PSAs: A Vehicle for Student Innovation in Technology Education

Larry Lambert

Fitchburg State University

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Author Note

Larry Lambert, Department of Technology Education, Fitchburg State University

Correspondence regarding this article should be addressed to Larry Lambert, Technology Education Department, North Andover Middle School, 495 Main Street, North Andover, MA 01845. E-mail: lambertl@northandover.k12.ma.us

Abstract

In order to present students with projects that are motivating and provide them with authentic learning experiences within the realm of technology education; teachers must afford students the opportunity to be innovative. These projects must be challenging, interesting to the students, offer them choices and produce an artifact. This work outlines one specific project, where students are required to create a public service announcement and describes how it satisfies these requirements. This project also seeks to provide students with the opportunity to exercise Twenty-First Century Skills and display their technological literacy.

Introduction

Wikipedia defines innovation as the creation of better or more effective products, processes, technologies, or ideas that are accepted by markets, governments, and society. If we apply this definition to education, the first reaction of many educators would be to consider how they will assume the innovator's role in order to create better, more effective lesson plans. In their opinion, these plans will lead to better educated students. This approach treats students as the product. It is as if they were the modeling clay that these teacher-artisans will work their magic on, transforming them into masterpieces.

As teachers, we must look upon the lesson plan and the technology that we provide to students as our product. Innovative lesson plans alone offer little benefit to students unless they inspire the students to be innovative in their own right. If we do not offer students the opportunity to be innovative then we have failed to provide them with the type of education that will sustain them in today's world. By providing them with classroom and laboratory experiences that allow for innovation, we will be able to take the more effective educative role of facilitator in their education process. This is the paradigm that will maximize the learning experience for our students and endow them with the greatest long term benefit. (Wiggins & McTighe, 2005)

The purpose of this paper is to outline a design and technology activity that requires students to create a Public Service Announcement (PSA), providing them with the opportunity to be both creative and innovative. Within the project, students are required to choose the topic for their PSA, select the media that will be used to convey their message, design, develop and refine the PSA, and finally to deliver the finished product. The opportunity for innovation by students presents itself at the onset of the project and continues throughout the development process. In

completing this project, students will be exposed to 21st Century Skills and afforded the opportunity to have an up close encounter with authentic learning and experience the intrinsic satisfaction that results from a job done well. (Crawford, 2006)

Massachusetts Technology/Engineering Framework Connections

In completing the Public Service Announcement project, students gain a working knowledge of the content defined within two strands of the communications section within the Massachusetts Technology and Engineering Frameworks. They are: Strand 3.1 - Identify and explain the components of a communication system, i.e., source, encoder, transmitter, receiver, decoder, storage, retrieval, and destination and Strand 3.3 - Identify and compare communication technologies and systems, i.e., audio, visual, printed, and mass communication (p. 88). Students will demonstrate knowledge of Strand 3.3 in the selection of the medium they will utlilize to produce their PSA.

At the conclusion of the project, groups are required to document their creative process, including block diagrams of the communication system (source, encoding, transmitting, storing, retrieving, receiving, decoding) and universal system (goal, input, process, output, feedback) models. (Massachusetts Department of Education, 2006)

The Public Service Announcement Project

"The experience of middle school can often suffer from being … a time in the middle. Beyond the exuberance of elementary school and not yet at the challenges of high school, middle school students can at times find themselves unable to pursue an education that is particularly interesting and appealing to them." (Cutshall, 2003, p.26) Technology Education is a subject area better suited than most to provide students with authentic, project-based experiences that are

interesting and provide them with the chance to be innovative. The Public Service Announcement project is one such opportunity.

The project requires students, working in groups, to create public service announcements (PSAs) on a topic related to school activities or initiatives. On occasion, the creation of these announcements is solicited by organizations within the school community. "The interest and value students attribute to the problem and elements in projects will affect how motivated they will be to engage in the project." (Blumenfeld, Soloway, Marx, Krajcik, Guzdial, & Palincsar, A., 1991, p. 375) Blumenfeld et al. also conclude that student interest and perceived value are enhanced when: tasks are varied and include novel elements, the problem is authentic and has value, the problem is challenging, there is closure, so that an artifact is created, there is choice about what and/or how the work is done; and there are opportunities to work with others. Each of these factors is present in the public service announcement project which leads to it being well received and enthusiastically executed by students (Dewey, 1902).

