1

Integrating Project:

Designing Curriculum for High School Students based on the National Coalition for CORE ARTS Standards for Music Technology

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Graduate Focus Area: Educating high school students in the subject area of digital media and music technology. [Names and identifying information of students and interview subjects have been redacted.]

## TABLE of CONTENTS

Chapter 1: Introduction	3
Chapter 2: Literature Review	8
Chapter 3: Methodology	12
Chapter 4: Final Look at Results	22
Bibliography	25
Appendix A	29
Appendix B	31
Appendix C	36
Appendix D	45
Appendix E	46
Appendix F	53
Appendix G	
Appendix H	
Appendix I	58
Appendix J	59

## **INTRODUCTION**

Through this project I am developing and designing a segment of a music technology course for high school students, connecting the course content, projects and experiences to National Coalition for CORE ARTS Standards, Common Core Standards, 21<sup>st</sup> Century Learning Skills, and STEM to STEAM. I have designed the project to include design development, curriculum design, curriculum mapping, lesson plans, assessments and examples from creating with GarageBand.

I have researched types of curricula used in music education, studied the design and development of curricula, and reviewed the many standards for music technology. In addition to researching design and development of curricula, I also researched established music technology programs and curricula through music education documents and journals, music education professional organizations, and by interviewing music technology educators.

#### **Project Background**

As I walked towards my band room for the first time in 2008, I envisioned a room with state-of-the-art equipment, nice band chairs and music stands, beautiful instrument storage cabinets, practice rooms, and a high-tech MIDI Lab. I would be teaching three beginning band classes, intermediate band, advanced band, marching band, pep band, jazz band, and percussion ensemble. I had a background in music technology and recording and I thought that I would be able to start a tech club or a music technology class my first year. I walked into my band room and my vision was instantly deflated. The band room was in need of a face-lift. The instrument cabinets had peeling paint, chairs were covered in gum, the practice rooms were used as unorganized storage areas, the walls were bare, the room was uninviting and did not resemble a music making space.

Over the course of seven years at the High School I would make yearly improvements on the band room. Some of my initial improvements were simple tasks, such as cleaning and reorganizing. The instrumental music department did have a storage room but that was also in disarray. In August of 2008, I spent the entire month rehearsing the marching band and cleaning and organizing the band room and storage space. This immediately provided additional student practice space, storage, and an assessment of what would need to be repaired, thrown away, or replaced. Over time, other improvements were made with the help of band students, eventually turning our band room into a friendly music-making space. In 2012, the instrumental music department received new second classroom. The new classroom provided additional rehearsal, practice, and storage space. We also acquired additional iPads and iMacs. In the years to follow, film and audio production, sound engineering, live mixing, and the stagehand profession became a topic of interest among my students. This caught my attention because of my own interest and life experiences.

I began playing drums in fourth grade. I played in my school band program through high school and studied with several private teachers. What motivated me to study music and become a teacher was my love for music. My love for music developed from playing in a variety of rock bands starting in sixth grade. My rock bands were also the catalyst for developing an interest in recording. Throughout middle school and high school, I would record using a four-track recorder, an eight-track tape recorder, and

5

eventually Pro Tools, a digital audio workstation (DAW). Recording in a friend's basement, we would learn how to get the best sound with our consumer-quality equipment, eventually saving money and slowly upgrading to semi-professional gear. My bands also had opportunities to record in professional studios and cut several extended play (EP) recordings. Entering college, I maintained this interest in recording and had a work-study position recording all the concerts and recitals throughout my undergraduate years. I would also record with the undergraduate and graduate jazz ensembles. During my first four years of teaching, I played in a folk rock/Americana band that would record several times, releasing an EP and a record. We recorded in Nashville at an analog studio called Welcome to 1979 and at the WBEZ studios in Chicago. Towards the end of that band's run, I began my graduate study at DePaul and wanted the focus of my degree to center around the media arts. Much of my coursework revolved around the media arts, business and creativity. The end result was to use design development to create a section of a course that I would pilot.

I believed that this project would be of great benefit to our school and the students. Chicago Public Schools currently require high school students to take one year of music. Students can complete this credit by taking a variety of courses depending on what each school provides. The high school where I taught has maintained a very strong band and choral program for a long time, and although I would encourage all my students to learn to sing or play an instrument, I had a group of students who were more interested in digital media arts and music production. This pilot project would be the launching point for a bigger goal of teaching a music technology/media arts course at the high school. Through proposals and not taking no for an answer, I was able to purchase 15 iPads, 4 iMacs, and in the last year I was there, 30 Macbook laptops.

I began a music technology club, and we started using the iPads to learn how to use the Apple software GarageBand. GarageBand is a DAW and music sequencer that can record and play back multiple audio tracks. I thought I would attract students who didn't want to sing or play an instrument but were interested in music production. However, the club grew to include band and choir students, non-musicians, guitar and

6

bass players, drummers, poets, MC's, athletes and artists. In addition to my duties as band director, I also served as school Activity Director, planning and supervising many school events including all dances, performances and athletic events. I began to teach my students how to set up, tear down and operate a sound system, how to run a DJ system, shoot video for sporting events, and operate the lighting in the auditorium. The club met several times throughout the week to work different events. Once a week we would gather to use the iPads to work on GarageBand. The lessons I taught were not as structured as my usual lessons, but allowed me to experience teaching this type of content to high school students. The vision was to provide the students with an experience and connect it to content. I knew that if I tried to teach content and then relate it to experiences, I would lose student interest.

In the spring of 2015, while working on this project and other DePaul-related coursework, I was offered a dual position at the College of Music as the Director of Continuing and Online Education and Professor of Music Technology. The opportunity was a once-in-a-lifetime offering and I enthusiastically accepted the position. The opportunity to teach music technology at the college level has provided me with an increased desire to complete this project. My music technology course is a freshman class comprised of band, orchestra and choir music education students. As with my students at the High School, they have had very little experience in the subject area and I am continuing my work the College of Music. The College of Music is solely focused on music education and does not offer a performance or conducting degrees – it prepare its students to be music educators. In addition to teaching my students about music technology, I am also teaching them how to teach the same course.

The journey to designing this project involves many different approaches, including research, interviews, fieldwork, and skill development. This project uses a combination of four creative and artistic media that include expository writing, audio, photography and video, providing accounts of the experiences, research, analysis and evaluation. The area of mastery I am demonstrating through this project is designing my curriculum, which demonstrates my deep understanding of curriculum design and development. The project also demonstrates the technical skills associated with music

7

technology and rubrics that provide examples of proficiency. With this project, I have created a music technology curriculum with one course singled out and presented as an example of the courses in the curriculum. The curriculum also includes a resource catalog, a projected curriculum map, a lesson plan, and course evaluations and assessments.

There are several music technology courses and curricula available, however the majority of them are designed around having the proper facilities, hardware and equipment. The High School and the College of Music currently do not have proper facilities, software or hardware for the ideal implementation. That said, this curriculum is appropriate to each institution's situation because of its usability. This course is designed for current high school students but will be applied to the undergraduate course I teach at the College of Music, as I believe the content is very relevant for music educators, as they will potentially have to teach a music technology course once they begin teaching.

#### **Project context.**

During my undergraduate study, I spent many hours recording, writing music, learning how to use music production software, and expanding my interest in music technology. Since then, I have always wanted to teach a music technology class to high school students. Many of my High School students are interested in music production, recording and mastering, show production, lighting, lighting design, and many other areas of the digital media arts and music technology. Thomas Rudolph quotes David Mash (1991) that technology has created new opportunities in the field of music and that we, as educators, must prepare students to interact with and utilize these tools (Rudolph, 2005). As I am also very interested in all of these areas, I felt I should expand my own knowledge and expertise. Through coursework at DePaul and this integrating project, I have been able to design and develop a well-rounded course.

#### **CHAPTER TWO: LITERATURE REVIEW**

This integrating project was the sum of many different areas of research. I spent time studying design and development research, research in music education, research in curriculum design, mapping, and lesson planning, ultimately refining my knowledge of music technology and its role in today's music classroom. The sum of all of these areas is this project.

Leading up to the design of the curriculum overview and of the Introduction to GarageBand course, I found various aspects of my research to be of interest. For example, I looked to technology integration and digital pedagogy, particularly with respect to music applications (Bauer, 2014; Bitner, 2002; Dorfman, 2013; Rudolph, 1996; Beckstead, 2001), to be of importance. When implementing digital pedagogy, it is important to recognize that technology is a powerful asset to a classroom and shouldn't be implemented for its own sake. Implementation of technology in the classroom can be applied when it enhances student learning and growth (Bauer, 2014). Bitner (2002) discusses several key points to incorporating technology into the classroom successfully. Technology becomes an effective tool when the educator conducting the class has a firm understanding of the technology. Additionally, teachers may need to modify their teaching methods when incorporating technology, and providing a model for the educator will aid in teaching and learning. Bitner (2002) stressed the importance that learning should be the driving factor for using technology in the classroom. Dorfman (2013) adds to this concept by explaining that the learning of technology in teacher education programs does not transfer as instructional delivery in the classroom. Teachers are developing personal technical proficiency but not the ability to utilize technology as a teaching aid. Building on this same concept, Rudolph (1996) concludes that the setting and function of technology in the music technology classroom must be established before implementing that technology. Beckstead (2001) claims that educators should look past the basic efficiencies of technology and focus on the ways they can revise and revamp music technology, as an aid.

9

I also wanted to see how music education helps students to learn, both in the physical classroom and using digital tools (Lipscomb, et al., 2006; Biamonte, et al., 2011; Bissell, 1998; Chamberlin, 1993; Rudolph, 2005). Although recording and editing comprise a complex process, educators can incorporate these activates in their classroom for the purpose of performance, evaluation, and analysis with satisfactory results (Lipscomb, et al., 2006). Furthermore, "technology clearly empowers musicians at all levels to capture their art and create, edit, and produce music in their own voice" (Lipscomb et al., 2006) (p. 55). According to Biamonte, et al. (2011), providing the opportunity to go beyond teaching fundamentals of music and exploring different genres and styles, teaching fundamentals of sound recording, and music production all play a major roll in establishing a deeper, lifelong connection to music. Bissel (1998) points out that teaching composition and improvisation can help a student develop self-expression, access information, complete tasks, use higher-order thinking skills to solve problems, strengthen skills in other subjects like math and science, and advance their enjoyment of music. Chamberlin (1993) states, "If music is to stay a viable part of the school curriculum and meet the needs of students, it must combine technology with traditional skills just as other subject areas are doing" (p. 32). Rudolph (2005) discusses the impact technology has as a teaching tool and its impact on teaching and creating an active learning environment. Music educators have an advantage as today's technology is effective if not essential both in and outside the classroom. Educators can quickly create exercises using music notation software, assess a student's performance from an audio file recorded on and emailed from a mobile device, and focus on specific sections of music via computer or iPad and review with the class live. Rudolph suggests that advancements in music technology have created the opportunity for a more active learner in the music class. "Technology allows students to become actively involved in the study of music while having the satisfaction of creating something themselves" (Rudolph, 2005, p.2).

