LIBERTY UNIVERSITY

SCHOOL OF MUSIC

THE NEED AND VALUE OF ADDING A GIFTED MUSIC CURRICULUM TO EDUCATION USING MUSIC TECHNOLOGY

By

Haven Clippinger

A MASTER'S THESIS PRESENTED IN PARTIAL FULFILLMENT

OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS IN MUSIC EDUCATION

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Abstract

Research in music education has increased drastically since its emergence in the 20th century. Philosophers developed detailed music education philosophies, and music education changed in American education. In addition, the 20th century also brought an increased awareness of gifted students in the school system. Musical talent has been considered a gifted quality, yet there appears to be minimal research on gifted students in music classes. Initial research was conducted to examine literature on gifted music. This research serves to provide a greater link between music and gifted education by providing a music technology curriculum for gifted music students. This project attempts to discuss gifted testing specifically in music, while providing an example of implementation with the provided curriculum.

LIST OF ABBREVIATIONS

G&T- gifted and talented

STEM- science, technology, engineering, math

DAW- digital audio workstation

Contents

CHAPTER ONE: INTRODUCTION

Background

Music programs in public schools have existed since the 20th century. Philosophies of music education have emerged with the increase in research. During the 20th Century, gifted and talented students in the schools began to be recognized. Initially, "This common definition of gifted and talented was the first modern conception of the term proposed by educational researcher Lewis Terman in the 1920s."[1] The definition has broadened in inclusivity by researchers. Musically gifted and talented could have been observed; however, those gifted in music were not given special attention. If a student meets the criteria for gifted services, they likely do not receive services in any fine arts instruction. Gifted students deserve differentiated services in fine arts, and it should not be limited to core subjects. Music can be a great tool for gifted and talented students. In order to have a successful and differentiated music curriculum, the development and implementation of gifted differentiation in music programs is essential.

Statement of the Problem

It is common for music educators to feel excluded from educational studies or professional development opportunities. In the public school system, many music educators feel that the required professional development excludes music curriculum. Music education is often excluded in considering a gifted endorsement. Music educators may opt out of this opportunity, thinking it is irrelevant to their content. Some claimed that it's not useful to the music teacher, and they felt an endorsement would have been a waste of time. Going against this idea, the

[1] Joseph Michael Abramo and Mellissa Natale-Abramo, "Reexamining 'Gifted and Talented' in Music Education," *Music Educators Journal*, Vol. 106, Iss. 3, (2020): 39.

purpose of this study is to show that music has everything to do with gifted education by providing a detailed curriculum that incorporates a gifted focus in music technology.

Statement of the Purpose

Music and gifted education programs need to work together. Music educators have felt left out and forgotten for too long. In fact, music education could be more relevant to gifted programs than other disciplines, depending on the child. If there is a music class, and the teacher is spending time going over key signatures, some students will likely struggle, while others will understand the concept more easily. The gifted student may be bored because they already made the connection and understand the concepts. When a child is bored, they may act out and misbehave. This is true for other content areas, as well. A distinctive gifted music curriculum is necessary for the musically gifted children. The purpose for this study is to analyze the importance of gifted and talented education, and to provide a curriculum example for the music classroom.

Music education is valued in many public and private school districts. There are, however, many schools where music education is greatly disregarded, and in some schools, totally absent, especially in cities where poverty and/or crime are rampant. If students do not have the resources or funds to participate in music, they may not get involved, resulting in music programs that are not representative of the school. Fundraising can aid in this issue, but "as the proportion of students in need goes up, the less likely it is that parents have extra time and resources to do that work."[2] Despite the constant of music in every American's life, the value and influence of music is commonly misunderstood. This translates into public school music education. The design of an excellent gifted music curriculum could aid in the advocacy and

[2] Tina Beveridge, "Does Music Education Have a Poverty Problem?" National Association for Music Education, Vol. 40, Iss. 2, (July 2021), 11.

appreciation for adding a gifted music program in schools. While many see music as an "extracurricular activity," the implementation of criteria for music giftedness could aid in the increasing support of music in schools.

