

**Using Best Practices to Promote a Conducive and Engaging Learning Environment for the 21st
Century Learner in a Music Classroom**

Samantha Noelle Johnson

Touro University, California

Graduate School of Education; Innovative Learning Cohort Three

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Introduction

Background and Need

Mare Island Technology Academy is a technology based school. The school opened for business in 1999 and did not offer its first music course until the spring semester of 2010. At the beginning of the fall semester of 2011, this was the only music course available at the middle school level. As school years passed, many students began to be re-enrolled into the course. Not only were students repeating the course, several new students who were enrolling in the course had previous music experience mixed in with beginning music students. There were no varying levels of music courses offered which led to lessons being differentiated to meet the needs of all learners but some students struggled more than others, engagement levels faltered, and students with different interests than in previous semesters needed to be catered to as well.

Statement of the Problem

As one of the four electives courses offered and only being a semester long course at a technology based charter school, there have been high volumes of repeating enrollment of students within the same school year or the year after combined with new students enrolled in the same class period. It is also apparent that many students are simply placed into these electives courses because of scheduling conflicts and the lack of a variety of elective course offerings and also the fact that electives classes are not scaffold and are all beginning courses, several class periods become filled with students at varying levels of performance skills, engagement and interest levels, and diverse learning styles and needs to be addressed.

Purpose of the Study

Students with an arts background or prior experience in the arts (performing/visual) are said to be better prepared for the 21st century workforce. Employers and major companies are looking for employees

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with said experience because of the mere fact that an arts education allows a person to be creative, have spatial thinking and abstract reasoning, all critical skill sets for tomorrow's software designers, scientists, entrepreneurs and engineers. With that said, the purpose of this study is to find and use best practices in a music classroom which is host to varying levels of musicianship and learning needs in order to promote a learning environment which is conducive for engagement of a 21st century learner.

Research Questions

Research Question 1. What type of pedagogy is best for addressing diverse learners in a music class?

Research Question 2. To what degree will the integration of technology such as interactive whiteboard lessons/activities help all music students retain music theory?

Research Question 3. What is the effect of using an alternative music composition program such as jamstudio.com and Garage Band or standard notation composition software such as Finale or Sibelius with developing music students and the retention of beginning music theory?

In order to collect data, it is my hypothesis I will be taking a quantitative research approach; more specifically a group comparison design for my research. I want to collect and investigate cause-and-effect relationships to grasp a better understanding of how to get students placed in my music elective course to retain the information from grading period to grading period and by the end of the semester. It is among the students who are "placed" in my elective courses that I have observed who struggle with retention and focus and it is this group students along with the students who "elected" to take the course that I want to engage and help instill a passion for the performing arts so that they will be better prepared for the 21st century job market as far as critical thinking, creativity, and being cultured and a well rounded individual is concerned. I also predict that I will be using some of the steps from the constant comparative method as well for data collection from my students.

Introduction

The purpose of this project is to research best practices used in the music classroom. This literature review will address the areas related to student engagement of music students with varying musicianship and diverse learning needs within the same classroom. The first section will address research related to 21st century skills and engagement in a music class. The second section will focus on research about addressing a diverse audience in the general music classroom. Finally, the third section will discuss applying 21st century skills with a diverse audience.

21st Century Engagement in the Music Classroom

Micahel A. Butera (2013) states throughout the No Child Left Behind era, we have operated under a misguided notion that our core curriculum focused exclusively on reading and mathematics. Many failed to acknowledge that music education has been, and continues to be, a part of that core curriculum. And, the current budget woes faced by far too many schools have put music programs in real jeopardy. As a result, urban legends on what we should and should not teach have resulted in cuts to music education programs, elimination of music teacher positions, and the denial of much-needed music instruction to an entire generation of young people. The concerns of this report were paired with the fact that if today's students are going to succeed tomorrow, they need a comprehensive K-12 education that prepares them for college. And that comprehensive education requires music instruction (Butera 2013). Butera (2013) addresses the fact that for years now, MENC: The National Association for Music Education has promoted National Standards for Music Education, clear guidelines that provide all schools with an understanding of what they must know and be able to do to meet current learning standards, requirements, and expectations. These standards were developed to ensure that effective music education programs serve as a pathway to the college and career success we expect for our children. Through well-trained and well-supported music teachers, high-quality music education programs, and comprehensive music offerings, we can provide all students the skills and

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knowledge necessary for 21st century success (Butera 2013). This will make for a well rounded and educated student who will be prepared for the 21st century work force and demands. Well rounded students should also be connected with real world applications and in connection to their communities and their neighborhoods.

Students enrolled in music courses should be receiving an education which not only covers the classic composers and genres but they should also be taught about music that can be found in their own communities. Patrick M. Jones, Ph D, (2004) states that school music programs should be fostering both life wide and lifelong music by enabling students to be involved in performing and enjoying a wide range of musical offerings within their communities throughout their lives. They should focus on connecting students with the musical lives of their communities, teaching them to perform, compose and arrange a variety of musical styles available throughout their community, as well as chamber music they can perform at home and with friends. This would move school music from the margins to the mainstream of the musical lives of their communities. There is a musical disconnect between the schools and the community. The musical ensembles offered for students across the USA are predominantly Western European ensembles: Symphony Orchestras, Concert Bands, and Choirs performing Western European art music or music based in the Western European art music tradition, arrangements of American popular music, and perhaps some “world music” or American spirituals being sung in chorus (Jones, 2004). Jones conducted a study to answer the following question: what is actually happening musically at the street level on a daily basis? For this study, Jones led a research team that conducted a survey of the musical life of Philadelphia from 21 September–5 October 2003. The research team included 10 graduate students enrolled in “MU551 Education in American Society” and 20 undergraduates enrolled in “MU257A Lab Teaching Practicum I” which both are courses offered at the University of the Arts in Philadelphia. The graduate students and Jones set out to document live music performances. They limited themselves to events by adult performers that were open to the public and within the city limits. The exclusion of K12 and university performances was intentional because the