With this research in mind, I looked for any other important factors that could have a positive influence on student learning, particularly those related to music

10

education (Criswell, 2015; Bauer, 2014), and use this research to develop my own curriculum. Criswell (2015) dives into the new National Core Music Standards, specifically with regards to technology in the music classroom, and how the new National Standards can impact the classroom in a positive way. Criswell explains that the new standards sync well with the modern technology music teachers have at their disposal. In fact, the new standards provide a greater opportunity for music teachers to incorporate not only technology but also performance-based courses, music appreciation, music theory, and music history. Criswell interviews Richard McCready, a music educator and well-known advocate of music technology, who points out that music technology standards are substantially different from the standards for a computer-based course. The standards acknowledge that music is being taught in a music technology class and technology is the vehicle. Bauer (2014) discusses key principles of learning, stating that learning is "contextual, active, social, and reflective" (p. 164). Bauer (2014) also states that if technology is applied correctly, it will help connect prior knowledge to new concepts and aid in the learning process.

My research yielded some seminal articles on developing curriculum and courses (Chiarelott, 2006; Hale, 2008; Wiggins & McTighe, 2005; de Frece, 2010). Chiarelott (2006) presents the idea of Contextual Teaching and Learning (CTL). At its most basic definition, CTL is a teaching style that allows students to relate content to real-world situations, and can assist with curriculum development and mapping with its focus on connecting content with context. Chiarelott (2006) goes on to state that curriculum mapping can assist the educator develop and evaluate a curriculum by examining the different stages of planning and delivery. Hale (2008) states that curriculum mapping is a continual work in progress. Wiggins & McTighe (2005) conclude that teachers are in fact designers as well (p. 13). Teachers construct curricula, units, and lessons plans with desired learning outcomes in mind, allowing them to identify what students should know and what is feasible to accomplish, as well as create effective learning strategies and establish appropriate assessments. De Frece (2010) concludes that unit and lessons plans

11

are key components of the "learning sequence" (p. 32) that ultimately improve student understanding.

In summary, I wanted my research to provide a strong foundation with which to create the GarageBand Course. What I learned helped me to develop an overall strategy for curriculum design in general music technology as well as interdisciplinary subjects. In the next section, I will address how I developed Introduction to GarageBand using the qualitative methodology of design development.

#### **CHAPTER THREE: METHODOLOGY AND ANALYSIS**

For designing a music course and ultimately developing a curriculum with multiple courses, the methodology that made the most sense to select was a qualitative methodology. The methodology that seemed most compatible for my project was the design development methodology because it was aligned with my music curriculum's project plans.

#### **Design and Development Research**

For the best practices in design and development research, I turned to *Design and Development Research* by Rita C. Richey and James D. Klein (2007). Throughout their research, they provide methods and strategies for design and development research using a mixture of qualitative and quantitative research methods. Richey and Klein describe two models of design and development research, namely tool research and model research. These models cover many issues with design and development. "In many respects, design development research serves as an important link between theory and practice" (p. 14).

#### **Music Education Research**

My initial concern with design and development research was its ability to blend with qualitative methods used in music education research. Surprisingly, the qualitative methods used are very similar. Bresler and Stake (2006) consider qualitative research to be a general term used to describe a variety of methods used in music education research that share similar qualities. Research in music education has traditionally utilized quantitative methods of research based in general education research (2006). As a musician, teacher and conductor, I was participating in qualitative methods on a daily basis. Much of my assessment and evaluation of student improvement, as well as the identification of problems and solutions, is rooted in observation.

## Curriculum Design, Curriculum Mapping & Lesson Planning

Throughout my career, I have been asked by several administrators to create curriculum maps and lesson plans aligned with districts guidelines and initiatives for high

school music education. Luckily my colleagues contributed and supported each other through these projects. My administrators also understood that my curriculum maps and lesson plans were not static but "living" documents. This integrating project is about a curriculum for music technology, the development of which requires researching curriculum design, mapping, and lesson planning, as well as providing examples of what I did along with rationales of methodologies. Curriculum design, mapping, and lesson planning are established for a myriad of reasons, the most important being a student's education. Samples of projected curriculum maps, unit plans, and a projected syllabus can be found in the Appendix section.

#### **Curriculum Design**

Throughout my teaching career, I have been interested in connecting strategies for student learning to real-world application. Chiarelott (2006) references a definition of contextual teaching, and states that learning CTL is a "conception of teaching and learning that helps teachers relate subject matter content to real world situations and motivates students to make connections between knowledge and its applications to their lives" (p. 5). CTL strategies include problem solving, independent learning, peer-to-peer teaching, learning in real situations, and authentic assessment. CTL can be incorporated with curriculum mapping and other education design tools.

While in college, my percussion professor asked me to provide a plan for learning various pieces of music. The plan I submitted was designed to practice from the beginning and work to the end. My professor pulled out a piece of manuscript paper and we began to map out this plan working with the desired learning outcomes listed first. I now realize the importance of that lesson and the impact it has had on this project, and the incorporation of curriculum design and mapping.

Although I had created curriculum maps and written lesson plans, they were not always designed for the appropriate outcome. As a result of my research, I have realized that successful curricula are not designed from what the teacher wants to teach or believes is important. Rather, content is driven by district, state and national standards

that inform the curriculum design (Wiggins and McTighe, 2005). Experience-based selfgenerated standards can also be taken under consideration when designing curriculum maps and lesson plans (Hale, 2008).

14

## **Curriculum Mapping & Lesson Planning**

Hale (2008) defines curriculum mapping as "an ongoing, calendar-based process involving teacher-designed operational and planned-learning curriculum, collaborative inquiry, and data-driven decision making" (p. 283). During my undergraduate studies and first years as a teacher, I used several different curriculum mapping templates and mapping tools. The rationale for mapping and its carrying forms was explained simply as a task to be completed and submitted with no further explanation. Through the research of this project, it is clear that curriculum mapping is much more than a formality.

Before considering the different types of maps, there needs to be an understanding of what curriculum mapping charts. There are essentially two views: "planned learning" and "operational curriculum" (Hales, 2008, p.2). Planned learning refers to content that may or may not be taught. Operational curriculum refers to the learning that has actually occurred. Hale states that there are four types of curriculum maps: Diary, Projected, Consensus and Essential" (p.12).

Diary Maps document the content that students have been taught based on selfgenerated, local, state, and national standards, while a Projected Map presents the content to be learned based these same standards. Consensus Maps involve multiple teachers from within a department, or between inter-and cross-disciplinary teams. Prior to instruction, teachers collaborate in planning the curriculum based on self-generated, district, state, and national standards. Essential Maps are district-wide in scope, and again, planning takes place before instruction. Teachers and administrators, each representing a school within a district, collaborate and agree on mandatory planned learning for a given course(s) based on self-generated, state, district, and national standards. For the purpose of this project, I will be using a Projected Map because it is

15

#### planned prior to instruction and is structured in monthly increments.

Month	Content	Skills	Assessment	Standards
anuary	PERSONAL CONNECTIONS: VISUAL ARTS A. The "Art" of Communication: Personal Position Resources Student-Selected Visual Art Samples	A1. Defend orally personal stance while communicating responses to visual art using domain- specific language A2. Speak in qualitative terms when responding to worke of art.	A1-A2. FOR Rotating Small- Group Discussions (Evaluation:Teacher Ob/ Anecdotal Records)	A. VA2.1.401 (D) VA2.1.402 (D) VA2.1.403 (D)
	B. Sculpture: Compositional Techniques Resources Art Period of Personal Interest Web-Based Research Wet/Dry Clay	B1. Define visually and orally 3 self-selected rules of proportion, form, shape using personal-choice examples B2. Sketch personal idea concept for planned freeform sculpture B3. Construct clay-based work of art in response to stylized characteristics observed in visual arts from self-selected culture/era	BI.Art Portfolio (Evaluation: Teacher Ob/Rubric) B2-B3.Freeform Sculpture (Evaluation: Rubric/ Peer Review)	B. VA1.1.303 (R) VA1.2.301 (R) VA1.3.301 (R)
	C. Cultural Influence on the Arts: A Historical Perspective Resources Across Indian Lands DVD Exploring Cultural Traditions: Art of Japan Book Fantastic Figures, Oaxacan Ceramic Folk Art DVD Student-Selected Internet Sites	C1. Compare and contrast orally and in writing works of art that communicate significant cultural meanings based on designated era C2. Research electronically and write position paper: theme of thesis statementhow exposure to various cultures and styles influences individuals' feelings toward art forms and artworks	C1-C2. Arts/Culture Position Paper (Evaluation: Arts Rubric/Language Arts Rubric) C1. FOR Large-Group Discussions (Evaluation: Peer Critique/Rubric)	C. VA2.3.301 (D VA2.3.302 (D VA3.3.203 (D VA3.5.302 (D ELA W1.2.1 ( ELA R2.3.2 (I
Į.	D. Artistic Ideas: Expressions/ Interpretations Resources Student-Selected Mixed-Medium Art Samples	D1. Defend orally personal stance reflecting on nature of defining "What is art?"/"What is beauty?" D2. Appraise visually and orally works of art and art elements designed to imitate systems in nature	D1. Art-Versus-Beauty Debate (Evaluation: Peer Review/Debate Guidelines) D2. Gallery Walk 2-Minute Presentation (Evaluation: Peer Review/Rubric)	D. VA3.1.301 (D VA3.1.303 (D VA3.5.303 (D ELA S2.1.3 (F

**Figure 5.8** High School Visual and Performing Arts: Semester 2 Projected/Diary Map Month

*Figure 1*.Projected/Diary Map Month. Reprinted from *A guide to curriculum mapping: Planning, implementing, and sustaining the process.* (p. 128), by Hale, J. A., Thousand Oaks, CA: Corwin Press. Copyright 2008.

Curriculum Maps are designed to focus on what, when, and how, identifing several elements of the learning process. The three most common elements are content, skills and assessment (Koppang, 2004). Additional elements such as standards and essential questions increase the value of a Curriculum Map. Earlier in this section, I mentioned that planned learning may or may not be taught. This is important because it is very difficult to teach everything that is planned for a school year.

There are many variables that interact with the planned curriculum and the rest of the school year. As teachers, our job requires us to have the ability to know what to teach,

when to teach it, how to teach it, how to assess, and how to ensure that students' needs are met. Teaching to the curriculum is not teaching (Johnson, 2005). Curriculum Maps are guides and means of communicating to colleagues and administrators (Koppang, 2004).

