethink how the course material is structured and delivered. They need technical assistance to make tough instructional design decisions and move the process from inception to implementation. Faculty should not be expected to be the technology experts; rather, they should focus on their strengths and should utilize the support that is provided by IT professionals.

Most higher education institutions include an IT division that supports instructional design efforts. These technologists can provide technical and instructional design expertise so that faculty can enhance the course delivery. The IT assistance is critical, since faculty have many factors they must consider when changing the way the content is delivered in a 3D environment. Some tools—such as Skype or a course management system—require less assistance than others. However, virtual environment programs are highly complex and require technological skills that some faculty may not be equipped to develop. For example, many virtual learning objects must be created from scratch and must be scripted to make them interactive. It is thus essential that the technologist consider the faculty member’s desires and needs and translate them into a way to provide students with an effective learning environment. A technologist should develop a storyboard or outline, which will help map out how the technology will be used to enhance the course. The storyboard provides faculty with a visual map for outlining the techniques that foster immersive, hands-on activities. Furthermore, the textbook, syllabi, assignments, course packs, and current means of delivery should be examined as the course transitions from a traditional or online course to an immersive 3D course. Ultimately, this will lead to endless possibilities for providing students with a unique learning experience that allows students to apply the material to real-life experiences, making the learning process collaborative, interactive, and authentic.

Conclusion

Like all other teaching and learning methods, online environments can be either an advantage or a disadvantage to the learning process. Technology in and of itself is not the solution to increasing student learning. Technology is a tool to be combined with a teaching method to influence the way in which a student receives, processes, learns, applies, and reflects on the content. Educators and technical advisors not only seek to teach students about the content; they also explore ways to engage students in the learning process. Educators must be lifelong learners willing to understand the ever-evolving teaching practice. Technology is going to continue to change the very nature of the educational system through the use of social collaborative applications. Working together, the technologist and the faculty member can combine their skills and address the present and future educational needs of the students of today.

Notes

5. Hilary Perraton, “A Theory for Distance Education,” in David Stewart, Desmond Keeegan, and Borje Holmberg, eds., Distance Education: International Perspectives (1983; reprint, New York: Routledge, 1988), pp. 95–113. According to Jean Lave and Etienne Wenger, the concept of learning is not simply internalizing information and knowledge but is a personal transformation defined by participation in a social community that fosters communication and interaction: Situated Learning: Legitimate Peripheral Participation (Cambridge: Cambridge University Press, 1991).

Elizabeth M. Hodge (hodgee@ecu.edu) is an Associate Professor in the College of Education at East Carolina University. Sharon Collins (collinss@ecu.edu) is Project Manager at East Carolina University.