Significance of the Study

This study will focus on a new curriculum with a gifted implementation in a Music Technology course. This study should aid in advocacy for gifted and music programs. Although this specific curriculum does not specify a performance-based music class, a focus in gifted music technology could aid in a deeper music aptitude and result in a more inclusive music program. This research attempts to show how to bridge the gap between the gifted and music education. Documentation of the claims that music educators feel the lack of provision for the gifted and talented will appear in Chapter Two, Literature Review, with an analysis of gifted and talented in classrooms.

Research Questions

These research questions help create a direction for teaching and helpful tool for music educators to gain understanding of educating the gifted child in the music class. This curriculum aims to serve and aid music educators in educating gifted learners in their classrooms. This curriculum aims to advocate for more intentional and advanced music programs for gifted children. The research questions for this curriculum are as follows:

RQ1: In what ways could music educators benefit from specialized training in gifted music curriculum?

Music educators could benefit in a multitude of situations through a gifted music curriculum. There is little professional development on this topic, so music educators would gain insightful professional development. "Because academic giftedness is minimally discussed in

music education literature, coursework, professional development workshops, and textbooks on teaching children exceptionalities, information that focuses on recognizing, identifying, and meaningfully teaching gifted learners in the music classroom is beneficial and necessary."[3] This new professional development would help the music teacher effectively teach gifted students, and it would also help them teach all of the music classes more effectively.

RQ2: How could students benefit from gifted music courses?

A music course designed for gifted students would provide opportunities that students otherwise may not be available. In a selective music course, students would have the opportunity to build upon their own unique musical giftedness. In this curriculum, students are chosen based on existing musical abilities and teacher recommendations. This will allow for more differentiated instruction, which will help the students thrive. "The key to a differentiated classroom is that all students are regularly offered choices and are matched with tasks compatible with their individual learner profiles, educational needs, and academic levels of performance Differentiated classrooms are an instructional setting in which students are active learners."[4] The goal of this curriculum is developing meaning out of the material, rather than experiencing passive learning.

RQ3: What are the qualities of gifted and talented in music?

There is not an exact definition of gifted and talented in music, as each child expresses their abilities differently. The music educator, however, needs to be able to identify potential giftedness in all situations. Joseph Renzulli and Sally Reis developed ideas of gifted and talented

[3] Kimberly H. Councill and Lynn Fiedler, "Gifted 101: Unlocking The Mystery of Academically Gifted Education," *Music Educators Journal* 103, no. 4 (2017): pp. 48-56, https://doi.org/10.1177/0027432117697005.

[4] Ibid.

in above-average abilities, creative thinking, and task commitment.[5] These can manifest differently for different students. There may be some students who are obviously high-achieving and well-disciplined, where the giftedness is easier to determine. In other cases, some students may manifest in different social interactions. They may require more stimulation, and they may have shorter attention spans due to their creative and quick thinking.[6] "The results of these behaviors and traits and low self-esteem might lead to poor performance in school. Their daydreaming might cause them to miss important information. Their creativity and above-average intelligence might cause them to find assignments boring, and their difficulties with peers can create stress."[7] Their boredom may cause them to tune out or become disruptive.

Some "negative" traits that could show giftedness are daydreaming, bored and disruptive in class, impulsive, sensory seeking, asking questions at inappropriate times, overexcitement, and much more.[8] Due to the nature of classrooms, these potential gifted traits can be overlooked.

RQ4: How can educators implement gifted strategies in the music classroom?

The curriculum provides an example of implementing gifted strategies in the music classroom with a music technology course. The goal of the music technology curriculum is to provide a course designed with gifted strategies in each lesson; however, the educator should still assess and differentiate this curriculum based on the needs of the students. There may be a need for acceleration or differentiation on top of the provided coursework, but this is under the

[5] Joseph Michael Abramo and Mellissa Natale-Abramo, "Reexamining 'Gifted and Talented' in Music Education," *Music Educators Journal*, Vol. 106, Iss. 3, (2020): 39.