16

#### **Lesson Planning**

Lesson plans focus on the specific and strategic blueprint teachers use to provide experience and learning for students (Hale 2008). When I began teaching, I was required to submit weekly lesson plans for all of my classes. I would spend hours writing plans, breaking down each 50-minute class period into minute-by-minute scenes. When I began to teach, however the structure of my lesson would begin to fall apart. The reason for this is that I didn't take into account the announcements I needed to make, the announcements made on the school intercom, calls from the attendance office, sick students, the occasional glitch that might appear, or some piece of classroom technology failing to operate. My lesson plans also didn't include the spectrum of student abilities, behavior, the pace of learning a new skill or concept, or rate of completing a task. Luckily, my mentor teacher happened to be the Director of Bands, and he advised me to approach daily and weekly planning separately. Lesson planning at the daily and weekly levels became a general outline that was flexible and offered a variety of exercises, activities, and lectures that could be added or removed based on the students and overall vibe of each class.

While creating the lesson plans for this project, I stumbled upon several articles regarding lesson planning and teaching for music educators. While researching lesson plans, I came across an article written by music educator Robert de Frece who states that there is "no actual dissonance between the art of music and the science of teaching music" (de Frece, 2010, p.32).

#### **Music Technology and Instruction**

It is important to have a clear understanding of the history of music technology. Music technology is a large topic comprised of many subdivisions that include music notation software, recording software, recording arts, piano classes, music for film, software design, and much more. I have included a history of music technology in this project because it is essential in the design and development of my curriculum.

Searching for quality resources, I began to read through *Theory and practice of technology-based music instruction* by Jay Dorfman (2013). Dorfman provides insight into technology-based music instruction, and guidance for choosing materials, planning instruction, and assessment. His book is not a how-to guide for using music technology hardware and software; rather, he explains that technology-based music instruction (TBMI), refers to music teaching where technology is "the major medium by which music concepts and skills are introduced, reinforced, and assessed" (Dorfman, 2013, p. 50). After seeking relevant research on best practices of design development, curriculum design, music educational design, and curriculum implementation, I felt ready to pursue the actual design and development.

#### Analysis of What I Did

I was careful to conduct interviews of music tech teachers, professors and industry professionals to double-check and triage my course design to assure that I was on track with my course/program design. In addition, I relied upon many of the lessons learned from the coursework fulfilled at the SNL DePaul program, as well as my fieldwork with my Integrating Project Assessor, and additional continuing education courses and research undertaken through the College of Music Continuing Education program (called MECA).

#### **Field Work**

In addition to my research and interviews, I wanted to include some fieldwork in a recording studio to help prepare me for working with students in a studio-type environment. I was introduced to my Integrating Project Assessor through a college professor who had worked with him. After many conversations about my goals, the MAAPS Program, my personal studio experience, and my integrated project, I felt that he was the right person for me to study with and guide me through my fieldwork. He has been a part-time faculty member at a College since 2000. He teaches Recording I (Audio Processing) and understands my goals and the integrated project framework, and has knowledge and experience as a professional recording engineer. When planning this project, I wanted to make sure I fulfilled the requirements for the MAAPS as well as archive some personal goals that I believed were crucial to my success as an educator.

One of the by-products of this project was to experience being the recording engineer in both a digital and analog studio. The reason for experiencing both settings is that both require different skills and abilities that I want to be able to share with my students.

18

#### The Band Music Sessions

After several meetings with my Integrating Project Assessor, we decided to begin a production and mixing project focusing heavily on the fundamentals of tracking and mixing. To ensure the best environment for this project, I booked studio time at three local Chicago studios: Electrical Audio, Wall2Wall, and Minbal. The project totals over 50 hours. This includes 30 hours of studio time and 20 hours of face-to-face meetings with him, planning, lecturing, and explaining different competencies aspects of the tracking and mixing processes. In addition to booking studios and coordinating meetings with him, I also needed to find a professional group that I could work with consistently. The Band is a local rock band led by **Interviewee 3 (band director).** He is a former classmate of mine while I attended the College of Music and the current Assistant Band Director and Guitar Teacher at College Prep. The great connection that he and I shared was the understanding of the educational value of the project.

I would track and mix two of their songs at the three studios listed above. We would record to 2" tape at Electrical, record with ProTools at Wall2Wall, and mix using ProTools at Minbal. The big picture for this project was to immerse myself into the recording arts and experience tracking and mixing as the engineer, producer, and assistant.

I began playing the drums in 4th grade, later joining the school band, taking private lessons, playing through high school, and auditing and attending the College of Music for a degree in Music Education. Throughout my formative years, I recorded with many bands and also dabbled in recording as a hobby. I started teaching at the High School in 2008 and throughout my seven years I had many fantastic students, many of whom had a love for music and wanted to turn that into a career. I had students interested in music production, composition, marketing, music video production, mixing, sound design, and many other music-related fields. I didn't have a strong knowledge base in any

of these arenas; in fact, no one at the High School did. I wanted to have the opportunity to provide my students with some experience and insight into the other areas of music outside of performance and music education. The purpose of this integrated project is to help in acquiring some experience and knowledge that I can use to advise and instruct my students.

19

#### **Pre-session Meetings**

Prior to recording the band, I met with my Integrating Project Assessor on a biweekly basis for two months. The resource I used for the fieldwork was recommended by he, who uses this text in his undergraduate classes at his College. This has become a vital resource for this project and the undergraduate courses I teach at the College of Music.

#### Music Technology

Music technology isn't just about recording. I wanted to incorporate GarageBand, music notation software, and scoring for film, and to expose students to live sound and live mixing. This portion of the project involved the President Emeritus at the College of Music and instructor of their Music Technology class. The music technology course at the College of Music is designed to prepare music educators to have knowledge of the software and hardware used in the music classroom. One of my dreams is to teach this course at the College of Music, which I was keeping in mind while developing and completing this project.

The project goal is to design a music curriculum with several courses. I will provide a projected curriculum map and an example of a lesson plan for one of the courses in the curriculum. The curriculum will be designed for high school students but I will also be working with music educators to help them develop a music technology curriculum for their schools based on the technology, software, hardware, and budget they may have in their respective environments.

#### The Design Development Team Approach

For design development, a teamwork approach is important, and it is also a very important part of this project. My advising team consists of three people. Dr. Ruth

Gannon Cook is providing great insight into research, curriculum design, and knowledge of the Integrated Project requirements. The President Emeritus is also providing guidance with research, curriculum design and development, and expertise in the content area of music education and music technology. My Integrating Project Assessor is providing a vast knowledge of recording, music technology, curriculum ideas, creative project ideas, and expertise as a sound engineer. My advising team has gone above and beyond their duties, all communicating with me and responding in a timely manner with encouraging, valuable, and positive feedback; most importantly they provided feedback on my curriculum design.

## **Data Analysis & Presentation**

The information that I extracted for the program came from my research, fieldwork, interviews, coursework, and prior knowledge, and was analyzed and interpreted with both the curriculum design and students in mind. I wanted the curriculum to be accessible and rich in content as well as challenging and well rounded. This project's creative products transcend the technical and craft components of the project because the music technology curriculum is the sum of creativity, research, technical skills, design, and development. I plan to implement the curriculum in reality with actual high school students upon completion of this project, and to continue to conduct research and evaluation to refine my curriculum through each course of the program.

#### Analysis

I was inspired to create a curriculum with several courses for a high school music technology class because there is interest among my students. As their teacher, I also have a desire to provide them with a quality educational experience that will support their interests and future goals. Bauer (2014) states that music and technology are intertwined in many ways, and that technology enables individuals to be musical in a variety of ways, even if they lack a formal musical background. Early in the draft stages of this project, I knew that developing a music technology curriculum with four courses would be a great idea as my integrated project. I knew the project I chose would be beneficial to me as an educator, but I also knew that I wanted the experience and agency to push me to a new level.

21

#### Design

The project I have designed is a music technology curriculum for high school students that is comprised of four courses, each 12 weeks long. The project takes a constructivist approach where I present theories and then invite students to explore the technologies with me, ask questions, and formulate their own ideas of composition and delivery. Included in this document is an example of a Projected Map representing one of the four courses that will form my music technology curriculum (see Appendix A to view the course Projected Map).

#### Development

The curriculum includes four 12-week courses, each held five days a week for 50 minutes each. This curriculum is designed for each course to meet in a computer lab. The main reason for this is that "in the lab, there is typically more emphasis on creative work, rather than re-creative work; there is more focus on independent exploration than on large-group productivity" (Dorfman, p. 224). The curriculum utilizes technology as the main vehicle to introduce musical concepts and skills, to strengthen those skills, and to assess outcomes. By focusing on one of the four courses in this curriculum, Intro to GarageBand, the students will explore different content, have new outcomes, and multiple assessments each week. The students will also have a class discussion and blog post each week.

#### Implementation

Implementation of this course will be based on several factors. There are some physical constraints, including hardware, software, classroom space, and funding. Revisions to the course will be continuous even as it is running. During implementation, I will review my effectiveness to improve the course in subsequent semesters. Students will also take part in summative and formative assessments that will help in improving course workload, content and flow.

#### Final Look at the Results

This purpose of this project is designing curriculum for high school

students based on the National Coalition for CORE ARTS Standards for Music Technology. Using *Design and Development Research* by Richey and Klein, *Music Learning Today: Digital Pedagogy for Creating, Performing* by Bauer, and *Theory and Practice of Technology-Based Music Instruction* by Dorfman set me on the right path to creating a solid high school music technology curriculum.

This project can impact not only the students who will take this curriculum, but also on the field of music education and the content area of music technology. I too have been impacted by the work of this project. Like myself, many educators are looking for new resources, engaging curriculum, creative projects, and unit and lesson plans. This curriculum will provide all of those aspects and contribute to a growing subject area in the field of music education.

My coursework, Liberal Learning seminars, and this integrated project have pushed me to new level as an educator, student, and citizen. I chose to do the integrated project because I felt that it was the only way to truly connect all the parts of my MAAPS degree, and the only way I would feel truly accomplished.

#### Implications

The concept of think-do-reflect is very similar to practicing an instrument and teaching. Every day I am planning, teaching, and reflecting. Whether I am working on a solo piece of music or performing with a large ensemble, I practice, perform, and assess myself. Conceptualizing this integrated project has involved a lot of thinking, doing, and reflecting. When I started this proposal, I had to focus, read, and think clearly about every document and form related to the project. After feeling comfortable, I began to develop my idea and concept for the project. I would share ideas with my colleagues, graduate advisor, professional advisor, and final assessor to help dial in a solid project idea. I would then spend time writing down ideas, researching, and reflecting. With some minor exceptions, the process is very similar to teaching and performing.

The Liberal Learning components I drew upon were Personal Effectiveness, Interpersonal Effectiveness, Organizational Effectiveness, and Inquiry Effectiveness. I drew components from my Personal Effectiveness course regarding stress management;

as studio sessions are often 12-14 hours long, interacting with new people and navigating advanced technology and equipment can become very stressful.

