ARTstart "Art and our lives"

A pilot program to study the effects of ubiquitous computing

Scenario

I am considered a leader in the contemporary art scene in New York City. I am also a high school Art teacher. At a recent National Endowment for the Arts (NEA) conference a group of area art teachers took the opportunity to write a grant proposal that would involve the use of ubiquitous computing in the classroom. The NEA accepted our proposal and asked that we submit the plan in more detail so the logistics can be worked out. The following plan describes a unique educational program involving public high school, community arts, and ubiquitous digital learning devices.

Program overview

In the pilot program of **ARTstart**, there will be 2 groups of 20 students. Group A will be equipped with mobile devices and classroom technology for recording, creating and sharing their experiences, Group B will use traditional note-taking and presentation methods to record and present their experiences. The "experience" is to attend an art performance or exhibit and then explore creative storytelling with and without mobile technology.

Each group will have 1 Art Teacher, 1 English Teacher, and a group of 20 high school students. The general goal is to test the effectiveness of mobile technology in and out of the classroom. This program will take place over a 3 week session that integrates the student's Visual and Language Arts coursework. It is given that students have skills necessary to create digital presentations from the collected raw data. The goal is to build connections between the arts, the students, their ubiquitous mobile devices, as well as provide research data regarding how ubiquitous devices effect learning. Especially concerning effectiveness of method in the areas of student motivation, critical thinking, and creativity.

While this program is carefully designed to test for improved performance in using ubiquitous computing over traditional means. All participants are asked to administer the program in an unbiased manner. Such that, Group B- using traditional means to record experience is presented as having equal value.

Rational for the program:

In her report *Pockets of Potential: Using Mobile Technologies to Promote Children's Learning,* Carly Shuler points out that today, mobile technologies – originally marketed as communication and entertainment devices – have come to play a significant role in society at large. She then poses the question, "But what role do they play in children's lives, and how are they currently being leveraged to advance learning?" (Shuler, 2009, pg 12)

The original impetuous for the **ARTstart** program was to attempt to answer that question and come up with a creative way to leverage ubiquitous technology to improve learning. While we are generally in support of mobile technology in the classroom, we are aware of the considerable responsibilities that it entails. We are prepared for research outcomes that may not fully support the construct of mobile technology in the classroom. Our efforts are in part to help with the decision of how to move forward in our pedagogical approach.

Our students learn and think differently than they did before mobile technologies and educators need to address this difference. Innovations in communications and digital technologies have the potential to dramatically change teaching and learning, according to Robbie McClintock. In his book The Educator's Manifesto, he prompts us toward pedagogical changes that help us to understand our role as educators in "teach(ing) students how to deal with unlimited knowledge purposefully and effectively. (McClintock 1999)

Yes, students think and learn differently today, but some things are constant. In *Learning Bridges: A Role for Mobile Technologies in Education,* the authors point out that children learn more effectively when they are in a more challenging environment than a school classroom, when they are investigating an open question of real interest, and when they are

Rational *continued:*

accompanied by an adult guide, (but also) where mobile technology gives them rich and relevant information in context, and where they can make connections between formal knowledge and personal experience. (Vavoul, Sharples, Lonsdale, Rudman, & Meek, 2007)

Our efforts going forward with **ARTstart** are in support of a more learner-centered environment where, as Seymour Papert describes, students are constructing and manipulating "quasi-concrete" representations of knowledge on computers, and form(ing) more robust internal knowledge structures. (Papert, 1993) We also wish to provide the NEA with professional research outcomes since successful pedagogical change requires a solid foundation of quality research.

What is provided:

The National Endowment for the Arts has granted a generous sum in the amount of $15,000 to a pilot project on ubiquitous/mobile learning as it relates to the Arts. Funding has been allotted for:

- Mobile phones devices for 2 groups of 20 students (40 phones/$8,000)
- Training assistance for students and teachers ($1,000)
- Ticket vouchers for theatre, music, dance, and art events (40 tickets/$1,000)
- Software Adobe Premier Pro or similar if needed (some schools will have basic video editing capablility) (TBD)
- Educational research and assessment consultant fees ($2,000)
- Program development costs if expansion of the program is justified pending evaluation by NEA. ($TBD)

Goals:

The following goals were established for the project in two categories Student learning goals and Project learning goals. Student goals detail aspects of the program that will benefit the students. Project goals are the overarching goals for the program in general, as they relate to research and promotion of ubiquitous devices in the schools.

Student learning goals:

- Inspire creative approaches to using mobile devices
- Make connections in student lives from outside to inside the classroom
- Improve vocal articulation and communication skills
- Develop storytelling skills and presentation skills
- Prompt students in answering the question "Is Art important to me and why?" Art awareness
- The importance of copyright laws, how to request permissions, and how to cite sources
- Encourage personal interpretation of the arts

Project goals:

- Examine and compare various student approaches to the project
- Make learning relevant and interesting in a constructivist learning environment
- Help students make connections between their interests and lifelong learning
- Examine effectiveness of mobile technology in the areas of motivation, interest, critical thinking, and creativity
- Track results and inform future research in ubiquitous computing
- Study student feedback to help determine future project direction

Hardware and software specifics:

One group is equipped with mobile devices for recording, the other group will use traditional note-taking and presentation methods to record and present thier experiences. This project will utilize existing school computer lab and presentation capabilities and new mobile devices. Smart phones will utilized to collect audio and video clips to record moments from the art exhibits and performances.

Hardware:
The primary tool for this project is the iphone. Other materials will typically be available in school computer labs.
- 40 iphones (2 groups of 20 students) equipped with basic built in audio and video recording capability
- HDMI (High-Definition Multimedia Interface) cable
- Class Television or other AV display compatible with HDMI cable

Software:
There are several different software programs being reviewed. This list reflect our current plan.
- Voice Memo- to be used to record student voice narration or interview.
- Audacity- to be used to edit student voice narration and interview if applicable
- Adobe Premier Pro or similar if needed (some schools will have basic video editing capability)

Evaluation basics:

A detailed Rubric is under development that will help teachers and program administrators at NEA evaluate the quality of the final presentations. The rubric specifically addresses critical thinking, and creativity. This rubric is key in helping to establish the impact of technology on the learning.

Students will also be given a before and after questionnaire to elicit impressions of the project and self evaluation. The pre and post tests are designed to address student motivation and interest.

Observation and checklists will be filled out by the project coordinators the Art Teacher and the Language teacher. Identical checklist filled out independently will ensure confidential and comparative results. There will be specific focus on the students ability to use technology purposefully and effectively.

Further recommendations:

As research data becomes compelling, the best case scenario for this program would be split among different school districts, so that there are several Group As occurring at different schools, and several Group Bs occurring. Each unbeknown to the other. This would keep the data clean and would prevent students from having a negative response to the Group B placement (no technology).

A website could be established where teachers and students can upload and share both the technology enhanced work from Groups A and video recording of the traditionally presented work from Groups B. It would share gathered research and attract potential program participants.

Being entirely mobile, the purchased equipment can move from one school to the next. This would allow it to become a "traveling" technology in education research effort, maximizing the learning and research potential as well as the initial monetary investment.

References:

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