[6] Ibid., 40.

[7] Ibid., 40.

[8] Ibid., 41.

discretion of the educator. This curriculum is designed with the goal of catering to gifted learners by exploring an unfamiliar area of music technology and audio production.

Definition of Terms

Aptitude- Capacity for learning.[9]

Differentiation- tailored instruction to meet individual needs[10]

Summary

This research serves to provide an opportunity to bridge the gap between gifted students and their music education. Following the research, there will be a proposed music technology curriculum for gifted learners. The goal of this research is to advocate for both gifted and music learners. It is important to introduce students to multiple different types of music learning to increase their aptitude in music. This research will consist of documented claims of a need for gifted music, followed by solutions in Chapter 4, then the curriculum is the suggestion for implementing gifted music technology in the classroom.

[9] *Merriam-Webster.com Dictionary*, s.v. "aptitude," accessed February 4, 2022, https://www.merriam-webster.com/dictionary/aptitude.

[10] Carol Ann Tomlinson, "What Is Differentiated Instruction?," Reading Rockets (WETA, September 25, 2019), https://www.readingrockets.org/article/what-differentiated-instruction.

CHAPTER TWO: REVIEW OF LITERATURE

Identifying the Need for Gifted Music

In a gifted endorsement, it is not uncommon to hear about musical abilities. When learning the qualities of gifted students, strong music ability is often one behavior. Educators without a music degree may not necessarily understand music, but all educators should be able to identify music ability as gifted. Music educators are trained to notice music abilities and naturally notice those who are gifted, but many do not learn the importance of the addition of this in conjunction with the gifted and talented.

Joseph Michael Abramo and Melissa Natale-Abramo discussed giftedness in the music classroom. They were aware of the need to address gifted implications in music classrooms. Lewis Terman based giftedness on IQ test scores. Abramo and Natale-Abramo wrote, "Terman identified students who were well adjusted and successful in school. In other words, in some ways, students that Terman identified as G&T [Gifted and Talented] were prematurely adult."[11] Since then, the criteria for gifted education have been expanded, and the program is now more inclusive. Joseph Renzulli and Sally Reis "expanded the definition of gifted and talented beyond just scoring high on IQ scores. Instead of identifying G&T's essential traits, Renzulli and Reis focus on behaviors."[12] Above average abilities in one or multiple subjects, creative thinking and strong task commitment are all potential demonstrations of gifted and talented.[13] At the beginning of this article, the authors provided examples of two children in a band class. One student is very responsible and bright, while another student does not focus or participate, but

[11] Joseph Michael Abramo and Mellissa Natale-Abramo, "Reexamining 'Gifted and Talented' in Music Education," *Music Educators Journal*, Vol. 106, Iss. 3, (2020): 39.

[12] Ibid., 39.

[13] Ibid., 40.

clearly has a creative mind. Both students could likely be gifted, but they manifest in different ways. There are multiple manifestations of gifted, as each child is unique.

Stephen T. Schroth and Jason A. Helfer emphasized how the Department of Education is aware of the benefits of fine arts for gifted programs. Educators have known for decades that there is a correlation between giftedness and music involvement, yet few are trained in both areas.[14] They point out, "Few gifted education specialists are trained to recognize, encourage, and develop talents in music or the visual arts. Although gifted education specialists possess knowledge about differentiated gifted students in traditional subject matter, they are less ready to deal with students in more diverse talents, such as those necessary for participation in the arts."[15] Similarly, they emphasized that music educators often do not have training in gifted education. Since few are trained in both areas, Schroth and Helfer described how this left many unanswered questions.

Educator Perceptions of Gifted

When Scroth and Helfer asked teachers and administrators for their definitions of giftedness, they emphasized that educators often confuse social advantage of certain students with gifted abilities.[16] Perceptions based on personality traits affect who teachers recommend for the gifted program. Similarly, arts education also appears to be limited when educators often focus on creation and performance, ignoring that there are other aspects to music and art education. All students should be given opportunities to explore creativity and make connections in several capacities with music.