23

## Reflection

I've had the opportunity to reflect on this program during the winter quarter while I was taking a Personal Effectiveness Liberal Learning seminar, Managing Emotions in Adulthood, with Dr. Matamonasa. Throughout the course, I reflected on the experiences I had while in the MAAPS program. I realized that I had experienced and accomplished much in my personal life, academic life, and professional career. Some of those milestones include working full time as a band director and activity director, marriage, changing jobs, and maintaining my GPA. Taking this course with Dr. Matamonasa was fortuitous: it was the best class I could have taken at the perfect time. I was experiencing so many changes and emotions, and had not reflected on any of them until her course. Throughout all my Liberal Learning seminars, I was able to develop a toolbox of different approaches and strategies for self-reflection, eliciting constructive feedback, and self-assessment. Reflecting on my entire graduate school experience, I do believe that all of my courses have prepared me for this project.

#### Agency

This project helped me understand the concept of agency and how it has affected my work and life. The agency I am using has been my own work. Two years ago when I started the MAAPS program, I remember discussions about how this degree program would require a lot of personal responsibility for setting and achieving goals. Those discussions were right, and I am so glad to know that I have developed my agency through my own time and efforts. For many courses I had to push myself to another level to bring my work to a higher level, and each time I did that I was unconsciously adding value to myself. The three areas of agency in which I feel I have made the most progress are: identifying and using a variety of learning resources, turning events into experiences for learning, and managing time and tasks to fulfill commitments. These three skills were refined primarily because of my very busy work schedule. If I wanted to make it through the program, I knew I would have to become efficient at the three skills listed above.

24

#### Flexibility

Finally, the last of the three elements of practice, that of understanding flexibility, became apparent to me as I had to learn new technologies while designing a curriculum when these were fairly new concepts to me. I was used to designing lesson plans, but this involved the overseeing of a program and directing a new curriculum, both advanced compared to my previous experiences. I learned how to plan and develop on a grander scale, and how to build a curriculum from the ground up. Another challenge that required flexibility was discovering and understanding how to apply qualitative design development to this project. There was a slight learning curve but I didn't give up or stray from the path.

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26

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27

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## Appendix A

29

## Sample GarageBand Projected Map

#### Music Tech 1: Garage Band Fall Semester Projected Map

Month	Content	Skills	Assessment	Standards
August	Introduction to			Standard:
	GarageBand	Creating		MU:Cr1.1 .T.la
1		<ul> <li>Construct and document knowledge</li> </ul>	<ul> <li>Using class generated rubrics,</li> </ul>	
1	Using Prerecorded Media	through exploration of the digital tool,	evaluate improvisations,	Generate melodic,
1		applying new information to generate	phrases, and melodic, rhythmic,	rhythmic, and
1		musical ideas.	or harmonic ideas or phrases,	harmonic ideas for
1	Creating Song Arrangements	<ul> <li>Work collaboratively and</li> </ul>	while meeting correlating	compositions and
1		independently to improvise, generate	standard.	improvisations using
1		and perform rhythmic, melodic, and/or		digital tools.
1		harmonic patterns and ideas or phrase	<ul> <li>Write and present reflections</li> </ul>	
1	Recording Live Performances		of work with the digital tool.	MU:Cr2.1.T.la
1				Select melodic,
1		<ul> <li>Work with peers to create a</li> </ul>		rhythmic, and
1		musical plan and create larger	<ul> <li>Create and write reflections of</li> </ul>	harmonic ideas to
1		works using digital	the planning, creating, and	develop
1		tools or instruments.	performing process, assessing	into a larger work
1		<ul> <li>Create a visual plan with</li> </ul>	levels of musical literacy with	using
1		icons and verbal descriptions	the elements of music and	digital tools and
1		<ul> <li>Create a presentation</li> </ul>	reading/writing music, with the	resources.
1		format to share their work	use of the digital tool or	
1		throughout the process	instrument.	MU:Re7.1.T.la
1				Cite reasons for
1				choosing music based
1				on the use of the
1				elements of music,
1				agital and electronic
1				aspects, and
1				connections to interest
1				or purpose
	1			

