Integrating Technology into the Music Classroom

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Abstract

Integrating Technology into the Music Classroom is a Challenge Based Research Project that explores technology-based teaching techniques to motivate and engage students. A literature review was created to examine student motivation, music education, and technology integration. Research revealed that technology could create an engaging and motivational environment for music students. Two Challenge Based Learning phases were conducted, in which participants participated in surveys, created music using the online audio creator and editor www.aviary.com, and created an RSS feed for peers to give feedback. Data collection showed that the target audience maintained a high level of motivation throughout the project. It was concluded through the project that the inclusion of technology in music education had positive effects on motivation and engagement.

Literature Review

Motivation and Engagement: Use of Technology in Music Education

Introduction

Music education classes in public schools have seen a decrease in enrollment numbers in the last few years. Many attribute the lack of numbers to interest, motivation, and a general lack of connection with traditional music. Educators, especially ones steeped in classical and traditional styles of music, are finding it especially hard to attract student musicians to fill their seats. With the students they do have in classes, motivation and engagement has also been an issue. A literature review was conducted to focus on

the issue of motivation and general lack of interest in music education. The review was segmented in three different parts: motivating students through music, motivating students through technology, combining music and technology in music education.

Motivating Students Through Music

Educators, in this day and age, have seen motivation and engagement in the classroom as a growing problem. This issue has affected all teachers, and has been researched extensively for solutions. De Vries (2010) presented research consisting of surveys, focus group interviews, and classroom observations, which examined the musical preference of students ages 12 to 13. The research findings revealed that the 86 students interviewed preferred contemporary popular music to the traditional music in schools; were engaged through new music media technology; they had awareness of the differences of music, in and out of the classroom; the students thrive on choices in music selection and activities; school can potentially hinder creativity in music; and students engaged in extracurricular music programs valued the opportunity to learn.

In similar research, and in an aim to involve students in the art of music, a National Curriculum in England was presented in 1988. Students, age 5 through 14, were expected to study music as part of the curriculum in order to help they build self esteem, creativity, and understand the world around them. The thought was that the curriculum would be more than just a musical outlet for students, but would help them understand themselves and others. Saunders (2010) research and statistical data suggested that 93% of students age 14 opt out of school music classes. The disengagement of students to the traditional music classroom setting was presented as a students' lack of finding the niche of music that appealed to them, the lack of choice in styles, and lack of support in pursuing their creativity.

Hammel (2003) discussed the importance of music education in the respect that music was multi-modal, meaning it crosses the kinesthetic, aural, and visual boundaries. Multi-modal instruction tended to appeal to the different learning styles, which in turn gave students a sense of accomplishment

and motivation to learn. McDowall (2009) conducted action research to determine the effectiveness of computer based music technology for use in junior primary teaching programs. Through a wide range of technologies, the students were able to demonstrate a comprehensive range of arts competencies and creative processes. The research collected used a range of qualitative techniques, including interviews, observations, and analysis of student projects. The research demonstrated that students who were taught using technology engaged in sophisticated and creative process that may not have been experienced in a traditional music setting.

Motivating Students Through Technology

In an analysis of research on Internet-Supported Learning Environments (ISLE) between 1995 and 2007, Bekele (2010) concluded that ISLE, compared to traditional learning environments are less structured, more student directed, and more project oriented. Student choice in learning was a big factor in how motivated students were to participate in the online studies. Inconclusive evidence suggests that ISLE was more effective at motivation and satisfaction than traditional means. Conclusively, ISLE was at least as effective as traditional means of education, and that the technology neither motivated nor satisfied the student.

Burns (2006), Dammers (2009), and Olson (2010) believe that technology has a larger impact on motivation because of the benefits of differentiated learning, reaching non-traditional music students, and the benefits of exposure to different learning tools.

Burns (2006) discussed the dilemma of teaching general music classes using technology, achieve the national music standards, and enhance the curriculum. The author determined that using technology to teach music can be a great way to help differentiate instruction along with reinforcing common musical concepts. Some students will often not respond to traditional movement and performance aspects of music classes, but will thoroughly be excited about learning music concepts with the aid of a computer.