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purpose of the study was to document the musical life of the community in order to determine if school music offerings are consonant or dissonant with that musical life. Each researcher was assigned a neighborhood or combination of neighborhoods to cover (Jones, 2004). As a result of Jones' study, he and his research team concluded that broadcast music plays a major role in the musical lives of communities. This music is available 24/7 to anyone with a radio. It thus crosses geographic and socio-economic boundaries instantaneously and more easily than live music performances. In terms of live music, Jones found that live music performances are more difficult to identify in such a large city. Professional classical music ensembles, such as the Philadelphia Orchestra, present regular concert series and produce professional marketing materials, whereas smaller groups and venues do not advertise that widely. Thus, a study depending on locating advertisements of performances will naturally be skewed toward the ensembles and formats with the most readily available advertising materials, which are the well-funded professional classical music ensembles. These results indicate that rock, jazz and urban styles predominate in Philadelphia with folk and "world" music being the second most popular musical styles and classical performances accounting for 14% of the offerings. While fourteen percent of these live musical offerings were Western European Art music styles and ensembles and some were from non-Western cultures, the overwhelming majority were musical ensembles and styles from the Americas, unique music of the Americas that developed from the clash and convergence of cultures unique to the Western Hemisphere: jazz, bluegrass, and rock, with Latin American styles holding a niche below the 8.5% of the population Latinos comprise (Jones, 2004). Jones (2004) states that disconnect between school and community music has had a detrimental impact on music education. Teenagers love music. This is evidenced by production and marketing within the music industry and its use by manufacturers in marketing and branding their products. However, while children certainly love music, the overwhelming majority is not interested in the types of ensembles middle and high schools traditionally offer. Instead, their interests are in smaller ensembles of diverse popular music (Jones, 2004). Simultaneously and perhaps consequently there is less overall involvement in actual music making throughout our society. Jones (2004) believes in order for music

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education to regain relevance and return from the musical fringe to the musical mainstream we must rethink the curriculum. A 21st Century music curriculum must be designed to invigorate musical learning and to musically empower students in pluralistic societies. Today's music education should connect students with the musical environment in which they live. In order to connect students' in-school music education with their out-of-school musical lives, music offerings must emphasize music they will find in their communities. The goal is to have students participating in music both within and outside of school so graduates will continue performing and enjoying a wide range of musical offerings within their communities throughout their lives. In order to prepare our students for the 21st century workforce Jones (2004) states We must revamp the current rehearsal space construct with its underlying assumptions of group synchronicity and a leader/follower dynamic in order to create a physical environment open to all kinds of music and more conducive to fostering individual creativity. In its place I propose the physical plant of the music suite be a recording, production and editing studio. The main room would be a recording studio large enough to accommodate larger ensembles and also double as a small recital hall. Satellite rooms would include a recording booth an editing laboratory, a music computer/keyboard center, a music library, instrument/equipment storage rooms, and several small ensemble rehearsal and individual practice rooms. The ensemble and individual practice rooms would be equipped with the technology needed for accompanying, recording and playback. They would also be wired to serve as "isolation booths" for the main recording studio. This physical layout mirrors the current physical structure of many, if not most, music suites in middle and secondary school across the USA. Therefore, there is no need for major construction. The issue is merely one of inserting technology as needed which is becoming ever less expensive and reorienting the curriculum, which costs nothing (Jones, 2004). Students today are digital natives and the use of technology in the classroom is their forte.

It wasn't until Amy Burns (2012) was teaching in Far Hills, New Jersey, that she realized the many opportunities technology offers elementary music educators and students. Burns learned as much as she

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could to begin using technology to enhance the delivery of music education to every student. Many attendees of conferences and presentations of Burns are often concerned about extending their students' time using technology since they already seem to spend countless hours outside of school "plugged in." Many of these attendees believe that when students come to music class they should be exposed to music solely in the form of singing, listening, moving, creating, and performing on acoustic instruments. Burns does understand these concerns and feels technology is one of the tools that will help her students achieve success in learning music. "We now teach students who have always listened to an iPod or known someone who has one-this generation has no fear of technology, and we are given the task of preparing them for their future," (Burns, 2012). If we ignored technology, we would be missing out on websites that can help assess musical skills, apps that can enhance recorder performances, and hardware and software that can act as virtual world instruments students would otherwise not have the opportunity to play (Burns, 2012). Burns (2012) believes even with just a single computer in the classroom, the music educator can enhance instruction through technology. With a screen or TV, teachers can project music software or interactive music websites to reinforce or assess musical skills taught in the classroom. Students can come up to the computer one at a time and participate in the activity. Other students watch the screen and follow along (Burns, 2012). There are websites that promote interactive music-making along with a music curriculum. Interactive whiteboards offer other tools teachers can utilize to enhance their current lessons (Burns, 2012). Being able to display music notation software such as Finale or Sibelius or online music notation programs such as Noteflight, it gives the students a better experience with composition than pencil and paper (Burns, 2012). Students can easily drag and drop the notes onto the staff and hear their melodies as they create them. Electronic notation files can also be saved and accessed later from any computer. Burns (2012) suggests using the SAMR model. First one should experiment with websites, apps, or the interactive whiteboard until you feel comfortable. Then *substitute* a tool in your classroom with a technological tool. Do something as simple as accompanying a song with an iPod and sound system, and see how your students respond. When you feel comfortable with that, *augment* your lessons with technology, perhaps by adding an interactive website to

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perform an assessment with your students. After that, *modify* your lessons by adding virtual instrument apps to your lesson so students can experience a cultural sound and compare the difference of a virtual ensemble to an acoustic ensemble. Finally, *redefine* how you might teach a music concept. Burns (2012), states that technology can be a great asset to your music classroom, if used in an effective way. When music educators try to teach around technology, the lesson will ultimately be unsuccessful and your students will become frustrated; however, when music educators use technology to enhance music lessons, students will feel great musical success (Burns, 2012).