Music Tech 1: Garage Band Fall Semester Projected Map

August       GarageBand for iOS       Creating       • Using class generated rubrics, applying new information to generate musical ideas.       • Using class generated rubrics, applying new information to generate musical ideas.       • Using class generated rubrics, or hythmic, and harmonic ideas or phrases, and melodic, rhythmic, and harmonic ideas or phrases, and melodic, rhythmic, and perform rhythmic, melodic, and/or harmonic ideas or phrases, and melodic, rhythmic, and perform rhythmic, melodic, and/or harmonic ideas or phrases, and melodic, rhythmic, and perform rhythmic, melodic, and/or harmonic ideas or phrases, and melodic, rhythmic, and perform rhythmic, melodic, and/or harmonic patterns and ideas or phrases, and melodic, rhythmic, and standard.       • Work collaboratively and independently to improvise generate and perform rhythmic, melodic, and/or harmonic patterns and ideas or phrases, assessing levels of musical ilteracy with icons and verbal descriptions • Create a presentation format to share their work throughout the process       • Write and present reflections of the planning, creating, and perform usic, with the use of the digital tool or instruments.       • Create a rusual plan with icons and verbal descriptions • Create a presentation format to share their work throughout the process       • Create and write reflections of music, with the use of the digital tool or instrument.       MU:Cr2.1.T.Ia	Month	Content	Skills	Assessment	Standards
Navigation, Controls, Touch InstrumentsCreating • Construct and document knowledge through exploration of the digital tool, applying new information to generate and perform hythmic, melodic, and/or harmonic patterns and ideas or phrases• Using class generated rubrics, evaluate improvisations, phrases, and melodic, rhythmic, or harmonic ideas or phrases, while meeting correlating standard.• Work collaboratively and improvisations using digital tools.• Wurccr.1.T.IaInput Dependent Features• Work with peers to create a musical plan and create larger works using digital tools or instruments. • Create a visual plan with icons and verbal descriptions • Create a presentation format to share their work throughout the process• Create and write reflections of the planning, creating, and performing morcess, assessing levels of musical latool or instrument.• Create and write reflections of the planning, creating, and performing music, with the use of the digital tool or instrument.• Mu:Cr2.1.T.Ia Select melodic, rhythmic, and harmonic ideas to the planning, creating, and performing music, with the use of the digital tool or instrument.MU:Cr2.1.T.Ia Select melodic, rhythmic, and harmonic ideas to the planning, creating, and performing music, with the use of the digital tool or instrument.MU:Cr2.1.T.Ia Select melodic, rhythmic, and harmonic ideas to the planning, creating, and performing music, with the use of the digital tool or instrument.MU:Cr2.1.T.Ia Create and write reflections of the offer and reading/writing music, with the using digital tool or instrument.MU:Re7.1.T.Ia• Create and write reflections of reading/writing music, with the usi	August	GarageBand for iOS			Standard:
<ul> <li>Construct and document knowledge through exploration of the digital tool, applying new information to generate musical ideas.</li> <li>Work collaboratively and independently to improvise, generate and perform rhythmic, melodic, and/or harmonic patterns and ideas or phrase</li> <li>Work with peers to create a musical glan and create larger works using digital tools or instruments.</li> <li>Create a visual plan with icons and verbal descriptions</li> <li>Create a visual plan with format to share their work throughout the process</li> <li>Create a presentation of work uith peers to free a visual plan with icons and verbal descriptions</li> <li>Create a presentation format to share their work throughout the process</li> </ul>			Creating		MU:Cr1.1 .T.la
Navigation, Controls, Touch Instruments       through exploration of the digital tool, applying new information to generate musical ideas.       evaluate improvisations, phrases, and melodic, rhythmic, or harmonic ideas or phrases, and perform rhythmic, melodic, and/or harmonic patterns and ideas or phrase       Generate melodic, rhythmic, and harmonic ideas or phrases, and perform rhythmic, melodic, and/or harmonic patterns and ideas or phrase       Generate melodic, rhythmic, and harmonic ideas or phrases, while meeting correlating standard.         • Work with peers to create a musical plan and create larger works using digital tools or instruments.       • Write and present reflections of two is visuing digital tools or instruments.       • Create and write reflections of performing process, assessing levels of musical literacy with use of the digital tool or instrument.       • Mu: <b>Cr2.1.T.ia</b> Select melodic, rhythmic, and         • Create a presentation format to share their work throughout the process       • Create and write reflections of the digital tool or instrument.       • Mu: <b>Re7.1.T.ia</b> Cite reasons for choosing music based on the use of the digital and electronic aspects, and connections to interes or purpose			<ul> <li>Construct and document knowledge</li> </ul>	<ul> <li>Using class generated rubrics,</li> </ul>	
Touch Instruments       applying new information to generate musical ideas.       phrases, and melodic, rhythmic, and narmonic ideas or phrases, while meeting correlating standard.       harmonic ideas for compositions and improvisations using digital tools.         Input Dependent Features       • Work with peers to create a musical plan and create larger works using digital tools or instruments.       • Write and present reflections of the planning, creating, and performing process, assessing levels of musica and performing music, with the elements of music and reading music, with the elements of music and reading music based on the use of the digital tool or instrument.       • Wirk early reflections of the planning, creating, and performing morecess, assessing levels of musical and and vertice of musica and reading music, with the elements of music and the oreading music, with the digital tool or instrument.       • Wirke7.1.T.la		Navigation, Controls,	through exploration of the digital tool,	evaluate improvisations,	Generate melodic,
Smart Instrumentsmusical ideas. • Work collaboratively and independently to improvise, generate and perform rhythmic, melodic, and/or harmonic patterns and ideas or phraseor harmonic ideas or phrases, while meeting correlating standard.harmonic ideas for compositions using digital tools.• Work with peers to create a musical plan and create larger works using digital tools or instruments. • Create a yresentation format to share their work throughout the process• Write and present reflections of the planning, creating, and reading/writing music, with the elements of music, and resources.MU:Cr2.1.T.Ia Select melodic, rhythmic, and harmonic ideas to develop into a larger work using digital tools or instruments. • Create a presentation format to share their work throughout the process• Create and write reflections of the planning, creating, and reading/writing music, with the use of the digital tool or instrument.MU:Re7.1.T.Ia Cite reasons for choosing music based on the use of the elements of music, digital and electronic aspects, and connections to interes or purpose		Touch Instruments	applying new information to generate	phrases, and melodic, rhythmic,	rhythmic, and
Smart Instruments       • Work collaboratively and independently to improvise, generate and perform rhythmic, meiodic, and/or harmonic patterns and ideas or phrase       while meeting correlating standard.       compositions and improvisations using digital tools.         • Work with peers to create a musical plan and create larger works using digital tools or instruments.       • Write and present reflections of work with the digital tool.       • Wurc 2.1.T.Ia Select melodic, rhythmic, and         • Create a visual plan with icons and verbal descriptions of remat to share their work throughout the process       • Create and write reflections of the planning, creating, and reading/writing music, with the use of the digital tool or instrument.       • Mu: <b>Cr2.1.T.Ia</b> Select melodic, rhythmic, and         • Wirk with peers to create a musical plan and create larger works using digital tools or instruments.       • Create and write reflections of the planning, creating, and reading/writing music, with the use of the digital tool or instrument.       • Mu: <b>Re7.1.T.Ia</b> Cite reasons for choosing music based on the use of the elements of music, digital and electronic aspects, and connections to interes or purpose			musical ideas.	or harmonic ideas or phrases,	harmonic ideas for
Input Dependent Features independently to improvise, generate and perform rhythmic, melodic, and/or harmonic patterns and ideas or phrase . Work with peers to create a musical plan and create larger works using digital tools or instruments Create a visual plan with icons and verbal descriptions . Create a presentation format to share their work throughout the process . Create a presentation format to share their work throughout the process . Create and write reflections of musical and digital tools		Smart Instruments	<ul> <li>Work collaboratively and</li> </ul>	while meeting correlating	compositions and
Input Dependent Features and perform rhythmic, melodic, and/or harmonic patterns and ideas or phrase . • Write and present reflections of work with the digital tool. • Work with peers to create a musical plan and create larger works using digital tools are the planning, creating, and performing process, assessing levels of musica literacy with the elements of music, with the grocess of the digital tool or instrument. • Create a presentation format to share their work throughout the process			independently to improvise, generate	standard.	improvisations using
harmonic patterns and ideas or phrase • Write and present reflections of work with the digital tool. • Work with peers to create a musical plan and create larger works using digital tools or instruments. • Create a visual plan with icons and verbal descriptions • Create a presentation format to share their work throughout the process • Create a present their work throughout the process • Create a present their work throughout the process • Write and present reflections • Create and write reflections of • Create and write reflections of • Create a visual plan with icons and verbal descriptions • Create a presentation • Create a presentation • Create a present their work throughout the process • Mu:Re7.1.T.la • MU:Re7.1.T.la • MU:Re7.1.T.la • Mu:Re7.1.T.la • Create and write reflections of • Create and write reflections of • Create a presentation • of the digital tool or instrument. • Mu:Re7.1.T.la • Create and write reflections of • Create and write reflections of • Create a presentation • or purpose		Input Dependent Features	and perform rhythmic, melodic, and/or		digital tools.
<ul> <li>Work with peers to create a musical plan and create larger works using digital tools or instruments.</li> <li>Create a visual plan with icons and verbal descriptions format to share their work throughout the process</li> </ul>			harmonic patterns and ideas or phrase	<ul> <li>Write and present reflections</li> </ul>	
<ul> <li>Work with peers to create a musical plan and create larger works using digital tools or instruments.</li> <li>Create a visual plan with licons and verbal descriptions</li> <li>Create a presentation format to share their work throughout the process</li> </ul>				of work with the digital tool.	MU:Cr2.1.T.la
<ul> <li>Work with peers to create a musical plan and create larger works using digital tools or instruments.</li> <li>Create a visual plan with icons and verbal descriptions</li> <li>Create a presentation format to share their work throughout the process</li> </ul>					Select melodic,
musical plan and create larger works using digital tools or instruments. <ul> <li>Create and write reflections of the planning, creating, and performing process, assessing</li> <li>Create and write reflections of the planning, creating, and performing process, assessing</li> <li>Create and write reflections of the planning, creating, and performing process, assessing</li> <li>Create a presentation format to share their work throughout the process</li> </ul> <ul> <li>Create and write reflections of the planning, creating, and performing process, assessing</li> <li>Levels of musical literacy with the elements of music and reading/writing music, with the use of the digital tool or instrument.</li> </ul> <ul> <li>MU:Re7.1.T.Ia Cite reasons for choosing music based on the use of the elements of music, digital and electronic aspects, and connections to interess or purpose</li> </ul>			<ul> <li>Work with peers to create a</li> </ul>		rhythmic, and
works using digital tools or instruments.       performing process, assessing levels of musical literacy with loons and verbal descriptions       develop         • Create a visual plan with loons and verbal descriptions       levels of musical literacy with reading/writing music, with the use of the digital tool or instrument.       digital tools and resources.         • Create a presentation format to share their work throughout the process       use of the digital tool or instrument.       MU:Re7.1.T.Ia Cite reasons for choosing music based on the use of the elements of music, digital and electronic aspects, and connections to interes or purpose			musical plan and create larger	<ul> <li>Create and write reflections of</li> </ul>	harmonic ideas to
tools or instruments.       performing process, assessing levels of musical literacy with levels of musica literacy with the elements of music and reading/writing music, with the organization format to share their work throughout the process       into a larger work using digital tools and reading/writing music, with the elements of music allow or listrument. <ul> <li>             Create a presentation format to share their work throughout the process</li> <li>             music and reading/writing music, with the elements of the digital tool or listrument.</li> <li>             music and reading/writing music, with the elements of music and resources.</li> </ul> <ul> <li>             music and the digital tool or listrument.</li> <li>             music and the use of the elements of music, and connections to interes or purpose</li> </ul> <ul> <li>             music and the use of the elements of music, and connections to interes or purpose</li> <li>             music and the use of the elements of music, and connections to interes or purpose</li> </ul>			works using digital	the planning, creating, and	develop
Create a visual plan with icons and verbal descriptions Create a presentation format to share their work throughout the process			tools or instruments.	performing process, assessing	into a larger work
Icons and verbal descriptions the elements of music and digital tools and reading/writing music, with the format to share their work throughout the process throughout the process throughout the process through the process or purpose the statement. If the digital tool or the use of the digital tool or instrument. If the digital tool or the use of the elements of music, with the use of the digital tool or instrument.			<ul> <li>Create a visual plan with</li> </ul>	levels of musical literacy with	using
Create a presentation reading/writing music, with the format to share their work use of the digital tool or instrument.     (It reasons for choosing music based on the use of the elements of music, digital and electronic aspects, and connections to interes or purpose			icons and verbal descriptions	the elements of music and	digital tools and
format to share their work use of the digital tool or throughout the process instrument. MU:Re7.1.T.Ia Cite reasons for choosing music based on the use of the elements of music, digital and electronic aspects, and connections to interess or purpose			<ul> <li>Create a presentation</li> </ul>	reading/writing music, with the	resources.
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Cite reasons for choosing music based on the use of the elements of music, digital and electronic aspects, and connections to interes or purpose			throughout the process	instrument.	MU:Re7.1.T.la
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on the use of the elements of music, digital and electronic aspects, and connections to interes or purpose					choosing music based
digital and electronic aspects, and connections to interes or purpose					on the use of the
aspects, and connections to interes or purpose					digital and electropic
aspects, and connections to interes or purpose					digital and electronic
or purpose					aspects, and
or purpose					connections to interest
					or purpose

## Appendix A

30

Sample GarageBand Projected Map (continued)

#### Music Tech 1: Garage Band Fall Semester Projected Map

September	Editing with GarageBand	Creating		Standard: MU:Cr3.1.T.la
		<ul> <li>Lead discussions about</li> </ul>	<ul> <li>Create and write reflections of</li> </ul>	
		musical choices and identify	the planning, creating, and	Drawing on feedback from
	Editing Audio Regiions	how these connect to the	performing process, assessing	teachers and peers, develop
		development of the larger	levels of musical literacy with	and implement strategies
	Smart Controls	musical work.	the elements of music and	to improve and refine the
		<ul> <li>Work with peers to create</li> </ul>	reading/writing music, with the	aspects of draft compositions
	Mixing and Mastering	a musical plan and create larger	use of the digital tool or	and improvisations.
		works using digital tools or	instrument.	
		instruments.		Standard: MU:Pr4.I.T.la
		<ul> <li>Develop a visual plan</li> </ul>	<ul> <li>Create and articulate (either</li> </ul>	Develop and explain the
		with icons and verbal	verbally or written) overall	criteria used for selecting a
		descriptions, using peers,	intention, purpose, or mood of a	varied repertoire of music
		audience members, and	composition.	based on interest,
		instructors as a guide.		understanding of the
				performer's technical and
		Performing		technological skill.
		Perform and share music with a digital		
		instrument, sharing personal interests		Standard: MU:Re7.1.T.la
		and knowledge of the instrument.		Cite reasons for choosing
		<ul> <li>Perform and share a digital work and</li> </ul>		the elements of music.
		share the process through an artist		digital and electronic
		statement, sharing personal interests,		aspects, and connections to
		knowledge, and feelings of process		interest or purpose
		through the completion of the work.		
		Perform a musical work and share the		
		technical skills needed to play, record,		
		or create the musical piece.		
		<ul> <li>Using predetermined guidelines, share</li> </ul>		
		digital platform		
		a digital platform.		1

## Appendix B GarageBand Unit Plan

Unit Name: Introduction to GarageBand

**Unit Description:** In order for students to generate ideas and compositions digitally students need to navigate, understand and operate GarageBand. Students will be introduced to the basic functionality of GarageBand software and it's uses.

Length: 50 minute classes M-F 5 Week Unit

Grade Level: 9-1	2
Content Standards	MU:Cr1.1.T.la: Generate melodic rhythmic, and harmonic ideas for compositions and improvisations using digital tools.
	MU:Cr2.1.T.la: Select melodic and rhythmic ideas to develop into a larger work using digital tools and recourses.
Learning Objective	To use GarageBand a Digital Audio Workstation (DAW) to create music projects. Students will learn the tools, functions, settings to operate Garage Band. Students will learn hot they can create original material using prerecorded media. Students will learn how to create song arrangements.
Enduring Understandings	The creative ideas, concepts, and feelings that influence musicians work emerge from a variety of sources.
	Musicians' creative choices are influenced by their expertise, context, and expressive intent.
Essential Questions	How do musicians generate creative ideas? How do musicians make creative decisions?
Content	What is GarageBand? GarageBand Basics GarageBand Preferences Keyboard Shortcuts Using Prerecorded Media and Creating Song Arrangements Analyzing and editing created projects Completing a prerecorded media/arrangement project
Skills What students will be able to do.	How to navigate and operate GarageBand. How to adjust settings and preferences for particular projects. How to make changes to Audio/MIDI for particular projects and hardware setup. Use prerecorded media (selection, importing and editing) to create a project Use arrangement tools to help structure a project.