Dammers (2009) outlined surveys done in the state of New Jersey to determine the extent that

technology was being integrated and emphasized in music classrooms from kindergarten to college. Through the survey, a new form of music class has emerged through technology utilization: the music technology classroom. These types of classes have given non-traditional music students a unique opportunity to broaden their exposure to different styles of music than was offered twenty years ago.

Research presented through Olson's (2010) article states:

According to Washington, DC-based Pew Research, 71% of children ages 12 to 17 owned cell phones in 2008, compared to 63% in 2006 and 45% in 2004. By comparison, 77% of adults owned a cell phone at the same time. Additionally, Pew reports that 74% of children ages 12 to 17 in 2008 owned an MP3 player; 60% owned or had access to a desktop or laptop computer; 77% owned a gaming console such as an XBox or PlayStation; and 55% owned a portable gaming device. (para. 2)

Olson (2010) asserted that students are not only interested in technology they expect it. Technology in the music classroom, although not always easy to work with, can be an effective enhancement to the learning process. Teachers that already use technology have insisted that the use of the technology has been effective in three areas: collaboration, cross-curricular activities, and to attract non-traditional music students in all levels of education. Demski (2010) discussed the programs of several music teachers, from K through 12th grade, who integrated technology into their music classes. These educators were seeing a lack of enrollment in their classes until they took a technology-based approach to music education. Once technology became a part of these music programs, enrollment increased, motivation to learn music grew, and many students continued the pursuit of music after high school.

Combining Music and Technology in Music Education

Carruthers (2009) believed that technology has given society many means and approaches to problem solving and expression. Older approaches of expression and attitudes have been replaced with technological innovations. Carruthers (2009) also believed that music, traditionally a means for

expression, may lose or gain effectiveness due to educational technology. Music may become the means to learn about the technology, which has transformed the way we live.

Lamb & Johnson (2006) give support to infusing music into education by means of technology. Music, considered an intelligence that can help develop and nurture the whole brain, has been cut from schools due to funding or testing and literacy programs. Crawford (2009), through survey and case study, conclude that technology used to facilitate contemporary music training could effectively engage students. Contemporary versus traditional music training, according to Crawford, would be more authentic and bring real-world experiences for the learner.

In a journal by Deutsch (2009), he asserts:

It is generally agreed that what we consider "modern" education began with the ideas of the eighteenth century philosopher Jean-Jacques Rousseau. He felt that education best takes place in a nurturing and self-discovering environment. He believed that music was best learned through the joy of songs and movements of play. And he believed that learning should be experimental rather than theoretic.

(p. 92)

Young (2009) contended in this article that the changes in music practice brought about through new technologies and cultural diversity have made profound impacts on our music culture. The changes, however profound, have barely impacted schools that remain in conventional methods although our world has been immersed in technological practices. This gap between the real world and what was taught in school was experienced for many on the first day of school. Savage (2005), in an effort to connect the importance of the arts to technology, interviewed and studied musicians of non-traditional backgrounds. The author (2005) concluded that traditional music education, melded with holistic music technology training and a safe atmosphere, may be able to reach more musicians thus brining them into music creativity much earlier in life. A national survey in England addressed the use of new technology in

traditional music classes. From the research and survey, Savage (2007) noted the following positive effects of technology use perceived by the teachers: (a) boys are more involved in music, (b) students are more motivated and show pride in their work, (c) students are given more self directed work, (d) lessons are more relevant to the real world (music industry), and (e) new approaches to learning are coupled with easier to manipulate technology.

Although there are perceived positive effects, teachers also noted negative ones, including: technical difficulties, loss of traditional music skills, lack of performance confidence, lack of social interaction, limited resources, varying student responses to the technology, and lack of quality in projects. Ho (2004), in a similar study, found that nearly ninety percent of students that responded to the survey felt that they would be more motivated to learn music if technology were involved in the lessons.