Addressing a Diverse Audience of Learners in the Music Classroom

Teaching students whom are digital natives also addresses a diverse audience of learners in the music classroom. Sapon-Shevin (2002) addresses the fact that typical classrooms have always served (or ill-served) students who varied along any number of continua, including performance or ability, either by ignoring those differences or through elaborate tracking and grouping strategies. Now, however, many schools are moving towards more purposive heterogeneity; teachers recognize the value of teaching children to interact comfortably with a wide range of people and so work to create classrooms and practices that acknowledge differences among students in the classroom and respond to them thoughtfully and creatively (Sapon-Shevin, 1999, 2001, 2003). Sapon-Shevin (1990) states cooperative learning is one of the optimal ways to teach children with different abilities in the same classroom. Cooperative-learning instruction involves children working together, helping each other to learn. Much of the early work in cooperative learning referred to the importance of heterogeneous grouping as a principle. In order to be able to include all students and all learning styles and abilities multi-level teaching has to be used. If the class is doing a unit on space, for example, the teacher can organize space activities and projects on many different levels (Sapon-Shevin 2002). Sapon-Shevin (2002) proposes for classrooms to be inclusive, modeling respect and appreciation for all children, the areas identified in this chapter music inform all aspects of classroom life.

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Many classes are filled with students with diverse learning needs. Teachers should adhere to this and be willing to adapt and differentiate classroom instruction. Meeting the needs of all learners is vital for student engagement and success. Bashinski (2002) states that Adapting the curriculum involves differentiating instruction to provide learners with a variety of ways to process information and demonstrate what they have learned, in order to "match" the way in which each learner learns most effectively. Adapting the curriculum only for learners who have IEPs isn't enough; the curriculum needs to be differentiated in order to meet the needs of all. The needs for adaptation were divided into four categories; instructional strategies, instructional materials, curricular content, and assessment practices (Bashinski 2002). According to Bashinski (2002), the first category of curriculum adaptations refers to a change in the way a teacher teaches - that is; in the methodologies s/he uses to provide information to a learner(s) in his/her class. These involve a change in the learner's instructional input. Adapting teaching materials involves making changes to the equipment and / or supplies to which a learner(s) has access during the course of instruction. This involves a change in the formats through which information is represented to the learner or the learner's engagement with the curriculum during the course of instruction. Bashinski (2002) also states that this third category of adaptations involves varying what is taught - that is, the complexity and nature of the content presented during the course of a unit of study. This type of curriculum adaptation, results in an adjustment of the cognitive demand of a learning task for a particular learner(s). The final category of curricular adaptations refers to alterations in the way in which a teacher gets information from a learner(s) in her class. These involve a change in the learner's instructional output. Effectively designing curriculum adaptations represents one approach to teaching that may not require a substantial amount of additional work on a teacher's part, though it certainly represents a different way of teaching. Adapting the curriculum to meet the needs of diverse learners involves differentiating instruction to provide all learners with a variety of ways to process information and demonstrate what they have learned, in order to "match" the way in which each individual learns most effectively and efficiently (Bashinski 2002).

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Teaching to multiple intelligences and using tools such as technology and digital media to differentiate learning can empower diverse learners. According to Kingsley (2007), as technology becomes increasingly commonplace within educational settings, there is a corresponding expectation for educators to utilize digital tools to support classroom teaching and learning. One of the most empowering uses of digital tools occurs when teachers possess the skills to identify, develop, and apply technology to recognize and validate the diverse backgrounds of their students (Kingsley, 2007). By providing students with multiple ways to access content and multiple pathways for expressing what they learn, Universal Design for Learning (UDL), particularly when paired with instructional technology, can help educators devise approaches to teaching, learning, and assessment that are flexible and meaningful (Kingsley, 2007). Kingsley (2007) states educational technology provides a unique and robust set of tools to support the UDL model of instruction to scaffold and empower diverse learners. According to Kingsley (2007) connecting students' home and school worlds is very important. Educators are recognizing that linking content area teaching to youth culture, including television, music, the Internet, and video gaming, is a compelling way to capture and hold students' attention, make learning relevant, and help students develop a sense of ownership of their learning (Kingsley, 2007). Teachers should use technology to support differentiated instruction (Kingsley, 2007). Digital tools can play an important role in planning instructional approaches that can be adapted to the individual needs of individual needs of students in heterogeneous classrooms (Kingsley, 2007). With hard work and persistence, teachers can leverage technology to design and locate content, materials, and resources that are interesting and effective for students at all levels of experience, interest, and ability (Kingsley, 2007).

Applying 21st Century Skills with a Diverse Audience

Students of the digital age and who have an arts education will be ahead of many of their peers. The skills taught by the arts will contribute to success in the knowledge-based economy of the 21st century. Lynch (2008) addresses the fact that in the reality of life in the 21st century is that the skills associated with artistic practices — creative thinking, self-discipline, collaboration and innovation — are skills that are in

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great demand. In fact, in our rapidly changing global economy, the skills the arts teach may be mandatory for everyone's success. To effectively prepare students for the new workplace, schools must consider investing in their own creative workforce. Students throughout their preK-12 academic career will need access to the knowledge and skills in the arts that only specialists in music, theatre, visual arts and dance can provide. Lynch (2008) notes that the presence of trained arts specialists not only ensures sustained and quality student engagement in various artistic disciplines, but also promotes collaboration with classroom teachers to draw connections between the arts and other subject areas. According to his study, Lynch (2008) has found that an arts education not only provides artistic training, but teaches children creativity, spatial thinking and abstract reasoning, all critical skill sets for tomorrow's software designers, scientists, entrepreneurs and engineers. Parents and educators can feel optimistic that their arts-educated kids will have a clear shot at being employed in the arts-related, creative industries, as well as in the new innovative 21st century economy. Lynch (2008) states that children growing up in the United States are living in an interconnected world where our ability to sustain a high-quality American way of life, a vibrant business economy and peaceful, positive relationships with other citizens of the world depends on our ability to effectively develop the creative and cultural capacities demanded of us now.