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[14] Stephen T. Schroth and Jason A. Helfer, "Educator Perceptions of Artistically Gifted Child: Degree of Alignment Between Beliefs of Music Specialists, Art Specialists, and Administrators," *Educational Research Quarterly*, Vol. 43, Iss. 3, (March 2020), 52-53.

[15] Ibid., 53.

[16] Ibid., 56.

These educators believed that gifted students should have gifted fine arts enrichment programs, and many believed that art and music were important for these gifted students. "Educators favored art and music services for children who possess a well-developed memory (over 68%), who demonstrate an intense interest in certain areas of study or academic work (over 90%), and those who use advanced thinking, processing, and problem-solving skills (nearly 94%)."[17] As noted above, these educators are often supportive of bridging music and the gifted program and providing services to these students in fine arts classrooms. They agreed that art and music were important for these students; however, there proved to be some contrasting evidence.

> Interestingly, a significant number of educators expressed little trepidation if certain students failed to receive instruction in the visual arts or music. There were some children who educators deemed 'less worthy' of art and music instruction. These included those who did not make good grades in the regular education classroom, those who are not well behaved, and children enrolled in grades below the third grade.[18]

This proved to be surprising, as this was not an inclusive mindset for music and gifted educators. Both categories of educators had a limited belief on who should be involved in gifted or music. Since children are unique, there is not a set of gifted qualities. There may be common behaviors that gifted children possess, but giftedness can manifest in different ways. Every child, with or without gifted qualities, deserves a chance for music and art. They deserve gifted services, along with a well-rounded education.

With a perception of giftedness being unrelated to music, some music educators deny that a gifted endorsement is relevant. The content, however, has potential for music relevancy. Acceleration is one common method used in schools allowing many students to better achieve

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[17] Stephen T. Schroth and Jason A. Helfer, "Educator Perceptions of Artistically Gifted Child: Degree of Alignment Between Beliefs of Music Specialists, Art Specialists, and Administrators," *Educational Research Quarterly*, Vol. 43, Iss. 3, (March 2020), 62.

[18] Ibid., 62-63.

their potential. “Acceleration can be accomplished in at least 20 different ways, including early entrance to kindergarten, curriculum compacting, grade-skipping, dual enrollment, mentoring, extracurricular programs, college-level classes in high school, and credit by examination.”[19] These are common practices, as many accelerated courses are offered to students today. High school students are provided many opportunities to take college-level courses or dual enrollment at a local college. Honors or gifted classes often have a compacted curriculum. This can be easily translated into music classes. An educator can teach a college-level music class, or they could create a compacted curriculum. Many schools teach an Advanced Placement Music Theory course, which could provide high schoolers with college credit. This particular class can benefit the gifted music student. In any music course, one could compact the curriculum. Although acceleration provides benefits, it also creates disadvantages. Children need social and emotional learning that comes with socializing with their age group. Acceleration could hinder socialization. Acceleration is a great method, but it should not be the only method.

While there is a need for gifted music curriculum, it is important to foster creativity and task commitment in schools. “The development of task commitment and creativity is accomplished when individuals find an area in which they desire and choose to develop these skills, usually when an interest is activated.”[20] Students should be encouraged in their passions and interests, and gifted music is one way to foster this creativity. When an educator recommends a child for gifted testing, a child will be assessed on their aptitude in multiple areas. If there’s an aptitude assessment for music, educators can better understand a child’s needs and creativity in music. With students who have a high aptitude in music, it is important to

[19] Jonathan A. Plucker, Anne N. Rinn, and Matthew C. Makel, *From Giftedness to Gifted Education: Reflecting Theory in Practice*, (Waco, TX, 2017), 2.

[20] Ibid., 26.

encourage and foster their creativity. Students need to be challenged and allowed to be creative. Students should be allowed to act on their interests. Plucker stated,

> We believe that students who experience the joys and challenges and intensities of creative productive work in elementary or secondary school, and indeed even in college, will be more likely to continue to pursue it in their adult lives.[21]

A gifted music curriculum would be beneficial in this way for those who are gifted in music and have a great interest in the area.

