Introduction

As representatives of the Center for Instructional Innovation (CII) at Western Washington University, Karen Casto and I presented the following information last fall at the Asynchronous Learning Networks professional conference in Washington, D.C. I work in the CII as an Instructional Design Specialist. Karen Casto is the CII’s Program Developer and overall project leader. We have the fortune of working with a talented group of student technology assistants, whose work was showcased in this presentation. At the Center, our team works with Western’s faculty when they wish to develop innovations for their courses.

At our recent conference presentation, we found that most of the 120+ attendees were instructors, instructional designers, and multimedia developers, primarily from higher education. Our intention was to plant a seed of inspiration to make teaching and learning connections in the virtual education curriculum.

Our presentation outlines our online teaching and learning impressions and experiences, the student-instructor-course connections that can be made, and some interesting interactive examples. Much of my contribution to this presentation was drawn from both my experience being an online graduate student and my experience teaching a purely online course called Instructional Design for Multimedia.
Impressions

As I began working at the CII, I enrolled in my first online course in graduate school. My colleagues and I were excited about experiencing distance education first-hand, yet I found many of them dropping the course, complaining outside of class, or simply not very engaged in the course. I was immediately smitten with the prospect of learning more about the online learning experience. When I investigated further, I found that the research supported my experiences.

- The dropout rate in distance education courses is 30-40% higher than in face-to-face instruction (Institute for Higher Education Policy, 1999).
- A learner’s attitude about technology has an effect on their experience (Carr, 2000; Repman & Logan, 1996).
- Some online learners feel isolated without the social interaction of face-to-face instruction (Rangecroft, 1998; Repman & Logan, 1996).

Weaknesses in online communication include the lack of:
- Eye contact
- Gestures & tones of expression
- Laughter
- Spontaneity of expression
- Instant response to ideas
- Adaptation of teaching style based on student feedback

Online, we have to word our critiques carefully so as not offend. It can be very time consuming to say it with a smile in a written format. While I often laugh at some of the comments made in the online discussions in my class, the writer cannot hear me and the class is not spontaneously caught up in a shared experience that builds cohesion. It’s possible for students to post very thoughtful comments without ever seeing a response or spurring further discussion. In the course of discussion, the immediate redirection of a train of thought can be very powerful. Teachers cannot easily adapt their teaching style based on student feedback. Some of these weaknesses are made more evident with the passage of time between getting information and designing the assignments or providing responses.

Instructor Connections

As an instructor, I strive to make connections with my students. While my focus in this presentation is not to cover all the creative uses of online tools, I urge instructors to explore the options available to them. Many of the weaknesses in online education can be often be addressed by designing effective assignments. Group activities are essential to get students motivated, connected, and made responsible for their online participation.
Sometimes something as simple as a graphic image can really help make a point. This example of a map drawn showing the locations of the students in my course demonstrates that I value each course participant and their unique place in the world. I also provided the students with a similar image with the time zones listed to help us schedule “live” chat discussions.

In making connections with students in an online setting, it is especially important to forge a communications relationship.

- Ensure learners have access to you just as you would in a face-to-face class, letting them know the best method for contacting you and your expected response time.
- Gather information as you normally would with 3x5 cards, by using an online Student Information Form.
- Just as you would ask “Any questions?” at the end of your first meeting in a face-to-face class, provide an online open question forum to clarify the structure of the course, the expectations for the syllabus, etc. This could be done via an asynchronous threaded discussion or “live” chat.
- Introduce yourself and include yourself. For the online course I taught, I videotaped an introduction of myself, explaining my motivation for teaching the class, and showing some visuals of the Pacific Northwest and WWU. I made the streaming video available on the web.
- Provide a forum for student input such as an online student information form or an assignment such as this Communications Agreement, where students were able to form a shared agreement for interaction in the course.

Connections Between Students and their Course Materials

The first portion of our presentation emphasized the connections that instructors can make with their students and that students can make with each other. But there are other important connections that can be made to maximize students’ learning and their satisfaction with the experience.

Think about the things that seem to engage young adults’ interest today. What environments interest them? Social interactions are very important, obviously, and popular culture provides many opportunities for young adults to interact. There are also certain mediums that these young adults seem drawn to, for example video games. I probably know way too much about Sega and Nintendo, probably as a result of being the mother of two boys. Video games are very important leisure activities for them, and my oldest is also very interested in the technology involved in making a 3D video game.
world. He and his friends have been making small video games for the past couple of years, and I often find myself drawn into their world.

At about the time I was spending an inordinate amount of my time at home learning how to properly swing from tree to tree in Donkey Kong 64, Professor Linda Smeins, a professor in the Art History Department at Western, approached me with a request. She had recently traveled to France, and had been taken with the fact that if she could have just “transported” some of her medieval art and architecture students to that world, she was sure that they would find the subject matter they were studying both more interesting and more relevant to their lives.