Music educators are increasingly interested in introducing students to music composition as a means to enhance musical understanding. In order to compose, teachers often expect children to represent musical ideas within the boundaries of standard notation, using classic, standard notation software programs such as those in the *Sibelius* or *Finale* product families (Williams & Webster, 2008). However, research suggests that there is a disconnect between what students hear and what students see in standard notation (Bamberger, 1996). When children are given the opportunity to notate music in their own way, their invented notations reveal that children hear music according to either small musical groupings or the larger metrical structure (Bamberger, 1991). If this is the case, our complex standard notation system may not be the best way to engage children in music composition, particularly in the early stages of their compositional thought.

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Recent software programs enable students to compose without relying on standard printed “scores.” Such programs have different interfaces that allow students to compose to varying levels of sophistication without the use of standard notation. Lansinger Ankney (2012) suggests if we as educators are to engage 21st century learners, we must use alternative representations of music through alternative composition software such as Impromptu, Hyperscore, GarageBand, *and the O-Generator that can be used for composition* which can better present and often enhance students’ compositional thinking. Lansinger Ankney (2012) also states children encounter a world full of music from TV shows to shopping malls to the latest music playing on their iPods. They hear and internalize music in various ways, sometimes passively, sometimes emotionally, or at other times, systematically. All of these encounters lead to internal representations of music. These representations include intuitive understandings of melody, rhythm, texture, and much more. Yet in school, if children are asked to represent their musical knowledge in a visual form, they often must conform to the isolated pitches and rhythms in standard notation. Children were asked to write melodies such as *Twinkle, Twinkle Little Star* and simple rhythmic patterns in any manner that made sense to them. Bamberger had students notate rhythms using squiggly lines, stars, hearts, dashes, circles, and much more. Bamberger used these external representations as a means for understanding children’s internal representations of music.

Lansinger Ankney (2012) suggests that one goal of music education should be to encourage composition as an ability to collect musical ideas into personally meaningful frameworks that can be communicated to others through sound. Therefore, like standard notation, alternative representations are a vehicle for engaging in composition. Alternative composition software programs offer powerful options to the complex semiotic system that has existed for centuries. Some alternative composition programs embody designs that are more intuitive to children’s initial internal representations, flexible to children’s developing musical knowledge, and engaging in their use. However, it is up to music teachers to carefully evaluate programs for their overall effectiveness.

By using alternative representations of music in composition programs, we invite students of all ages and ability levels into a creative and interactive process that is changing the field. Up to recently,

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composition was reserved for only the most elite musicians. These alternative representations are helping redefine what composition is and who composes. While it is exciting to embrace this technology, teachers will continue to bear the responsibility for selecting composition programs that are well-designed and relevant to their students' needs and preferences. They also must be responsive and purposeful in integrating this technology in meaningful ways. However, the future looks full of possibility and if music educators will work to include and build upon the power of these alternative representations for composition (Lansinger Ankney, 2012).

Morris (2010), states that some music education systems narrow the focus by concentrating only on the performer or the listener. In the United States, music education has traditionally followed two paths: music appreciation and performance-based programs. Composition seems to have been largely neglected. Conversely, the UK in recent years has focused on composition as a primary teaching tool in music education.

Although composition is included as the fourth National Standard for music education, many music educators do not incorporate composition into their curriculum despite the level of importance bestowed upon it. This was a disservice to our students and the need to let them be creative. It was not until The Vermont MIDI Project (<http://www.vtmidi.org/>, 2010) begun in 1995 in response to the National Standards as a resource to help teachers implement composition teaching in their schools. Using MIDI devices and the internet, students are able to send their compositions to professional composers who act as mentors and establish a dialogue with the students to help them to develop and refine their compositional ideas. The project has also identified the need for teacher education in both composition and technology and runs workshops in both. Live performances of student compositions by both students and professional musicians are also actively encouraged (Morris, 2010).

Although positive attitudes to composition in music education abound in both countries, teachers in the US especially are in need of support in order to implement composition successfully in all class types.

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Both countries would benefit from considering balance in the curriculum, not only among the standards, but also in balancing the development of skills with the inclusion of opportunities for creativity (Morris, 2010).

Morris (2010) concludes music educators must continually reassess their teaching in order to ensure that they are providing a balance of activities and experiences that have the power to reach all students, both in the teaching of composition and music teaching in general. It should be remembered that music is creative and expressive, the implications of this being the inclusion of creativity and expression in music education in order that music be a real experience for all.

Summary

Many people believe the arts and arts education is still relevant for students of the 21st century. Studies have shown students who have a background in the arts are far more capable of handling future jobs which will require artistic training, spatial thinking, and abstract reasoning, all critical skill sets for tomorrow's software designers, scientists, entrepreneurs and engineers. The music classroom is also a place for inclusion for all learners to receive an arts education which does not single any learning type out but instead adheres to all learning styles and focuses lessons and instruction around them. The arts and arts education help foster the creativity and critical thinking skills of young people, which is quintessential for the 21st century.

Research Methods

Project Introduction

For this research project, gathering qualitative data by conducting structured observations in the classroom was vital as it was the launching pad for the focus of the project. Viewing videotapes of the students several times to help with the observation process. While observing first hand and via videotape, field notes were taken to assist with documentation. Along with observations and videotapes, surveys were given to the focus groups.

