

The Impact of Technology on Music Classrooms

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Chapter One: Introduction

Introduction

In the society we are a part of, technology has become a prominent source of communication and knowledge. Technology is found at work and at home, we carry it as our cell phones and iPods, and it is used for research, to watch videos and play games. Catherine Applefeld Olson (2010) provides some statistics involving youth and technology in her article:

According to a Washington, DC-based Pew Research, 71% of children ages 12-17 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 12-17 in 2008 owned an MP3 player; 60% owned or had access to a desktop or laptop computer. (p. 30)

These statistics alone show how prominent technology has become in our society. Technology also has an important role in education. It has opened doors to research and communication. Students can now communicate with people in other countries and learn about their cultures. With inventions like SMART Boards, there are new interaction methods and lessons that can be formed to enhance classroom learning. In music, there are programs that have been developed to allow students with no music background to create music. However, there are many hesitations to incorporating technology into the classroom. Many of these hesitations can be attributed to lack of knowledge of the software available or the programs themselves. However, there are many advantages to using technology as well. The key is to use technology as a lesson enhancer, not as the sole foundation of the material being learned. However, technology is advantageous in more than just to benefit lesson. With technology being such an integral part of student's lives, it is also a source of motivation and sparks involvement in students who may not have been

previously interested. With music becoming less appealing to students, technology has the potential to bring the curiosity and appeal back. Previously, students who did not sign up for music lessons at an early age were severely disadvantaged or not allowed to participate in classes such as band. With the music technology, students are able to learn and appreciate music at a later time. Such advances include electronic instruments and a variety of sound altering software. This proposal will address whether technology has an effect on student's attitudes toward music when it is implemented in the class.

Problem Statement

The problem being focused on in this research proposal involves the decline of enthusiasm and enrollment in music classes. There are many factors that affect this problem including but not limited to the economy, lack of interest, and teaching materials that are uninteresting and out of date. Other issues include more interesting extra-curricular activities and lack of time being able to devote to practicing. All of these pose problems for the continuation of music programs.

Purpose of the Study

The purpose of the study will be to find if incorporating technology will grasp the interest of students and gain their interest in music. According to some of the literature found, technology opens the possibilities of music to more than just students who have an extensive background in music. While there is much literature incorporating the way technology can enhance music curriculum, there is little to no research involving technology affecting student's attitudes. I will attempt to address the idea that technology plays a role in students attitudes toward music when technology is incorporated into the lesson.

Definition of Terms

- Music technology: defines music technology as “inventions that help humans produce, enhance and better understand the art of sound organized to express feeling (Webster, 2002 as cited in Karlsson, Liljestrom, & Juslin, 2009, p. 176).
- Digital Natives: “native speakers of the digital language of computers, video games, and the internet” Prensky, 2001, as cited in Savage, 2007, 65). They do not know of a life without these technology advances.

- Digital Immigrants: People who “have been fascinated by and adopted many or most aspects of the new technology but always retain to some degree, their ‘accent’, that is, their foot in the past” (Prensky, 2001, as cited in Savage, 2007, 65). They remember time without cell phones, computers, the internet, etc.
- ICT: Information and Communication Technology
- MIDI: Musical Instrument Digital Interface
- Sibelius/Finale: Music notation software.

Significance of the Study

This study would be contain significant information for teachers trying to make music interesting while ensuring their students have learned the foundations of music and appreciate all genres and styles. It would also be useful for the universities preparing future teachers for the classroom by impressing upon them the importance of teaching the programs and how to incorporate them into lessons.

Assumptions

The major assumption in this study is that technology has an effect on the enthusiasm and interest in students. Also it is assumed that the school will not have a problem with different classes receiving different instruction. Another assumption in this study is that technology is available in the classroom and ready for the use of students and the teacher is competent in teaching both with and without technology.

Limitations

A limitation in this study involves the student’s attitudes and whether technology really has any effect on how they feel about music. Another limitation will be if I am not the classroom teacher as I will need to be teaching the lessons and observing the responses from the students as

well as keeping track of the grades and assignments. The IRB rules will also be a limitation as my students will all be minors in the study. This will require permission from parents/guardians, and the school to use their students in this study. If there is even one person from a class who has a problem participating in the study, it will not be able to be conducted. By selecting the classes, there will be little to no randomization.

Organization of the Study

There will be four main points addressed in this research proposal. The components will be broken into chapters. Chapter one will include an introduction to the study including background, statement of the problem, purpose of the study, definitions of terms, significance of the study, and assumptions and limitations to the stud. Chapter two will be a review of the literature addressing similar questions including related studies and approaches teachers in the field have used in their classrooms. Chapter three will describe the method of researching the question including participants, instruments, design and procedure. Chapter four will be the data and analysis of the data and chapter five will consist of the reference page.

Chapter Two: Review of the Literature

Introduction

In this section is a review of the literature that correlates with the benefits and problems of integrating technology into the music classroom. The goal of the review is to share information involving advances in technology and discoveries others have found when technology has been implemented in the classroom. The thirteen articles and texts will be listed according to content and alphabetically. First will be the research studies, followed by class instruction, general reviews involving incorporating technology, statistical articles, and finally books.

