2011 iSTEM Chancellor’s Award Report

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The 2011 iSTEM Chancellor’s Award for Excellence in STEM Education afforded me the ability to setup and begin my dissertation research on the iPad Enhanced Active Learning (iPEAL) project. My investigation has yielded a variety of findings that I have shared via presentations and are currently being prepared for publication. Through this process I have also honed my research questions, which I will be continuing to investigate throughout the next year.

I have collected data from a variety of sources, including weekly classroom observations, teacher journals, classroom videos, student interviews, student surveys, and classroom artifacts. Because much of the class has been conducted using digital resources and has produced digital products, there has been a wide range of digital artifacts that I have been able to collect. Of particular interest are artifacts that include student communication, such as screencasts. Screencasts are videos created that show the screen of the iPad and record the audio from the iPad’s external microphone.

My findings from the Fall semester of the 2011-2012 school year drove my research agenda for the Spring semester. My Fall findings fit within three broad categories:

1. Communication and learning
   a. Digital techniques spread rapidly
   b. Students demonstrate quick mastery and fluidity
   c. Students engage in new forms of peer communication
2. Project and tool valuation
   a. Students desire to be a part of the project
   b. Students value the tool and want to make it work
3. Engagement
   a. Students are engaged in iPad activities
   b. Students enjoy using some tools

I presented these findings in a DBER presentation at the end of the Fall Semester. From these findings I further refined my research question to look at how student engagement in scientific discourse and practices is affected by socially interactive technology. I also identified the use of screencasting and voicethreading to be two specific activities that had a significant potential to alter student roles within the classroom.

Combining the findings from my first semester with the research that I am currently engaged in, I am working on producing a publication and a presentation that demonstrates how the iPad has facilitated the shifting of student roles and identities. Specifically, students are increasingly blending their roles as students (receivers of knowledge and producers of required work) with those of instructors
(sharer’s of knowledge and leaders of activities) and scientists (creators of knowledge and communal feedback).

These most recent findings are driving my research question going into the 2012-2013 school year, where I will be collecting my second year of data. These two data sets will be utilized to inform my dissertation writing during the 2013-2014 school year.

The iSTEM Chancellor’s Award for Excellence in STEM Education has been critical in providing me the resources to follow my own research interests, as well as creating opportunities for me to share my findings and to receive critical feedback on my work. I expect that the connections I have created with the iSTEM community through this experience will continue to be productive in shaping my research and helping direct it fruitful directions.