

Game Design and Social Media in a Middle School Classroom

Laura Minnigerode, World Wide Workshop, Austin, Texas, laura@worldwideworkshop.org

Abstract: Game design programs are becoming more common in middle and high schools. The Globaloria program, which combines game content research and media literacy with computer programming and game design in a social media setting, is used by thousands of students in several states. This paper presents qualitative and survey data from students at one charter middle school where all students participate in the program daily. Early results from a longitudinal study show some promising increases in student self-efficacy with regard to their ability to solve technological problems in the Globaloria classroom.

Research Methods and Procedures

The presenter is an educational researcher who is based at a charter middle school that primarily serves low-income, minority students. All students at the school are enrolled in Globaloria, a game design and media exploration course that is both a social media platform and a game design-learning curriculum. This longitudinal research project follows cohorts of 6th graders, who will continue to take the Globaloria course daily each school year through 12th grade. The research question explored here is 'Does engaging in the Globaloria program increase students' self-efficacy with regard to solving technological problems?' The participants were two cohorts of students, (a) 6th grade students who are in their first year at the charter school and in the Globaloria course and (b) 7th grade students who are in their second year at the school and in the Globaloria course, were administered a self-efficacy survey four times over the course of the 2010-2011 school year. The research-based 11-item survey (Bandura, 2005), was designed to measure three dimensions of students' self-efficacy in the Globaloria classroom: (a) academic/technology, (b) social support for learning, and (c) self-regulation for learning. For each item, students rate their level of efficacy on scale from 0-100. Students also participated in one-on-one interviews about their work, ongoing classroom observations, and reflections about their game-design work on a blog, the results of which offer qualitative insight into the growth of technological self-efficacy, pre- and post-program surveys, school attendance and state assessment data. A literature review of middle school student self-efficacy in relation to career and educational aspirations will be available at worldwideworkshop.org/reports (Minnigerode, in press)

Results with Discussion

Table 1 presents the average change in student reported self-efficacy on the technological subscale from the beginning of the year (Time 1) to the end of the year (Time 4) by grade level cohort and gender. Although all students showed increases in almost every aspect of technology self-efficacy, the students in their first year of the program (the 6th grade cohort) reported less change from the beginning of the year to the end of the year that did students who were in their second year of the program (the 7th grade cohort). The researcher hypothesizes that this is because 6th grade students, who are new to the Globaloria class, may overestimate their ability to solve technological problems in comparison to students who already have been in the course for a full year.

	6 th grade girls (N=44)			6 th grade boys (N=45)			7 th grade girls (N=44)			7 th grade boys (N=42)		
	T1	T4	change	T1	T4	change	T1	T4	change	T1	T4	change
How confident are you that you can...												
figure out new things about editing the wiki	75.3	78.1	+2.8	82.4	77.6	-4.8	72.8	87.4	+14.6	74.6	80.6	+6.0
put your thoughts and ideas into words that are easy for people to understand on your blog	83.5	84.0	+0.5	72.3	79.7	+7.4	72.7	84.8	+12.1	75.8	84.0	+8.2
figure out what to do when you get stuck on something doing Flash	71.4	79.1	+7.7	73.3	77.0	+3.7	61.5	83.8	+22.3	65.0	80.6	+15.6
search on the Internet to find help when you get stuck on	77.0	74.9	-2.1	81.8	87.3	+5.5	74.9	84.8	+9.9	75.7	84.0	+8.3

something												
Overall change			+2.2			+3.0			+14.7			+9.5

Table 4: Average change in technological self-efficacy items from the beginning of the school year (T1) to the end of the school year (T4).

Students also discuss their self-efficacy in written narratives. Table 2, below, summarizes student blog entries about their confidence as game programmers. Each of these comments has to do with students' experiences using Flash.

Sixth grade boy:
<i>The hardest thing about the game design was the codes I had no idea where to put most of them. I'm proud that I finished this game and I made it fun. May 16, 2011</i>
Seventh grade boy:
<i>I have learned how to use flash very well so far but not a master. I can improve a lot this year in many ways like learning how to use the jumping code on flash because that thing confuses me! May 23, 2011</i>
Sixth grade girl:
<i>It was so hard getting the game to work and finding the codes to make it work. Even when talking with the group and choosing what we wanted in the game. I learned that my way is not always the right way. May 16, 2011</i>
Seventh grade girl:
<i>I have learned to put almost every code in flash perfectly without struggle. May 23, 2011</i>

Table 5. Student blog entries about programming in Flash.

Evaluation of student work, classroom observation and interviews provide further rich detail about student experience as programmers. (See Figures 1 and 2 below). Research to align these sources is ongoing and publication of a more complete synthesis is forthcoming.



Figure 17: Student prototype



Figure 2: Student interview "There is a whole lot of different things I am doing in Flash...."

References

- Bandura, Albert. (2006) Guide for Constructing Self-Efficacy Scales. In Self-Efficacy Beliefs of Adolescents, 307–337 Tim Urdan, Frank Pajares, 2005 by Information Age Publishing. Retrieved from <http://www.ravansanji.ir/files/ravansanji-ir/21655425BanduraGuide2006.pdf>
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Acknowledgments

Research funded by the AMD Foundation and Changing the Game and supported by Dr. Idit Caperton. Statistical analysis and research support provided by Catherine Malerba, PhD