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The type of quantitative data collected was a survey which contained a combination of both questions and statements. A Likert and a Likert-type scale were used for student responses and also teacher developed and classroom curriculum formal assessments were used.

The type of data collected for both qualitative and quantitative is information about the following:

- Levels of engagement and participation
- Different learning styles being addressed and taught to
- What activities conducted in class did or did not help and address music theory retention (reading music note names on staff paper both in treble/bass clef, rhythm reading by sight and aurally)
- Technology usage (too much/not enough)
- How has the number of times repeating the course helped, hindered, or did not affect students' musicianship
- Music appreciation lessons (more/less)
- Correlation and effectiveness of live performance project and retention of music theory, engagement, participation, and participation

Materials

Students completed a survey at the end of each unit and major project in regards to engagement, technology use and access, effectiveness of lesson, and if their learning style and needs were addressed. The survey took no more than 5-8 minutes. Students were prompted at the start of each lesson that there will be a survey to complete. Students were also filmed for analysis purposes and field notes were taken.

Data Analysis Plan

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Upon the completion of the surveys taken by the students, examination of their results proved to be very enlightening. To assist with analysis, a summary of student responses was used in the Google Docs; forms feature.

Findings and Implications

Findings

The purpose of this study is to find and use best practices in a music classroom which is host to varying levels of musicianship and learning needs in order to promote a learning environment which is conducive for engagement of a 21st century learner.

Research Question 1. What type of pedagogy is best for addressing diverse learners in a music class?

The following survey questions asked of students related to pedagogy:

1. What activities conducted in class helped you retain music theory concepts?
2. What activities conducted in class did not help you retain music theory concepts?
3. How effective was the live concert attendance project in regards to retention of music theory?
4. Did this course meet your learning styles?

The students responded to the survey question number one regarding activities conducted in class to help them retain music theory concepts in the following ways; 15% of students stated that learning/playing the keyboard was the most effective for retention of music theory concepts. Whole class discussion of music theory workbook (14%), daily board warm ups (12%), interactive SMART board usage/activities (11%), additional music theory worksheets/handouts/assignments (10%), and BrainPop/YouTube videos (10%), were second, third, fourth, and fifth most popular responses. The activities that were not as effective for students were individual class time completing workbook pages and assessments/quizzes/tests (9%) and outside of class time/studying individually (4%).

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Based on a scale of 1 to 5, with 1 being not effective and 5 being very effective, 18% of students responded with a 5 on the Likert scale regarding the effectiveness of the live concert attendance project and retention of music theory. Twenty percent of students responded with 1 (not effective) regarding the effectiveness of the project and music theory. Students were also asked to describe in their own words how effective or ineffective the live performance project was in regards to their participation in music class. Thirty out of the fifty students whom were surveyed stated in their own words how their engagement level was increased after attending a live performance. Some of the student responses are as follows:

- *“It was effective because I understood the different tones and pitches that were played from class.”*
- *“It was effective because I learned about different people and how they play other instruments and used that in class on the piano and recorder.”*
- *It was very effective because it will teach us about where the music that we play in class originated from and how they can play it.”*
- *It was pretty effective because watching the musicians play can make kids want to play better and be like them.”*
- *The reason is because it make[s] me want to learn about music more.”*
- *“When watching other performers I understood the importance of counting rhythms and tapping my foot for keeping the beat.”*
- *The concert attendance was helpful because it helped me see what I have learned in real life. It helped me to see that even famous musicians do the same things we do.”*
- *“I think that it helped me participate in class because I became more interested in music.”*
- *“The live performances were pretty effective because I learned different things during the performance and saw things I learned in class.”*

During the course of this school year, students participated in an activity in their Advisory classes which surveyed their learning styles. With that said, students were asked if the music course meet their

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learning styles. Majority of students have multiple learning styles and 76% of students stated that they are social learners and physical/kinesthetic learners and both of these styles were met.

In summary, retention of music theory is best met through whole class discussion, additional music theory worksheets/handouts/assignments, interactive SMART board usage/activities, daily board warm ups, and BrainPop and/or YouTube videos. In all 66% of students responded that the live concert attendance project was effective in some way. Students are aware of their learning styles and the music course meets the diverse learning needs of all students.

Research Question 2. To what degree will the integration of technology such as interactive whiteboard lessons/activities help all music students retain music theory?

Of the following survey questions, these were the questions asked regarding the integration of technology and the retention of music theory:

1. Based on your experience thus far, how would you rate the technology usage in this class?

Of the fifty students surveyed, 56% of students rated the technology usage in class a three out of five, with five being perfect on a Likert scale. As stated above for research question number one, 11% of students stated that the interactive SMART board usage and activities helped them retain music theory concepts. There were five students which stated they would like to see more technology throughout the course.

In summary, retention of music theory is also best met through technology and the integration of technology will need to increase to ensure retention of music theory concepts is apparent in music class.

Research Question 3. What is the effect of using an alternative music composition program such as jamstudio.com and Garage Band or standard notation composition software such as Finale or Sibelius with developing music students and the retention of beginning music theory?

Of the following survey questions, students were asked these questions based on using an alternative music composition program:

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1. Did your knowledge of reading music notes and rhythms assist you with completing the song composition project?
2. Based on a scale of 1 to 5 with 1 being no help at all and 5 being very helpful, how much did knowing how to read music help you complete this project?
3. Do you think having prior music knowledge and experience is necessary for this project?

Of the fifty students surveyed, 70% stated that having prior knowledge of reading music notes and rhythms assisted them to complete the composition project. Using the Likert scale of 1 to 5 based on how helpful or not helpful knowing how to read music for the completion of this project, 50% stated knowing how to read music and rhythms prior to the project was very helpful. Lastly, according to the survey results 47% of students felt having prior knowledge of said music theory was necessary to complete the composition project.