We approached the project initially by thinking about creating some Quicktime panoramas that her students could explore. My son approached me that evening with a problem he had rendering an alien world for his new role playing game. He had found a 3D game engine on the Internet that was free for developers to use to create computer video games. I realized that we could use this 3D game engine to create a virtual medieval world that Professor Smeins’s students could explore. The students could in effect be “transported through time” to a medieval village, just as Professor Smeins had requested. She kindly supplied research materials on how medieval French villages looked, right down to the detail on the cathedrals, how the towns were laid out, and how the rest of the buildings and people looked (see Figure 1).

Figure 1. Sources of Information about Medieval French Villages

The Center for Instructional Innovation employs several talented students, including Mary Jo Fairburn, who was interested in 3D graphic art and programming. We formed a team to explore the possibility of using a 3D game engine to create a medieval world that could be explored. We also thought it would be useful to provide a transition to the medieval world, so we created a short movie that would serve as a way for students to orient themselves to this new world. It involved a hypothetical student being “sucked in” to a medieval world by a time-traveling monk. We shot the short introductory
movie on location in our own library’s reading room. Figure 2 is a screen capture from the Medieval World that was created with the 3D game engine.

**Figure 2. Screen Capture from Medieval French World**

There is evidence that immersive environments such as the 3D world created for Professor Smeins’ course can strengthen connections between students and their course materials by making the materials more relevant to learners’ experiences, by providing them with opportunities for interaction and exploration, and by using multiple channels or modalities to reinforce and deepen learning (Casto, 2001).

The next example is slightly different, but it still keeps up with the basic theme of helping students become engaged and connected to their course materials. We used [Microsoft’s Agent program](https://www.microsoft.com/agents) to create a web page in which students can interact with a “character” to create a rocket in a hypothetical Blackboard on-line course. Another talented student technology assistant at the CII, Joseph Bengtson, wrote the “script” and did most of the programming for this example. We call it “Robby’s Retro Rockets” (see Figure 3).
As you can see, this is an example of a technology that can be delivered on a web page. There is no requirement of special server setups; the program that runs the robot is all scripted into the web page itself, and can be uploaded directly to a server without anything special being done to the server. It is cross-platform, although it currently runs best on Internet Explorer, because it relies on a Microsoft Program. Those students who don’t have the necessary free program to view the agent are prompted to download it right from the web page. If you have a blackboard account on Western’s system, you can go to [http://courses.wwu.edu/courses/rs101-kc/](http://courses.wwu.edu/courses/rs101-kc/) (be sure to use Microsoft’s Internet Explorer web browser) and then select “course information” on the left to view the interactive web page. If you do not have the Agent program installed, you should be prompted to download the program directly from the web.

We customized this program even further for our presentation by recording an actual human voice to be used by the robot. The program itself has several other capabilities, including support for other languages. Speech balloons also pop up when the character speaks, which can help those who might have difficulty understanding the robot’s voice, or who don’t have a functioning sound card on their machine. Any voice could be recorded to use with the agent program (of which there are many available besides the robot). This again personalizes the technology, making it more likely that students will feel connected to the instructor and their course materials.
Summary

The examples we have presented in this paper are all illustrative of the fact that students can be drawn into their learning materials more effectively if they feel connected with their instructor, with other students, and with their course materials.

Making the learning immersive and interactive means that students are more likely to explore and become engaged with the subject matter. Using various instructional technologies, and presenting the material in different modes, through text, audio, video, and interactive web pages, addresses the need to expand the learning environment and embrace different learning styles of students. By making the students feel more connected to their on-line learning environment, we more effectively and efficiently build a community of learners.

References


Supplemental Information

Agent Technologies

Microsoft provides links to resources and downloads that can be used to develop web pages or self-executing scripts that contain agent technologies. The agent home page is available at:


Microsoft also provides tutorials and code samples on building characters for the Agent program. This information is available at:


The MASH program is shareware that was developed to create agent web pages and self-executing scripts without having to know any VisualBasic script, the underlying scripting language for agent pages. This program makes it very easy for even a novice user to create an agent web page. The shareware program is available at:

http://www.bellcraft.com/mash/

Genesis 3D Game Engine

This game engine was used to create the 3D medieval French Village. More information can be obtained at: http://www.genesis3d.com. This is an open source project, with a large active developers’ community sharing code, tips, tricks, and procedures to create 3D worlds.


3D Studio Max and its associated program, Character Studio, are not free programs, but are very useful if you wish to create 3D characters and objects to add to your 3D world. You can obtain more information from Discreet’s website at:

http://www2.discreet.com/
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