Technology in the Classroom

Ronald B. Thomas dedicated time researching a curriculum for gifted music students. He emphasized how the music education field is changing and evolving rather quickly, and there is a growth of involvement and participation in music in unique ways.

> This metamorphosis in music has not gone unnoticed in society outside professional music circles. These tools are so powerful and, in computer terms, 'friendly,' that persons from all walks of life who never thought of themselves as musicians are discovering that creating and making music is an exhilarating experience.[22]

Professional education will be the primary source for aptitude assessment, as knowledge and experience will help these educators identify all gifted music qualities. When an educator understands music giftedness, along with multiple strategies for music creativity and innovation, students can begin to dive into their gifts. Music education, therefore, needs more methods of teaching than just performance preparation. Individuals have the ability to utilize technology to increase one's own musical skills. "All of these skills can be gained to a large extent

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[21] Jonathan A. Plucker, Anne N. Rinn, and Matthew C. Makel, *From Giftedness to Gifted Education: Reflecting Theory in Practice*, (Waco, TX, 2017), 29.

[22] Ronald B. Thomas, "Designing a Curriculum for the Gifted and Talented," *Music Educators Journal*, Vol. 76, Iss. 7, (1990), 54.

individually, outside the music classroom, in the auditory isolation provided by headphones, and without excessive new demands on teachers' time."[23] Despite the benefits of technology, it also provides new challenges. Society continues to struggle with inequalities of class standing and financial support, which results in limited availability to technology as a means of learning music. Technology creates great opportunities to pursue music individually, which potentially creates a greater gap in student achievement in music. Technology makes music notation accessible, which results in an even greater need for acceleration and creativity in the music classroom. Gifted music learners often display high levels of creativity and motivation, thus a higher chance of independent music learning. Gifted students often do not receive the fine arts instruction they need. Students who need gifted services in academic subjects are likely to also need services in music classes; therefore, music educators need gifted endorsements to learn how to understand the gifted learners in the classroom.

The presence of technology creates a greater availability of music education. Thomas emphasized important ideas to consider in writing a gifted curriculum. He emphasized using music as a language with a focus on aural skills. In addition, he also mentioned some aspects that may not be typical for the traditional performance-based classroom.[24] Technology creates new possibilities for music education.

> This use of technology makes music literacy skills involved in reading, comprehending, and notating music are also attainable with these resources. Currently available tools track the user's singing, allowing the eyes to train the ears to distinguish the sounds that the user sings. Other tools not only tutor rhythm reading skills but also develop the aural logic of rhythm.[25]

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[23] Ronald B. Thomas, "Designing a Curriculum for the Gifted and Talented," *Music Educators Journal*, Vol. 76, Iss. 7, (1990), 54.

[24] Ibid., 54.

[25] Ibid., 54.

Gifted music students have the ability to gain music knowledge with their own motivation with the teacher acting as a guide, and the resource of technology ensures more accuracy in a gifted child's aural training. Music educators can utilize this resource to create new strategies for gifted music curriculum.

Gifted and Talented Identification

After establishing a need for gifted curriculum for music students, identifying these students is a must. Students are all unique; thus, showing the need for specialized instruction. Giftedness is far deeper than a basic IQ score, and giftedness comes in many forms. Renzulli created the Three Ring Conception of Giftedness, "which includes above-average ability, creativity, and task commitment. The researchers developed an observational model with checklists for screening students with high potential dance and music talents."[26] A checklist of observed behaviors could be an indicator of music giftedness. Educators should observe behaviors of students, and then make recommendations based on these observations. This differs from a normal gifted referral process, as the traits observed are specific to music. These observations, however, can be difficult to identify based on a student's upbringing. Parental support and involvement play a role in a child's musical ability.[27]

Gifted and talented is not necessarily mutually exclusive with the musically gifted and talented; however, there are not significant resources in a gifted classroom.[28] Gardner's multiple

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[26] Sally M. Reis*, Artistically and Musically Talented Students*, (CA: National Association for Gifted Children, 2004), xxvi.