In summary, music theory which is taught throughout the semester of this class is a skill necessary to have and to retain for project extensions to which further challenge all learners. In order to compose music, tapping into the students' prior knowledge of music theory further proves alternative music compositions positively affect student retention of music theory concepts.

Implications

By having students in both Beginning Music classes respond to the survey was quite eye opening. Student responses will be the basis and building block to developing a more defined curriculum which will be sure to address all learning styles equitably and make use of resources which will enhance student retention of music theory concepts. By having this defined curriculum in place may encourage students and the administration along with the school board to understand the importance, significance, as well as the need to expand Mare Island Technology Academy's music and arts programs.

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Butera (2013) author of "Music Education: The Ultimate 21st Century Skill" addresses the fact that for years now, MENC: The National Association for Music Education has promoted National Standards for Music Education, clear guidelines that provide all schools with an understanding of what they must know and be able to do to meet current learning standards, requirements, and expectations. These standards were developed to ensure that effective music education programs serve as a pathway to the college and career success we expect for our children. Through well-trained and well-supported music teachers, high-quality music education programs, and comprehensive music offerings, we can provide all students the skills and knowledge necessary for 21st century success (Butera 2013). This will make for a well rounded and educated student who will be prepared for the 21st century work force and demands.

To effectively prepare students for the new workplace, schools must consider investing in their own creative workforce. Students throughout their preK-12 academic career will need access to the knowledge and skills in the arts that only specialists in music, theatre, visual arts and dance can provide. Students are not only going to need formal education and experience with technology, they are going to need to a formal education in the arts in order to be well rounded and productive citizens in the 21st century.

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Appendix

Music Class End of the Year Survey

How many semesters have you been enrolled in a music course at MIT? *

This includes guitar with Mr. Odell and Piano/Recorder/Choir with Miss Johnson.

21st Century Learning in a Music Classroom

- One Semester
- Two Semesters
- Three Semesters
- Four Semesters
- Five Semesters
- Six Semesters

How many semesters have you been enrolled in music with Miss Johnson at MIT? *
This includes Piano/Recorder class and/or Choir class.

- One Semester
- Two Semesters
- Three Semesters
- Four Semesters
- Five Semesters
- Six Semesters

What grade are you currently in? *

- 6th Grade
- 7th Grade
- 8th Grade

Did you have any previous music experience prior to taking a course at MIT? *
If yes, where did you have this prior experience and for how long?



Did you know how to notate and read music prior to taking music with Miss Johnson? *

- Yes
- No

If you answered no to the prior question, where and when did you learn to notate and read music? *

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- Mr. Odell at MIT
- Miss Johnson at MIT
- Other:

What activities conducted in class helped you retain music theory concepts? *

Mark all that apply. Music Theory; reading music note names on staff paper both in treble/bass clef, rhythm reading by sight and aurally.

- Whole class discussion of music theory workbook
- Individual class time completing workbook pages
- Additional music theory worksheets/handouts/assignments
- Interactive SMART board usage/activities
- Daily board warm ups
- Learning/Playing the keyboard
- Peer grading of assignments
- Assessments/Quizzes/Tests
- BrainPop/YouTube videos
- Outside of class time/Studying individually
- Other:

What activities conducted in class did NOT help you retain music theory concepts?

Mark all answers that apply. Music Theory; reading music note names on staff paper both in treble/bass clef, rhythm reading by sight and aurally.

- Whole class discussion of music theory workbooks
- Individual class time completing workbook pages
- Outside of class time/Studying individually
- Interactive SMART board usage/activities
- Daily board warm ups
- Learning/Playing the keyboard
- Learning/Playing the recorder
- Peer grading of assignments
- Assessments/Quizzes/Tests
- BrainPop/YouTube videos
- Other:

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How much time was spent outside of class studying music theory concepts individually?

Check all that apply.

- Every day of the week
- Two-three days a week
- One day a week
- Not at all
- Other:

How effective was the live concert attendance project in regards to retention of music theory? *

1 2 3 4 5

Not effective at all

Select a value from a range of 1, Not effective at all, to 5, Very effective. Very effective

If you completed the live concert attendance project this semester, how effective was this assignment in regards to engagement in music class? *

1 2 3 4 5

Not effective at all

Select a value from a range of 1, Not effective at all, to 5, Very effective. Very effective

In your own words please describe how effective or ineffective the live performance project was in regards to your participation in music class. *

For those of you who have taken this music course one of more times, how has the number of times repeating the course helped or has not helped your musicianship?

Musicianship as in music skills; playing an instrument, reading music notes.

1 2 3 4 5

Has not helped

Select a value from a range of 1, Has not helped, to 5, Has helped. Has helped

How effective were the music appreciation lessons in regards to your interest in music? *

Music appreciation; instrument families/names, different genres of music, BrainPop videos.

1 2 3 4 5

Not effective at all

Select a value from a range of 1, Not effective at all, to 5, Very effective. Very effective

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effective,.

Would you like to see/have more music appreciation lessons in the future? *

- Yes
- No
- Indifferent

Based on your experience thus far, how would you rate the technology usage in this class? *

Technology; Interactive SMART board, computer use (Microsoft Word, PowerPoint), email, internet, BrainPop, Web 2.0 tools such as Wordle, Weebly, and Edmodo

1 2 3 4 5

Not enough used

Select a value from a range of 1, Not enough used, to 5, Too much was used,.

Too much was used

Think about how you learn best. Did this course meet your learning style and needs? *

	Yes	No	Unsure
Visual Learner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Auditory-Musical Learner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Verbal Learner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Physical/Kinesthetic Learner (very hands on)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Logical (Mathematical) Learner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social (Interpersonal) Learner; working with others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Solitary (Intrapersonal) Learner; working alone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What was your level of interest in wanting to learn to read/play music instruments before taking this course? *

1 2 3 4 5

Not interested at all

Select a value from a range of 1, Not interested at all, to 5, Very interested.