The assignment provides students with several communication mediums to choose from when selecting a format for their PSAs. Available options include: creating a printed document, audio, video or website public service announcement. Students have the opportunity to participate in a variety of roles, ranging from script writing to editing so very few students are forced outside their comfort zone but all students are encouraged to expose themselves to a full range of experiences by becoming involved in all facets of the project.

After groups have settled on a format for their PSA, they begin the process of brainstorming possible approaches to conveying their message using the media they've selected. The groups that choose to create web pages and brochures produce hand drawn mockups as their prototypes. Groups that choose to pursue the audio or video versions of the public service

announcements produce a story board to serve as their prototype. The video version of the PSA is the most challenging format to complete but at the same time it is the one that is selected most frequently. "Rigorous projects help students learn key academic content and practice 21st Century Skills (such as collaboration, communication & critical thinking)." (Buck Institute for Education website, 2011).

PSA Project and Utilization of 21st Century Skills

Appropriate execution of the PSA project requires that students develop and exercise 21st Century Skills. "In 21st Century Skills: Learning for Life in Our Times (Jossey-Bass), a 2009 book Fadel co-authored with Oracle's Bernie Trilling, media literacy is identified as one of three 'critical' classes of digital skills for those entering the modern high-tech workplace." (Gordon, 2011). In an open letter to district superintendents, Massachusetts Department of Elementary and Secondary Education Commissioner Mitchell D. Chester, Ed.D. wrote, "The phrase '21st century skills' is broad, but to me means the application of academic content knowledge (literacy, English language arts, math, science, social students, including global awareness and financial and economic literacy) and skills needed to communicate effectively and persuasively, develop solutions to real world problems, and work productively by managing time and resources and collaborating with others." The public service announcement project epitomizes this statement with the communications strands of the Technology and Engineering Framework representing the academic content area knowledge. To successfully complete the project, students must develop their solution by working productively; managing time, resources and collaborating with their team members. In addition to the 21st Century Skills mentioned above, the project requires a fairly high degree of technological literacy.

PSA Project and Technological Literacy

"Technology education is a field of study that seeks to promote technological literacy for all students." (Wicklein, Smith, and Kim, 2009, p.65). The public service announcement project affords students the opportunity to innovatively apply technology to solve an authentic problem. In developing the video PSA, students must exhibit competence in the use of technological equipment including: video cameras, digital cameras, computers and a variety of application programs to produce and edit their video. Once the video has been completed, students will encode it and burn their production to a DVD. Groups will then have the opportunity to televise their recorded program over the school's cable television system. "The nature of design and technology is such that it should provide opportunities for students to engage in activities that are challenging, relevant and motivating." (Design and Technology Association website) The PSA project is one that has lived up to expectations in this regard.

Attracting Non-Traditional Students

Existing literature provides evidence that female students are discouraged from pursuing technology and engineering studies at an early age for a variety of reasons. Many of these reasons can be tied directly to the classroom/lab atmosphere that exists in these courses and to the projects used to present specific content (Silverman & Pritchard, 1996; McCarthy, 2009).

The structuring of the public service announcement project avoids many of the pitfalls identified by Silverman and Prichard within their study's findings (1996). Specific ways that this is accomplished within this project include: clear behavioral norms that have been established within the class and are adhered to, equipment that has

limited availability like video and digital cameras are scheduled through the instructor to prevent them from being monopolized by any group, language used by the instructor within the classroom is gender neutral or gender appropriate for when addressing small groups, allowing groups to select their own topic increases their engagement in the project, the generally creative nature of the project seems to appeal equally to boys and girls.

Accommodations for Special Needs

Since the project offers students options in selecting both their PSA topic and media used convey their message, it will require minimal adjustment for students on Individual Education Plans (IEPs) or 504 plans. Most students should have no problem completing all requirements of the project but if necessary students may be exempted from, or assisted with, specific areas that they are unable to complete alone.

Now Showing

"Any design and technological activity should be a learning experience whereby the students' repertoire of knowledge, skills and understanding is extended and applied in increasingly more diverse and sophisticated ways." (Design and Technology Association website). The PSA project allows students the opportunity to apply and extend their technology skills by designing and develop a public service announcement. The authenticity of the learning experience results directly from the fact that announcements produced by students are displayed and/or broadcast within the school community. This provides the students with feedback from their peers and the opportunity to experience the pride of a job well done.

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