

# Virtual Worlds Impact on Various Aspect of Student Learning

By Dr. Amy Fox Billig

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A significant component of my ninth grade computer applications curriculum is devoted to digital citizenship and cyber safety. In 2009, a colleague and I wrote a solid curriculum addressing digital citizenship, creative content, and copyright law as well as various aspects of cyber safety including cyber bullying, revealing too much information, tracking, grooming, social networking, and texting while driving. This was in response to e-rate mandates. We brought in components from pre-published material as well as articles, videos, and online research. The lessons were well planned and activities were interesting albiet routine. Social interactions were often forced among group members.

After teaching two semesters of the course this way, I wanted to see if I could use virtual worlds to create a more engaging environment that would still support learning and critical thinking skills. It made sense to teach online skills in an online environment that supports constructivist, constructionist, and social learning theories. I developed a quantitative action research experimental design study to test whether this was possible.

That spring, another colleague and I created our own self-hosted open-sim grid, *Grand Central Grid*. We developed the region to support instruction and restructured each of the lessons to better fit a virtual environment while preserving the content. We were ready to use this environment by the fall semester of 2010.

Content delivery in the virtual world was through the use of inworld instructional media and interaction with the content as it is being delivered. The delivery methods included: reading; researching; presentations; videos; social networking profiles; Facebook Security Day; inworld group discussions; inworld group written assignments; inworld constructions; inworld role-play; and the creation of an inworld screencast public service announcement on any one aspect of the unit taught.

Students of digital citizenship and all group discussions and work was done within group pods. Pods are simply a group of sitting-cushions in a circle that are lifted into the air and each group is out of text reach of other groups.

One project in the digital citizenship portion of the unit involving the use of the discussion pods and content construction was creating representations of the four fair use factors. Groups of students had to construct objects or scenarios in the virtual world that depicted fair and unfair use of one of the four factors of fair use. The groups first met in their pods to brainstorm ideas for the factor they



were assigned. All conversations were text based since members of the groups were dispersed in the physical classroom.

One group, illustrating the factor regarding the content's impact on the market, chose to build an iPhone© and a PearPhone with a bar chart showing the rising sales of the PearPhone compared with the iPhone©. Another group, illustrating the factor regarding educational use, created a classroom with a copyrighted poem to read and study in class and then a computer screen showing a blog posting that poem as if it were the blogger's original poem. After the project, the groups went back to their pods to discuss questions regarding the four factors and to submit the answers to the teacher on an inworld notecard. The researcher was able to monitor each group's text chats and refocus and redirect the conversation as needed.

Another activity in the virtual world was about profile security. Each avatar has a profile that other users can access. After a class discussion on safe practices, students completed their inworld profiles. The next day each student's profile was displayed on the white

board. The rest of the class was able to review each profile and make suggestions for further safety improvements. This activity was followed by *Facebook Day*, an activity in which both groups participated.

On *Facebook Day* the students were shown all of the safety features available and locked down their accounts to make them visible only to friends and to prevent third party applications from accessing their personal information. They also modified their profiles appropriately.



Role-play in the virtual world was used to have students learn and practice how to react and behave in various online situations. The students played a role-playing game in which each student was partnered anonymously with another student inworld. Each was to try to simultaneously elicit the real life identity of the other while protecting his or her own identity in instant messaging chat. Their text conversations were logged, evaluated, and reviewed with the students. The final project of the unit was to create public service announcement videos inworld using the screen-capture software Jing. These videos, called Machinima, were then brought into iMovie for final editing. Students in the control group engaged in the same activity, but did their filming in the classroom and school.

The results of the study were encouraging. The data supported the null hypotheses that integrating the virtual world into a federally mandated curriculum on Digital Citizenship

and Cyber Safety was equally as effective as traditional methodologies with respect to student achievement, higher order thinking skills, and test motivation. This was consistent with a significant body of research finding that online-learning, or e-learning, is as effective as face-to-face learning. Informal observations of the classroom showed increases in engagement, staying on task, socialization, and risk-taking.

The success of the work we did last year encouraged me to continue teaching the curriculum in a virtual world through the 2011-2012 school year. We are currently using Jokaydia Grid and have again developed a structured learning environment there where our students can work, learn, play, create, and demonstrate understanding of content. We invite all to visit our class region, *The Den*, to see the great work our students are doing.

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