Knowledge What students will know.	How to startup GarageBand. How to prepare all elements to begin a prerecorded media project. How to analyze and edit a prerecorded or arrangement project. Sharing a completed prerecorded media/arrangement project
Assessments (D) Diagnostic (F) Formative (S) Summative	<ul> <li>Diagnostic (Pre-Assessment):</li> <li>Survey individual student knowledge of electronic music and music use of music technology.</li> <li>Formative Assessments:</li> <li>As a group get the students to explain how many steps there are to make a composition in GarageBand using loops. In addition, while listening to a piece of original music composed by a student, ask the students how many separate musical patterns they can hear.</li> <li>Summative Performance Assessment:</li> <li>GarageBand final project. Students will work in small groups to create a composition using prerecorded media.</li> </ul>
Texts/ Resources	Texts: Teaching Music with Technology An Introduction to Music Technology, Second edition by Hosken The Recording Engineer's Handbook, by Owsinski Your Sound Onstage, Emile D. Menasche Online Resources: http://theproaudiofiles.com/ http://theproaudiofiles.com/ http://musiced.presonus.com/learning-center/music-creation https://www.apple.com/support/mac-apps/garageband/

Learning	Daily Activities	Strategies for Varied
Activities	To Teach Content	Learner Profiles
	Daily lessons will consist of:	
	I Do, We Do, You Do	
	Think, Pair, Share	
	Projects/Assignments	
	Class Discussion	
	Teaching Content	
	Week 1:	
	Students will be introduced to Garage Band	Examples of Media will be played for the class.
	Kitchen Sink Activity- Opening exploratory	Students will have a list of
	assignment.	additional videos available on
	students will be able to explore all aspects of the	teachertube.com
	GarageBand in groups of two.	Students can work in small
		groups for additional support.
	Students will Think, Pair, Share their discoveries of GarageBand uses.	
	Class discussion	
	What are your first impressions of the	
	GarageBand layout? Do you find the different	
	setting dropdown menus approachable?	
	Do you think GarageBand is easy and intuitive	
	or do you find it has a steep learning curve?	
	Discussion 2. Discussion on using prerecorded material.	
	Supply historical examples, for example: Hip-	
	hop or R&B songs.	
	West 2	
	week 2 Introduction to Loops	
	Introduce the students to the basic functionality of the	
	GarageBand software. (Specifically how to start a new	
	also be introduced the concepts of meter, beats per minute,	
	time signature, and musical patterns. By the end of the	
	into a project to create a simple composition of their own	
	as well as be able to change the tempo and time signature	
	of a song. Furthermore, students will know the basics of the GarageBand software.	Students who have had
	une Suagezana sontrate.	Students who have had

<ol> <li>Begin by showing the students how to open GarageBand and create a new song. This is where the students will be shown how to change the tempo of the song, the key signature, and beats per minute.</li> <li>Explain the different functions of the software using the projector getting the students to follow along with their own laptops.</li> <li>Familiarize the students with loop browser functionality of the software. Show the students how loops can be repeated and layered to create a song of their very own. In groups, students will then get a chance to play around with the built-in looping function of the software building their own original compositions.</li> <li>Once they have completed their songs the students can export their songs into iTunes.</li> <li>Have the class share their songs with each other making sure that the kids are paying attention to patterns that were used.</li> <li>Have the students write a reflection on how they used GarageBand to create musical patterns</li> </ol>	Experience using the software or have grasped the concepts quickly can help those students who are having difficulty. Those students who grasped th basic loop function of the software can begin to use the more advanced loop functions within the software.
Week 3 Software Instruments	
<ul> <li>Introduce the students to the basic functionality of GarageBand's virtual instruments and rudimentary midi triggering to create compositions of their own. At the end of lesson two, students will be able to insert one of the many virtual instruments into a project, and be able to trigger that instrument using the virtual keyboard using midi protocol.</li> <li>1. Teacher will begin with a demonstration of the different types of software instruments and their capabilities.</li> <li>2. Students will have an opportunity to bring up their compositions from the precious lesson.</li> <li>2. Have the students bring up their compositions from the previous lesson.</li> <li>3. Get them to think about different instruments that would be appropriate for their particular piece.</li> <li>4. Have the students add virtual instruments to their original compositions from the previous lesson.</li> <li>5. Have the students edit their midi performances to their liking.</li> <li>6. Have the students share their work with the rest of</li> </ul>	Students who are excelling can help students who are having difficulties. In addition, students who play an instrument can help those students who would like additional instruments to be used in their composition. Introduce those students who are excelling to the many built in effects that can be applied to recorded tracks or loop tracks.

the class explaining their reasoning for using specific instruments. Week 4 Recording Sounds and Instruments Introduce the students to the audio recording functionality of GarageBand. By the end of this lesson students will be able to record original source material (voice, live instruments, sound effects) using the built-in microphone on their computers to create an original composition or piece. Students will be learning how to work with someone in a collaborative way using cooperation and appropriate communication skills. 1. Give the students a demonstration of the recording capabilities of the software. 2. In groups have the kids think/pair/share ideas of sounds and or instruments that they could record that would suit their composition. 3. Have the students airrange these newly recorded tracks to fit into their arrangements. 5. In a group have the students share their newly recorded material with the class	Students who have grasped the basics of the software can assist those who need help Students can try to make their own loops from source material using the loop editor. This can include recording original sounds (e.g. xylophone or beat box) or editing a pre-existing loop using effects and other editing.
<ul> <li>Week 5 Mixing your own song</li> <li>Tie in all of the skills that the students have learned so far using GarageBand software. By the end of this lesson, students will be able to compose a simple composition using GarageBand and all of its main features. The criteria for this lesson is for the students use the loop browser, virtual instruments, and an audio recording to finish their music compositions.</li> <li>1. Get the students to open their songs that they are working on.</li> <li>2. Introduce them to the concept of setting levels for their song (mixing) and audio effects.</li> <li>3. Give the students time to finish their compositions.</li> <li>4. Once their songs are completed students are to export their songs into iTunes.</li> <li>5. As a group the students will listen to each groups composition.</li> <li>6. Students will have time to give comments on each piece.</li> </ul>	

36

Appendix C Syllabus Example: MED 110 Technology in Music Education 1 \_ Fall 2015

## MED 110 Technology in Music Education I – Fall 2015

Instructor

Tuesday - Thursday, 8:00- 8:50(A) or 9:00 - 9:50(B) Office hours daily by appointment

## SYLLABUS

This Syllabus is subject to change upon notification to the students in a regular class session.

## Course Description

Technology in Music Education I develops two major areas of technology that are relevant to the life and work of music teachers: 1) Administrative and Personal Productivity; 2) Foundations in digital audio and MIDI. Throughout the course, various aspects of these topics will be introduced and developed. The focus of the course is on developing content knowledge and hands-on skill.

As stated in the College Catalog, this course explores ways that computer technology can be used to support music teaching and learning. Candidates may create electronic portfolios, websites, produce and edit music, and create and share different types of documents. Project-based learning is a primary focus of this course.

## Course Learning Objectives

## Students should learn and be able to demonstrate:

- □ Understand the tools and protocols for using computer technology to communicate, create and share information in an academic environment.
- □ Knowledge of components and practices utilized in basic stereo recording.
- □ Understanding of various pieces of equipment and terminology employed in recording.
- □ The foundations of MIDI technology and their applications within a Digital Audio

Workstation.

□ Use of computer based Digital Audio Workstations to create and manipulate sound.

Illinois State Board of Education (ISBE) Standards Addressed MUSIC

## NATIONAL COALITION FOR CORE ARTS STANDARDS FOR MUSIC

## TECHNOLOGY

- □ **Standard 1:** The competent music educator possesses knowledge and skills in the use of the basic vocabulary of music.
- Standard 2: The competent music teacher understands the processes and is able to apply the knowledge and skills necessary to create and perform music.

## PROFESSIONAL TEACHING STANDARDS

- □ Standard 2: Content Area and Pedagogical Knowledge The competent teacher has in-depth understanding of content area knowledge that includes central concepts, methods of inquiry, structures of the disciplines, and content area literacy. The teacher creates meaningful learning experiences for each student based upon interactions among content area and pedagogical knowledge, and evidence-based practice.
- □ Standard 3: Planning for Differentiated Instruction The competent teacher plans and designs instruction based on content area knowledge, diverse student characteristics, student performance data, curriculum goals, and the community context. The teacher plans for ongoing student growth and achievement.
- □ Standard 5:Instructional Delivery The competent teacher differentiates instruction by using a variety of strategies that support critical and creative thinking, problem-solving, and continuous growth and learning. This teacher understands that the classroom is a dynamic environment requiring ongoing modification of instruction to enhance learning for each student.
- Standard 8: Collaborative Relationships The competent teacher builds and maintains collaborative relationships to foster cognitive, linguistic, physical, and social and emotional development. This teacher works as a team member with professional colleagues, students, parents or guardians, and community members.

## LANGUAGE ARTS STANDARDS FOR ALL ILLINOIS TEACHERS

• **Standard 2** – All teachers should model effective reading, writing, speaking, and listening skills during their direct and indirect instructional activities. The most important communication in the classroom is the teacher, who should model English language arts skills.

## TECHNOLOGY STANDARDS FOR ALL TEACHERS

- Standard 1: Basic Computer/Technology Operations and Concepts
  - The competent teacher will use computer systems to run software; to success, generate, and manipulate data; and to publish results. He or she will also evaluate performances of hardware and software components of computer systems and apply basic trouble-shooting strategies as needed
- Standard 2: Personal and Professional Use of Technology
  - The competent teacher will apply tools for enhancing personal professional growth and productivity; will use technology in communicating, collaborating, conducting research, and solving problems

#### NATIONAL COALITION FOR CORE ARTS STANDARDS FOR MUSIC

## TECHNOLOGY

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and will promote equitable, ethical, and legal use of computer/technology resources

38

- Standard 3: Application of Technology in Instruction
  - The competent teacher will apply learning technologies that support instruction in his or her grade level and subject areas. He or she must plan and deliver instructional units that integrate a variety of software, applications, and learning tools. Lessons developed must reflect effective grouping and assessment strategies for diverse populations

## • Standard 4: Social, Ethical, and Human Issues

The competent teacher will apply concepts and skills in making decisions concerning the social, ethical, and human issues related to computing and technology. The competent teacher will understand the changes in information technologies, their effects on workplace and society, their potential to address life- long learning and workplace needs, and the consequences of misuse

## • Standard 5: Productivity Tools

The competent teacher will integrate advanced features of technologybased productivity tools to support instruction, extend communication outside the classroom, enhance classroom management, perform administration routines effectively, and become more productive in daily tasks

## • Standard 7: Research, Problem Solving, and Product Development

• The competent teacher will use computers and other technologies in research, problem-solving, and product development. The competent teacher will appropriately use a variety of media, presentation, and authoring packages; and participate in team and collaborative projects that require critical analysis and evaluations; and present products developed –

## • Standard 8: Information Literacy Skills

• The competent teacher will develop information literacy skills to be able to access, evaluate, and use information to improve teaching and learning.