Conclusion

In summary, this literature review has given some insight, through the use of several articles, into the lack of motivation in music classes. This lack of motivation and engagement, based on research and surveys, can be alleviated through the use of technology. For some, this means that technology can be integrated into the traditional music class. For others, music classes could be transformed into music technology classes. Many of the implications of using technology to teach music include: motivation, engagement, collaboration, cross-curricular involvement, and increased enrollment by non-traditional music students.

Phase 1 Data

The essential questions for this Challenge Based Research Project are as follows:

1. How can non-band students be engaged to participate in a music class?

2. How can technology be introduced into a band class to increase motivation?

3. What are the challenges of introducing technology based learning in a fine arts program?

The problem that existed for phase 1 was the integration of technology into the music classroom for the purpose of motivation and engagement. The target audience for this research phase was a group of high school students, four female and five male, ranging in grade level of 10th through 12th grade, who are part of an advanced music class. Technology used in the phase was ten desktop computers with Internet access, audio interfaces, headphones, microphones, and a recording workstation.

The target audience was taken through a series of guided activities, which involved them setting up a free account with www.aviary.com, a Web 2.0 tool which includes several applications, two of which are loop creators and music editors. The target audience review teacher created tutorials to help them learn the ropes of creating their personalized loops, as well as creating their own song from a collection of free loops and tracks. Some students took the initiate to create lyrics to go along with their tracks and were given the opportunity to record their vocals and mix the tracks.

Once students were finished with their project, the music was converted to mp3 format, uploaded to a class site on the podcast hosting site www.podbean.com, and linked to iTunes as an RSS feed. The RSS feed was used as a form of feedback, which allowed peers to critique each other using the either the podcast platform or iTunes.

Data Collection

Phase 1 data was collected primarily through a pre and post survey that questioned the target audience, my band classes, about their interest in technology as a means to do class work and for creating projects.

Data from the Pre Survey confirmed some of the ideas presented in my research. Students tend to be more motivated when technology is introduced into classrooms where traditionally teacher led.

Nine students were surveyed on the level of motivation to do school work on computers. Of the nine that were surveyed 56% of the class was highly motivated, 33% were somewhat motivated, and the

final 11% were seldom or never motivated.

When students responded to the post survey regarding motivation to do school work on computers, 90% were of a high level of motivation and 10% were of a low level.

Phase 1 data confirms that 90% of the target audience were highly motivated, or would have a high level of motivation to work in a class where technology and software were used to enhance lessons.

Phase 2 Data

Phase 2 data is generally a repeat of phase 1, but involves a much larger target audience. The target audience for Phase 2 was from 3 band classes that range in age from 9th through 12th grade students. There were approximately 27 boys and 8 girls between the target audience groups. Technology and guided activities for this target audience group remained the same as the phase 1 group.

Data Collection for Phase 2

Phase 2 data was collected primarily through a pre and post survey that questioned the target audience, my band classes, about their interest in technology as a means to do class work and for creating projects.

Data from the Pre Survey confirmed some of the ideas presented in my research. Students tended to be more motivated when technology was introduced into classrooms where lessons were presented by a lecturer.

In the Pre-survey, 35 students were were asked about their motivation to do assignments on computers. The data resulted with 46% being very motivated, 46% being somewhat motivated, 5% seldom motivated, and 3% never motivated to do assignments on computers.

The Pre-survey also questioned the students about their motivation to continue in band if

technology were part of the daily class time. Students who chose a 6 to 10 motivation level on the scale resulted in 84% of the class. This data revealed that a majority of the target audience would continue in a music class if technology were available.

Phase 2 data confirms that 90% of the target audience was highly motivated, or somewhat motivated to work in a class where technology and software were used to enhance lessons. Fifty five percent of the target audience was highly motivated, 35% was somewhat motivated, and the final 10% didn't care that technology was offered in the class. Eighty percent had a high motivational experience overall from the music class. I was somewhat surprised that 20% of the target audience had a low motivational experience using the technology.

Challenge Based Learning Conclusion

There are many reasons for the presentation of this research project and literature review. There is a need for students to express themselves in music in traditional means, as well as in alternate forms of music instruction. Students have become a product of our society, which includes the technology that it offers. Technology in the classroom setting can motivate, which can lead to retention and spark an interest in pursuing music.

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