Very interested

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What is your interest level in regards to wanting to learn to read/play music instruments after taking this course? *

Has your interest level changed since taking this course?

1 2 3 4 5

Not interested at all

Select a value from a range of 1, Not interested at all, to 5, Very interested.

Very
interested

Did you elect to take this course? *

Did you sign up for this class?

- Yes
- No
- Do not remember

What would you like to see be done differently if you were to take this course again? *

More/less technology, more/less music theory, etc. Be honest!



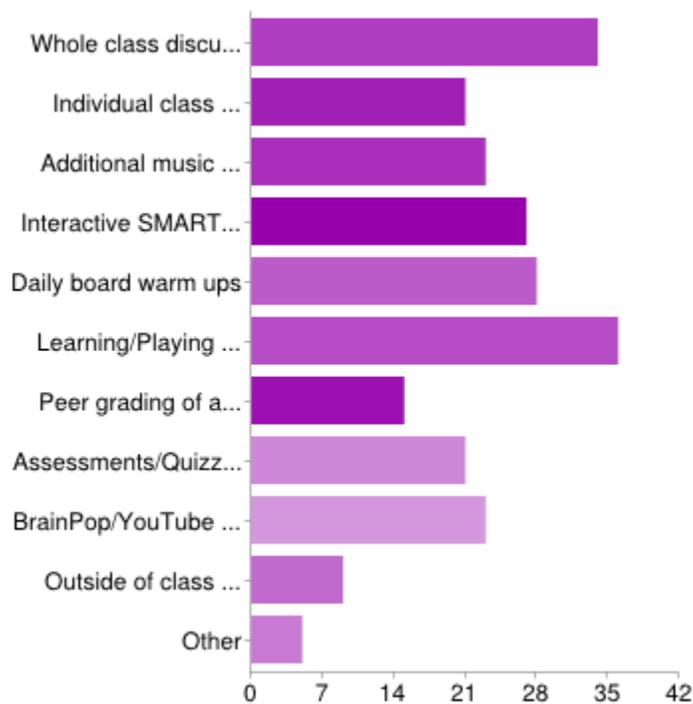
Are you interested in music composition?

Creating/making music and songs using a computer program.

Appendix B

What activities conducted in class helped you retain music theory concepts?

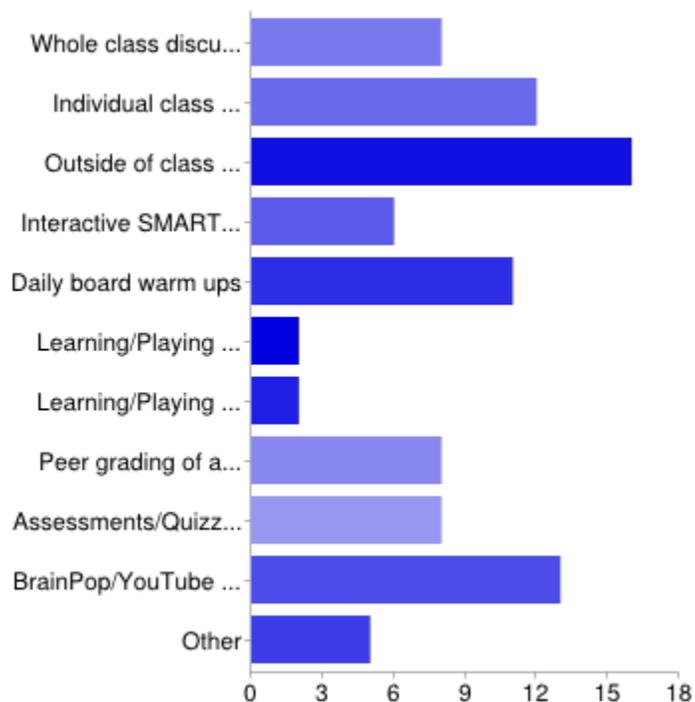
21st Century Learning in a Music Classroom



<i>Whole class discussion of music theory workbook</i>	<i>34 14%</i>
<i>Individual class time completing workbook pages</i>	<i>21 9%</i>
<i>Additional music theory worksheets/handouts/assignments</i>	<i>23 10%</i>
<i>Interactive SMART board usage/activities</i>	<i>27 11%</i>
<i>Daily board warm ups</i>	<i>28 12%</i>
<i>Learning/Playing the keyboard</i>	<i>36 15%</i>
<i>Peer grading of assignments</i>	<i>15 6%</i>
<i>Assessments/Quizzes/Tests</i>	<i>21 9%</i>
<i>BrainPop/YouTube videos</i>	<i>23 10%</i>
<i>Outside of class time/Studying individually</i>	<i>9 4%</i>
<i>Other</i>	<i>5 2%</i>

What activities conducted in class did NOT help you retain music theory concepts?

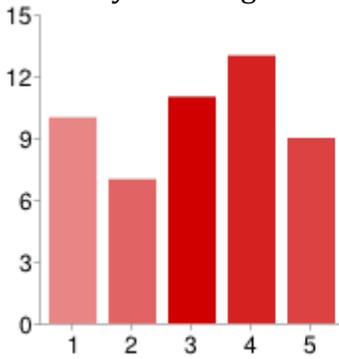
21st Century Learning in a Music Classroom



<i>Whole class discussion of music theory workbooks</i>	8	9%
<i>Individual class time completing workbook pages</i>	12	13%
<i>Outside of class time/Studying individually</i>	16	18%
<i>Interactive SMART board usage/activities</i>	6	7%
<i>Daily board warm ups</i>	11	12%
<i>Learning/Playing the keyboard</i>	2	2%
<i>Learning/Playing the recorder</i>	2	2%
<i>Peer grading of assignments</i>	8	9%
<i>Assessments/Quizzes/Tests</i>	8	9%
<i>BrainPop/YouTube videos</i>	13	14%
<i>Other</i>	5	5%

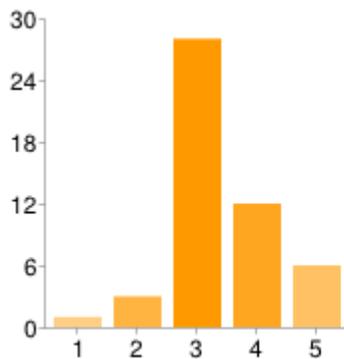
How effective was the live concert attendance project in regards to retention of music theory?