## The College of Music Candidate Outcomes Addressed

The outcomes that the College strives to develop in its teacher candidates were derived from the institution's Conceptual Framework and are expressed in its core dispositions. This course addresses the following Candidate Outcomes:

## 1. A high level of musicianship

□ Studies a diverse and comprehensive music curriculum

## NATIONAL COALITION FOR CORE ARTS STANDARDS FOR MUSIC

## TECHNOLOGY

#### Course Calendar (subject to change)

- □ Accumulates extensive performance and pedagogical experience in all phases of music education.
- Develops the ability to think and speak intelligently about music.

## 3. Skill in the process of teaching

- □ Develops an understanding of the national and state standards for music, technology, language arts, and professional teaching.
- Becomes familiar with appropriate assessment tools and strategies.

## 4. Self-discipline and persistence

- □ Demonstrates the ability to organize and plan successfully for both short-term and long- term goals.
- $\Box$  Persists in following a task to completion.
- □ Attends and participates in classes and rehearsals regularly.

## 5. Interpersonal and intrapersonal skills

• Engages in honest self-evaluation and seeks feedback from colleagues and professionals.

## 6. Good citizenship and personal integrity

• Acquires through reflection and demonstrates through action an understanding of honesty, trustworthiness, and personal integrity.

## 8. Professionalism in action, word and appearance

• Acknowledges and seeks to understand different approaches and points of view.

## Grades

Grades will be calculated from an average of the four unit tests and attendance/participation, weighted as follows:

- Quizzes, Vocabulary, & Assignments 20%
- Final Project 30%
- Attendance– 30%
- Participation 20%

## Grading Scale

- A = 90-100%
- B = 80-89%
- C = 70-79%
- D = 60-69%
- F = 59% & below

## Instructional Materials

40

- □ Students are required to bring their iPad to each class session.
- □ Headphones are required for class. Students must bring their own set to each class session. High quality "over the ear" headphones are recommended. Earbuds are acceptable, although not recommended for working with digital audio.
- □ Handouts and worksheets may be distributed electronically throughout the course. Students are encouraged to keep hard copies in a folder or notebook for reference.
- □ A personal storage device is strongly recommended for saving files and electronic media.

# NOTE: AN ADDITIONAL WRITING ASSIGNMENT WILL ALSO BE ASSIGNED

In addition:

- Classroom technology and resources will be utilized throughout the course.
   Examples may include the SMART Board, overhead/document camera, LCD projector, tablets and smart phones, and other instructional resources that may be useful.
- □ Students are encouraged to share technology tools that they have found useful in their musical study.
- □ Classes will be focused on practice exercises and activities. Assigned reading should be done in advance of class.

#### Attendance Policy

Any student fully absent for more than 20% of regular class sessions should not expect to pass the class. Attendance is taken promptly at the beginning of each class session. Students are considered late to class if arriving at any point after attendance has been taken.

Students must notify **both instructors** of any absences personally, i.e. Phone message/email/personal conversation. Sending word through another student, or via text message will not be accepted.

#### Candidate Conduct

An important part of the College of Music's Conceptual Framework and Candidate Dispositions and Outcomes is the focus on professionalism and character. Specific descriptors include participation as well as attendance, flexibility in the face of changing circumstances and institutional needs, the commitment to continual personal development, self-reflection and growth, respect for the academic community and the individuals and resources of that community, and behavior, speech and dress that is appropriate and respectful in the educational environment. Failure to observe standards of professional

#### NATIONAL COALITION FOR CORE ARTS STANDARDS FOR MUSIC

#### TECHNOLOGY

# behavior may result in referral to the Standards Committee and/or the appropriate dean. Consistent concerns in this area will have an impact on successful completion of the program.

#### MIDI Lab Policies

Always respect the right of others to a clean workspace, ample bandwidth, and a quiet lab environment without visual or aural distraction. This means;

- □ NO Internet cruising during class.
- □ Lab computers (in addition to all others throughout the school) are available throughout the school day for students to use for academic purposes. Piracy, gaming, social networking, and viewing sites of questionable content may result in disciplinary procedures.
- □ There is a limited amount of bandwidth available within the school. Internet transfer of large files is not supported or tolerated.
- □ No eating or drinking in the lab. Place drinks on a stand outside the door if you want to have a drink handy.
- □ Quiet study and listening only. Headphones are a necessity.
- □ Clean up after yourself: chair pushed in, papers removed.
- □ Respect privacy with respect to all items on computer screen.
- □ ALWAYS sign out of your e-mail and other private sites.
- □ Report violations immediately.

## Health and Safety

College of Music is committed to providing a safe and healthy environment for study and work. Basic information regarding the maintenance of health and safety within the contexts of

practice, performance, teaching and listening is provided throughout the academic year. Health and safety information specific to this course will be addressed. It is the responsibility of each individual musician to take an active role in making informed decisions to help maintain their own health and safety.

While working with computers it is important that students are aware of posture and hand position with respect to their workstation. Students should adjust their chairs, screens, keyboards, and other peripheral equipment to be ergonomically comfortable. Students should also avoid working with audio at increased decibel levels for prolonged periods of time. Students are encouraged to use hand sanitizer both before and after using public computers throughout .

## Academic Honesty

Candidates are expected to maintain the highest standards of integrity in their academic work. Failure to do so will jeopardize a candidate's success in the program. Examples of academic dishonesty include:

□ Presenting another's words, music, or concepts as your own by failing to acknowledge or properly cite the source.

#### NATIONAL COALITION FOR CORE ARTS STANDARDS FOR MUSIC

#### TECHNOLOGY

- □ Communicating or receiving answers or information to/from another in a testing situation.
- □ Consulting notes or any other source of answers/information in a testing situation, unless the instructor authorizes such access.
- □ Making available or accessing tests or quizzes from current or previous classes unless explicitly authorized by the instructor.
- □ Bringing, by any means, answers or information into a testing situation except as explicitly authorized by the instructor.
- Collaborating or turning in jointly produced work on any test or assignment that is

intended to reflect individual effort.

#### <u>Plagiarism</u>

Plagiarism means taking someone else's words, ideas, data or work and presenting them as your own. This could mean an exact duplication of someone else's work without proper citation of the source, or it could mean you present it with only small changes and do not cite the source. Plagiarism can occur in art, music, literature, or technology – really in any area of intellectual work.

All work submitted should be properly credited to the original source of the information or idea whether the source is a book, Internet site, article, or any other medium. In written work, quotation marks or block indentations show direct quotations and the source must be cited. If information that is not common knowledge is paraphrased or summarized from a source, that source (including websites) must be cited. Failure to do so in academic assignments represents cheating and carries the appropriate penalties.

Copyright compliance is the goal of the college. Information to help with clarification of what constitutes fair use of copyrighted material, including photocopying, is on permanent reserve in the library.

No candidate should expect to receive a passing grade on any test or assignment that reflects dishonesty or academic irregularity. Cheating in any form may result in failure of the class and academic expulsion.

#### **Disability Statement**

If a student has a disability which might interfere with that student's ability to function in this course it is the responsibility of that student to notify the instructor at the beginning of the course.

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	10/20	MID	l basics					
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Appendix D

Draft revision 1/27/2016

44

#### **VCM Lesson Plan Template**

Date Lesson Class

Central Focus

"The central focus is an understanding that you want your students to develop in the learning segment. It is a description of the important identifiable theme, or topic within the curriculum that is the purpose of the instructional learning segment." (Making Good Choices, 2014, p. 10,)



Instructional Resources and Materials

Post-teaching Reflection

## TECHNOLOGY

46

## Appendix E Interviews

## Interviewee 1 (band director) Naperville North High School Naperville, IL

1. Define the term "Music Technology"

Any aid that can be used to assist, record, consume, or create music that is outside of typical acoustical instruments or voices can be defined as related to music technology.

2. Does your school have a Music Technology Class or Club?

We have a digital music club that is sponsored by a non-music teacher. We don't have an official music technology class, but we do cover music technology elements in our music appreciation class and in regular level and AP music theory.

3. How technology do you use in your classroom? Projectors, Canvas/Blackboard sites, You Tube, recordings, PDFs, chromebooks, recording devices, mp3 players.

4a. Do you have students interested in the recording arts, sound production, live sound, sound for film, or any other field that incorporates music technology? Yes – approximately five current students that are enrolled in my performance based classes.

5. What outlets does your school provide to support this students interest? Music technology club; our music appreciation class also takes field trips to recording studios.

6. What is your experience with Music Technology? I have always had an interest in music technology, and am fluent with notation software and basic to intermediate recording technology. I also am experienced with looping software, and digital instruments.

7. What is your experience with recording and live sound?

I am able to record and teach recording at the basic to intermediate level. I record, edit, and produce my own podcast using basic to intermediate materials such as a mixer, recording software, and USB microphones.

## TECHNOLOGY

8. How often do you use technology in your classroom? What percent is everyday technology such as: computers, projector and sound systems?

We use technology daily, as our school is one-to-one (meaning that every student has a device; chrome books). My colleague has designed a method book for use in the classroom for band, and the students are able to access this document on the chrome books. We use technology approximately 10% of the time.

9. Would you like to use music technology more and if so how would you implement those technologies?

I think we do an ample job of music technology implementation in the classroom.

## Interviewee 2 (adjunct faculty) Online

How do you define music technology?

Technology refers to the most recently invented or created state-of-the-art devices. Music Technology is anything that applies scientific knowledge to the art. Therefore, it covers a wide range of devices, software and applications.

What is your experience with music technology?

I have been using technology in my teaching since 1982. I have written 14 books on various topics in the world of music and education dealing with technology.

What is your experience with recorded and live sound?

I have been recording my performing ensembles since I started teaching in 1977, first using reel-to-reel tape, cassette, and now digitally.

From your experience how has music technology changed over the years? Technology continues to evolve. For the longest time it was tied directly to computers. Now, that has expanded to tablets and smartphones. It continues to put more and more tools in the hands of teachers and students.

What impact can the use of music technology have on a school music program? I look at this from both the teacher and student perspective. The teacher can use technology to enhance teaching in many ways. SmartBoards, software such as SmartMusic and iReal Pro, and many, many more, can enhance teaching in the hands of the teacher.

For students, technology provides the "musical crayons" as I like to say. With technology, they can experience music in new and exciting ways.