Research Study Articles

Samuel Airy and Judy M. Parr's article "MIDI, Music and Me: Students' Perspectives on Composing with MIDI" (2001) article describes a study involving the usefulness of MIDI (Music Instrument Digital Interface) in music education. The study focused on a small sample of students in an audio engineering and music production class through interviews inquiring about the student's attitude toward the practicality of MIDI equipment. Some students found the equipment useful and enjoyed the creative aspects the synthesized and sequencing offered. Others found the electronic sounds inaccurate and had difficulties creating music from the sounds created. Some of the students claimed that the music they listened to were unlike the music they learned in school, but with MIDI they were able to compose music allowing them to enjoy their music class instead of becoming bored.

"Music technology inspected: good teaching in Key Stage 3" (2000) by Janet Mills and Andy Murray discuss how information and communication technologies (ICT) can promote music education. The article also addressed some of the problems of solely using ICT could

create. The study focused on 52 schools and focused on 106 lessons. They interviewed students to find out what they enjoyed about ICT and what they found frustrating. The article also pointed out the importance of not only using ICT as a form of teaching, but to also incorporate acoustic instruments and other music lessons to help solidify concepts. One of the major pitfalls of ICT the article addressed involved technologies frequent malfunctions and that most teachers are only trained to for simple troubleshooting, but not major technical problems. However, the article also stated that students found motivation to learn more and spend extra time perfecting their projects.

“Reconstructing music education through ICT” (2007) by Jonathan Savage from Manchester University addresses the discussion and research from Janet Mills and Andy Murray’s article “Music technology inspected: good teaching in Key Stage 3” (2000). The article discusses the pros and cons to incorporating ICT in the music classroom. The article explained ways teachers used ICT in their classroom and reasons some teachers do not. The challenges Digital Natives and Digital Immigrants pose to the incorporation of ICT in the classroom was a common theme throughout. Many teachers stated that one of the major challenges of using ICT in the classroom ranged from classroom management to being a computer technician, but in general, most teachers who utilized ICT found it beneficial and enriching to the musical classroom experience.

“Teaching musical expression: effects of production and delivery of feedback by teacher vs. computer on rated feedback quality” (2009) discusses the findings of a study by Jessika Karlsson, Simon Liljeström and Patrick N. Juslin. The studies goal was to compare teacher feedback on musical expression to computer generated feedback as they wanted to know if students preferred to learn from a computer based teacher or a teacher giving verbal feedback. The results proved that musicians preferred feedback from a human, not a computer. While this

article was interesting and made the point that teacher instruction is vital to a student's progress, it does not rule out the idea that technology is still allows students to be creative and successful in the music classroom.

Class Instruction

The article "Integrating Technology into Your Elementary Music Classroom" by Amy M. Burns (2006) addresses the advantages to incorporating technology into elementary music. She describes ways technology can enhance the national standards that are already set forth by the schools. She talks about reasons she delayed her decisions to utilize technology in her curriculum and describes the many advantages materials such as SMART boards and even the useful websites for her students.

"Technology Tips and Tricks for Music Educators" by Hal Peterson (2006) incorporates a variety of teaching techniques and benefits for incorporating technology into the different music classrooms, from a music appreciation class to elementary music. He addresses some of the different software that is available to teachers and how they might best utilize the lab situation in their classroom. He also provides ideas on set up and what to do if the school cannot afford equipment.

"Using Technology to Assist Gifted Children's Musical Development"(Schroth, Helfer, & Dammers, 2009) provides ways to enhance a gifted child's musical ability and music experience. The authors address identification of the gifted students and the importance of composition in the musically gifted student's repertoire of music knowledge. The article emphasizes different composition ideas and methods of teaching composition to them. Technology plays an important role in gifted children's compositions through notation software like Finale Notepad, and using MIDI products to experiment with different timbres and ideas.

General Reviews

The technology or non-technology debate is occurring in classrooms around the world, not just in the United States; however, regardless of the location, the arguments are the same. The article “Dichotomies in music education – real or unreal?” by Magne Espeland (2010) addresses these issues. While the article’s homeland is Norway, the argument is never-the-less the same.

“Musical creativity and the new technology” by Bill Crow (2006) takes a different approach to the music technology argument. Instead of focusing on the classical composition approach as the other articles have, this article addresses the new music ideas. It addresses the idea that many music educators fight the new technology because it does not include the classical genres but instead focuses on new music and the D.J. (disc jockey) music. The article claims that with the advances in music sharing, students are creating their own mixes and enjoying their own styles and if music teachers want to make advances in their curriculum and keep students engaged, it is vital for them to not rely on classical methods of music but instead incorporate the electronic keyboards and music mixes.