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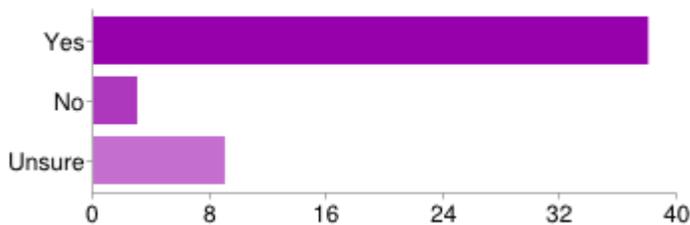
2 7 14%
 3 11 22%
 4 13 26%
 5 9 18%

Based on your experience thus far, how would you rate the technology usage in this class?



1 1 2%
 2 3 6%
 3 28 56%
 4 12 24%
 5 6 12%

Think about how you learn best. Did this course meet your learning style and needs? [Visual Learner]



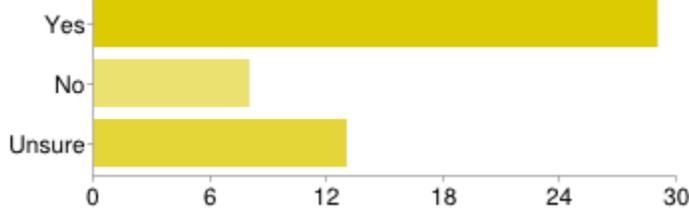
Yes 39 78%
 No 1 2%
 Unsure 10 20%

Think about how you learn best. Did this course meet your learning style and needs? [Auditory Learner]

Yes 29 58%
 No 8 16%

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Unsure 13 26%

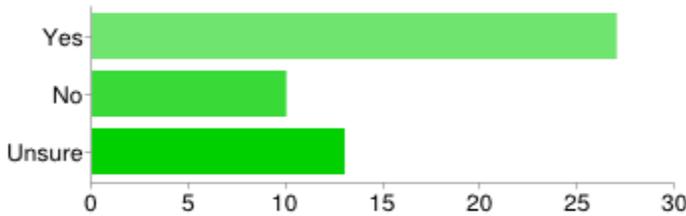


Think about how you learn best. Did this course meet your learning style and needs? [Verbal Learner]

Yes 27 54%

No 10 20%

Unsure 13 26%



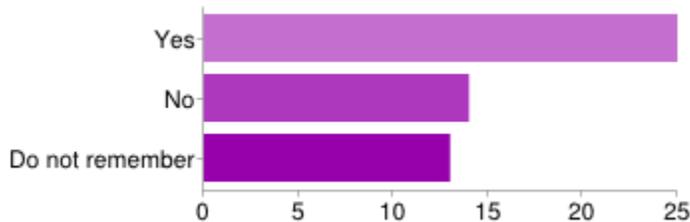
Think about how you learn best. Did this course meet your learning style and needs?

[Physical/Kinesthetic Learner]

Yes 38 76%

No 3 6%

Unsure 9 18%

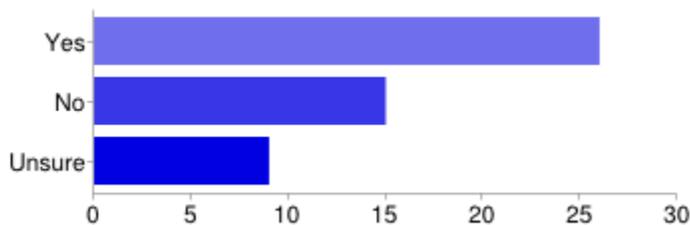


Think about how you learn best. Did this course meet your learning style and needs? [Logical Learner]

Yes 26 52%

No 15 30%

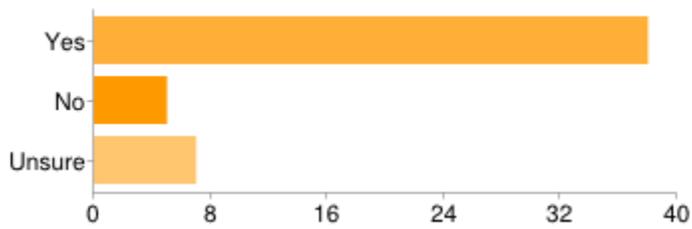
Unsure 9 18%



Think about how you learn best. Did this course meet your learning style and needs? [Social Learner]

Yes 38 76%

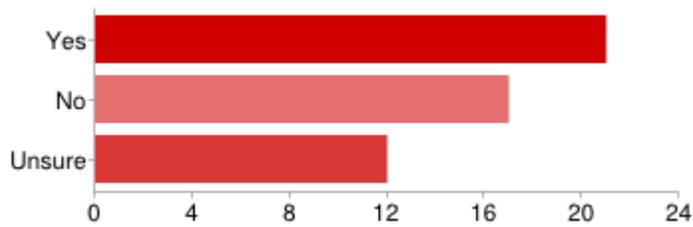
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No 5 10%

Unsure 7 14%

Think about how you learn best. Did this course meet your learning style and needs? [Solitary Learner]



Yes 21 42%

No 17 34%

Unsure 12 24%