My favorite quote on this is by Dr. Peter Webster. I am in agreement with his assessment:

"So, is music technology effective and is it worth the trouble? On balance and on a very basic level, the answer to this question is yes. Does music technology hold the key for

#### NATIONAL COALITION FOR CORE ARTS STANDARDS FOR MUSIC

#### TECHNOLOGY

solving all our music teaching problems? Of course not. Are there abuses in its use? Absolutely. Does it always improve learning? No, much depends on the context especially the teacher and its use instructionally. Is it worth the trouble to keep studying its role in music teaching and learning? Unconditionally, yes." from: The New Handbook of Research on Music Teacher and Learning; Oxford Press http://www.amazon.com/Handbook-Research-Music-Teaching-Learning/dp/0195138848

What impact can a music technology course have on a school music program? A tremendous effect. There are some keys and that includes providing sufficient tech gear and a well-trained music educator. But it can make a huge difference. In my former district, Haverford, we doubled the number of students electing music courses (went from 300 to 600 from a total enrollment of 1200 students). With a full-time music technology teacher, students from throughout the school are electing to take music courses. See my handout from my conference presentation on this topic: [Links redacted to omit personal information.]

[Links reducted to onne personal mormation.]

What factors prevent teachers from utilizing music technology to it's fullest potential?

- Music teachers must be trained in the use of technology.
- They must be provided with the necessary hardware, software and apps.
- They must have an open mind to learning and using new ideas in their teaching.

Does a music technology class have the potential to interest non-musical students(nonband, choir, or orchestra)?

Absolutely! It has been used in this regard at Haverford and many other school districts. Check out the site:

[Link redacted to omit personal information.]

What do you think the impact is for a non-musical student in a music technology course? First, I believe all students are musical. I would word this as the "non-performer," rather than non-musical.

I always like to look at the jobs that non-performers hold in the world of music. In many ways these are more common compared to the world of performing: sound engineers, software designers, creating music for video games, and the like. The popularity is evidences in colleges offering the Music Business degree, and much of this is tied to music technology.

A non-performer can experience music composition, performance, and much more using technology.

Where do you think music technology will be in the next 5-10 years? Since the advent of MIDI in 1983 music technology has advanced at a torrid pace. I suspect that will continue. The cost of a music tech lab at a high school was in the \$20-\$30K range in the 1990s. Now that same lab can be created for a fraction of that cost using iPads and keyboards. That trend will continue.

TECHNOLOGY

49

Interviewee 3 (band director) College Prep Chicago, IL

1. At what age did you first record music?

The first time I ever recorded any music was my junior year of high school, so that would put me at about 16 years old.

2. Were you writing songs before you could play guitar?

No, I was not writing songs before I could play. Not any real ones at least. I learned as many songs as I could and then eventually I started writing them almost by accident.

3. What impact does recording have on you as a musician?

Recording has a huge impact on me as a musician because it allows me to hear concepts to their full potential, often for the first time. I hear a ton of stuff in my head that sometimes translates to what my band can perform live, but often we just don't have the means to execute all of the weird stuff that is flying through my brain. Recording offers a chance to experiment with extra layers and to envision an even more complete version of the song that wouldn't be possible elsewhere.

4. What impact does recording have on your teaching?

On my teaching, recording might not have had as much of an influence. I know that it has at least earned me some street credit with my students to be able to show them that I have professional quality recordings of my own music. Also, it has sort of helped me to mentally conceptualize pieces for the first time when it comes to conducting.

5. What impact does being a creative musician have on your teaching?

I feel like being a creative musician is an extremely valuable trait to have as a teacher. My administration will often rave about how good the fine arts department is at teaching and we all look at each other like "We are just doing what normal artists would do and being critical about it." I feel that being a creative person in general helps to improvise in situations you don't expect, which is another invaluable ability as a teacher. It also just makes you seem cool, which the kids dig.

6. What has been your experience recording?

My experiences recording have been broad. The first time I recorded anything was on a rigged up mixing board in my high school band room. That was a blast because it was the first time I ever got to have that much control over the creative process that I was seeking. Later on in life, I've gotten to record in some really great places like Gravity Studios, Electrical Audio, Wall2Wall, and Minbal Studios. Each place has had it's pros and cons compared to the others, but all experiences for me were positive. It also seems

#### NATIONAL COALITION FOR CORE ARTS STANDARDS FOR MUSIC

#### TECHNOLOGY

to help a lot when you are working with an engineer who you can tell kind of gets what you are going for (or at least likes your music).

7. What were your experiences recording at Electrical Audio, Wall2 Wall and Mixing at Minbal?

Electrical Audio was my first time ever recording to tape. That was hard as hell and our song choice for that session made it even harder. I love the results we got as far as the feel of the track and the earth you can sense between your toes when you listen to it, but damn it was a test of patience. Wall2Wall was a straight blast not only because we were now in a digital studio, but we also chose a song that was 40% the length of the tape session and it was also one that we could all play in our sleep. I also preferred Wall2Wall's layout of the room that we were in. I've heard (but not seen) that had we been in Studio A of Electrical, I may be singing a different tune, but was it was, Wall2Wall provided us a much more cohesive setting to do live takes like we were doing. Mixing at Minbal was cool. I didn't get to spend too much time in there, but I liked the cavernous feel of this dark little building that was all about sound and nothing about looks. It sounded good in there.

8. As a music educator do you think that the performing arts provide an opportunity for all students or do you think that there is a void?

I think this is a loaded question because I feel it's obvious that the opportunity provided by "performing arts" is universal. However, I feel that public schools deny most students that opportunity as it is today in America. The arts are still offering the opportunity, bureaucrats are just revoking it.

9. Would an electronic music or music technology course have an impact on your school?

Yes it definitely would. I have many students who would value that curriculum over the traditional band, choir, piano, etc.

10. Would this type of course interest your students? YES!

11. Do you think a electronic music/music technology course would have an impact on students? Why and How?

Students today are overloaded with stimuli. So much so that they have to actively sort through choices of songs and albums and artists to find stuff that they actually like versus just submitting to whatever is playing on the radio. I've found that when I provide my students the opportunity to compose, they are all about these projects. I think it's because kids are getting pickier and pickier and composing allows them to be as picky as they want because it's their own music. An electronic music curriculum is one of the only music curricula that I can think of that allows students who are new to music to successfully compose on day 1 and to refine that skill over time.

12. How do you utilize technology in your classroom?

NATIONAL COALITION FOR CORE ARTS STANDARDS FOR MUSIC

#### TECHNOLOGY

I barely utilize tech at this point beyond using the computer to look up tabs, using phones to tune guitars, and using my phone to record class performances.

13. When incorporating technology into your class what preparation do you make? N/A

#### Interviewee 4 (freelance recording engineer and producer) College Chicago, IL

1. Early on in our meetings we discussed the idea that being an engineer or producer did not require being a musician. Can you expand on this topic? Many of my students at the high school level have had very little exposure to formal music training it any experience playing an instrument. Many of them want to be engineers or producers. What is your philosophy on this?

There are a number of successful recording engineers historically who were not musicians, or, at least, not "musicians". I suppose some of them may have dabbled, but they are known for not being musicians. It's not uncommon for engineers to have dabbled in both but pursued engineering; myself included. I have been both on stage and in the studio as a musician. The benefit to having some musical experience is many-fold. First, it allows you to understand that viewpoint and experience, which changes the way you interact with the musicians. Second, it improves your musical understanding; writing, arrangements, what to look and listen for, and your understanding of the instruments and playing techniques. Being a "fan" of music can provide much of this - but experiencing it firsthand is clearly a different thing.

The majority of producers were either musicians or engineers - professionally - to begin with. Most have musical training. A producer - in the first meaning of the word needs to oversee and be involved with the entire process of record-making; any weaknesses in understanding music, musicians or sound will result in weaknesses in their production. (This differs from the second definition of "producer", in hip-hop and EDM circles referring to "beat-makers" or programmers. These "producers" are in reality composers and/or performers, the word "producer" in these cases is misused.)

2. What qualities do you think an engineer should possess?

Patience. Flexibility. Attention to detail. Diplomacy. Communication. An understanding of the goals and possibilities at hand. Trained ears, sonically and musically. The ability to put full attention and effort into achieving the aesthetic and artistic goals of the producer and/or artist. Superior technical knowledge and skill. Superior people skills. Depth of sonic aesthetic

3. Thinking back to the beginning of your recording experience to now what were some experiences that made a difference to you career?

Luckily, learning from an "old-school" engineer who understood - 100% - that it's

NATIONAL COALITION FOR CORE ARTS STANDARDS FOR MUSIC

#### TECHNOLOGY

the producer's and artists' session, not the engineer's. We make their dreams come true with our technical skills and knowledge.

We translate their aesthetic and artistic requests into physical choices; mic choice, mic placement, room setup, EQ, compression, panning, level balance, effects, etc. Early on, I worked with a number of older professional musicians who allowed me to inhabit the "recording engineer" role in its original and "proper" context. (As opposed to musicians my own age and younger, who looked to me more often for guidance, feedback, critique - things that are more properly the producer's job. I also, on a few ocassions, saw other engineers cross that line, to the detriment of the recording process.

4. What is your advice to someone who is thinking about getting a degree in the "recording arts" or someone who wants to just discover/learn on their own?

5. What have you learned from the musicians you have recorded that has helped your craft?

I learn something from everyone I work with. If you don't, you're not doing it right. It may be something small, it may be "what not to do", but always something. You're always paying attention. Overall, what I've learned over 20-some years, is that regardless of musical "styles" and "genres", each artist is different and unique. And so, each recording process should be geared towards the needs and goals of that artist (or producer). Even though generalizations are often "close", it's easy to allow those assumptions to adversely affect your work with a specific project. ("jazz albums" are recorded *this way*, so the engineer unintentionally pushes certain setups and techniques that, under examination, are not appropriate in this instance.) A list of specific things would number in the thousands...

6. As an educator at Columbia what impact does recording have on your teaching and vise versa?

Essentially, I teach what I do - though in a simplified and limited manner appropriate for the level of student and amount of time available. Over the 15 years I've been teaching one or two classes, it has pushed me to clarify or justify certain things that I do, since the first thing students often do (or *should* do) after hearing something is ask "why?". As an "engineer" - if we use the word more literally - we should always be able to answer "why" for everything we do. That is, really, the definition of "engineering". This is a technical job first and foremost.

So, if there was something I was doing - maybe that I picked up from one of my mentors, or read about somewhere - I end up questioning that approach if I can't defend or justify it logically.

(This is appropriate for "engineering" - but it's certainly suggestive of one core problem with "teaching art"! Sometimes in music, one should not ask - or answer - "why?')

53

Appendix I Biographies

[Four detailed biographies of interview subjects were redacted to omit personal

information.]

Appendix G

Pictures from Electrical Audio Follow link to see all pictures from this session. [Picture and link redacted to omit personal information.]

Appendix H

Link to short documentary about this project. [Link redacted to omit personal information.]

## Appendix I

56

Links to songs recorded for this project Follow this link to hear recordings of *All of You Love* and *Blinkers*. [Link redacted to omit personal information.]

Appendix J

58

NAfME 2014 Music Standards (Music Technology)

http://www.nafme.org/wp-content/files/2014/11/2014-Music-Standards-Technology-Strand.pdf