“Theory, technology and the music education” (2004), is an article written by Tim Cain. In this article, he discusses a “new theory of music education” (2004, p 215) while “arguing that advances in music technology have undermined some of the most basic conceptual frameworks we currently possess” (2004, p 215). First he discusses some of the new technologies that have been introduced to the music education classroom such as electronic keyboards. He points out “before ‘creative music’ developments, whole class teaching seems to have been the norm...now more and more, pupils are working either in pairs or as individuals, each with a workstation and set of headphones” (2004, p. 216-217). Also in this article, Cain argues some of

the problems the new technologies have posed in the classroom such as if the student's creativity is original. Finally he acknowledges classroom differences as some teachers may embrace the virtual studios and technology and fully incorporate it into their class, while others simply do not.

“Will Technology Transform Music Education” by David Beckstead (2001) was a very interesting article even if it was a little old in technology standards. In the article, Beckstead provides some history into music education. He also provides a comparison of four different countries and their music education programs: United States, Canada, England and Hong Kong. The comparison discusses how the United States has been focused on the instrumental side of music (orchestras, band etc.), England on composition and the need for technology, and Canada falling right in-between. In addition, he quotes several famous composers especially from the 21st century and their thoughts on technology being a part of music advancements both in education and professionally.

Statistics

Catherine Applefeld Olson's article “Making the Tech Connection” (2010) discusses many of the key points that make incorporating technology into the classroom so important. She provides many statistics that she retrieved from the Washington-DC based Pew Research. Such statistics include the number of children with cellphones, iPods, computers and gaming systems. She points out that in a world where a vast majority of children cannot imagine life without technology, then we as teachers should not imagine teaching without it either.

Books

The book Technology Guide for Music Educators edited by Scott Watson (2006) is an excellent resource for teachers seeking to utilize technology in their classrooms. It offers an

explanation of different software, equipment and hardware as well as how it might benefit the classroom and how to operate it. It is put together by the Technology Institute for Music Educators as a resource to help teachers effectively use technology products they have available to them.

Teaching Music with Technology by Thomas E. Rudolph (2004) is also a great resource for teachers. Like the book mentioned above, it is a resource that explains different music technologies and provides lessons and other ways a teacher could utilize technology in classrooms. The book provides definitions of programs, and how to use them. The author, according to the back cover of the book is a middle school teacher in Pennsylvania and a founder of Technology Institute for Music Educators.

Summary of Literature Review

The articles listed above all encompass technology in the music classroom. They describe some of the limitations and the advantages to using different technologies. However, they all maintain a general relationship: that all technologies should not be the sole source of learning in the classroom. Instead the foundations of music should be taught and the students should understand the fundamentals. However, technology is a great way to enhance a lesson, include those who do not have a musical background, and engage interest.

Research Questions/Hypothesis

The main question to be answered in this study is: Does technology impact the music learning environment and students attitudes toward music? Other questions that will be included are: Does technology affect student's creativity? What technologies are available for the music classroom? Are there technologies that spark student interest more than others?

Chapter Three: Methodology

Introduction

This part of the proposal will address the methods of the study. There are four parts to this section, each describing the key areas of methodology. These areas include the participants, instruments, research design and the procedure.

Participants

The participants will be music students at the school I am teaching at. Ideally, the subjects will be upper elementary students. However, they can be of any elementary age or even in a general music class. This will allow for accessibility to the students. Since the study is comparing attitudes of students, it will be to my advantage to have all the students in one school allowing for the same socio-economic statuses. I will be able to compare a variety of different students, but will not have limitations of one class being from a lower class neighborhood and another from an upper class neighborhood. Having students from the same school, I will instead have one of the cultures or a mixture for them. The classes used in the study will consist of the same grade to elevate learning age differences.

Instruments

The instruments in this study will include observation, grades and surveys. Observations will be used to determine if the students appear to enjoy music classes with or without technology present. Grades will be used to compare student's progress and if technology has an effect on improving or if it causes a decline in grades. Finally surveys will be used to calculate student responses to the technology to see if they find it useful, motivating and if technology makes music class more enjoyable.

Research Design and Procedure

The research design for this study is a causal-comparative approach. In causal-comparative research there are experimental and control groups. The control group is the class where technology is not used in the lesson while the experimental group is the class where technology is incorporated into the lesson. The variables are the use of technology versus not using any technology. There will be no separation of gender or age. Matching will be used to compare the grades of the different classes.

Procedure

The study will be conducted at one school with two different classes of the same grade level. The study would be best over a semester or a year to allow enough time to collect data and account for differences in lessons. The lessons will need to be able to be taught and constructed so the same material is being taught regardless if it is with or without technology. Lessons will be written meet state required objectives. The technologies that will be used will include, but may not be limited to: electronic instruments, computers with notation and music alteration software, and SMART board programs. In one class, technology will be incorporated into each lesson. The other class will consist of the same lesson material but technology will not be used. These separated classes will allow me to look at the reaction and responses the students have to music with or without technology. I will discuss with the students who have technology how they perceive the technology enhancing their class learning. No pilot study needs to be done.

Chapter Four-Analysis of Data

Chapter 5-References

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