[27] Ibid., 40-41.

[28] Shelley Clarke and Jennifer L. Rowley, "The Musical Education of Academically Gifted and Talented Students," The Victorian Journal of Music Education, Iss. 2008, (January 2008), 31.

intelligences suggest "that intelligence and giftedness may be manifested in many different domains, such as kinesthetic, musical, spatial, mathematical, linguistic or analytical, and the ability to commit to tasks and memorize knowledge is only a small aspect of giftedness."[29] Clarke and Rowley suggest that educators could create programs that aid to specific strengths of the students; however, this would require having an understanding of these specific abilities of students. Researchers have developed several indicators and attributes of students who may be gifted and talented. These qualities are well-known to gifted educators; however, the presentation could differ in a music classroom. Clarke and Rowley discuss a previous experiment where the students were arranged by IQ range to show cognitive giftedness. In a music classroom, this would not be an accurate means of groups, as "students from these categories may possess musical aptitude or ability that has not been realized."[30]

Talent in the arts is an indicator of giftedness, and gifted educators are aware of this connection, even though they often do not have the experience in this area. Jason A. Helfer stated that, "it is unclear in most jurisdictions who should receive art enrichment services. Few gifted education specialists are trained to recognize, encourage, and develop talents in music or the visual arts."[31] In addition, fine arts educators typically do not have extensive knowledge regarding gifted accommodations. Helfer emphasized, "many concerned with the educational opportunities and programming provided for gifted children are left with unanswered questions: How should we select gifted children for programs in the arts? What skills and attributes should

[29] Shelley Clarke and Jennifer L. Rowley, "The Musical Education of Academically Gifted and Talented Students," The Victorian Journal of Music Education, Iss. 2008, (January 2008), 32.

[30] Ibid., 32.

[31] Jason A. Helfer, "Educator Perceptions of Artistically Gifted Children: Degree of Alignment between Beliefs of Music Specialists, Art Specialists, and Administrators," *Educational Research Quarterly, Vol. 43, Iss. 3,* (March 2020), 53.

gifted children demonstrate to qualify for inclusion in arts programs?"[32] When educators lack the necessary training for gifted services in music, students are left without a differentiated curriculum that meets their needs to succeed in the music classroom. With limited training, how could we service these uniquely gifted students? How can we evaluate the way a student needs gifted music instruction? Does educator perception of gifted relevancy negatively affect a student's ability to thrive in fine arts?

According to Helfer, talents in the arts "are valued as they introduce gifted children to key concepts such as multiple opportunities for expression of concepts and ideas; the skills of perception, performance, and production; and an awareness of the possibility of a career in the arts."[33] Helfer perceives an awareness of educators, but they get little encouragement from officials to address giftedness in music. The recurring issue in this matter appears to lie in lack of knowledge on how to identify giftedness in the fine arts.

Although gifted and talented qualities can present differently for students, it is important to create extensive parameters of music assessments for gifted identification. Due to the diversity of giftedness, assessments should also be diverse. Lloyd Schmidt proposed three distinct skills for identification: "performance skills, creative ability such as composition, and verbal and musical-perceptual skills. Schmidt proposes that by considering both demonstrable and potential talent in each of these three skills areas, music educators could better identify the pool of students needing special programs."[34] Giftedness cannot accurately be measured through a

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[32] Jason A. Helfer, "Educator Perceptions of Artistically Gifted Children: Degree of Alignment between Beliefs of Music Specialists, Art Specialists, and Administrators," *Educational Research Quarterly, Vol. 43, Iss. 3,* (March 2020), 53.

[33] Ibid., 54.

[34] Carol P. Richardson, "Measuring Musical Giftedness," *Music Educators Journal* 76, no. 7 (1990): pg. 41, https://doi.org/10.2307/3401036.

performance alone, so assessing creativity is necessary. Psychometric qualities are an essential way to observe and assess giftedness in music. With assessing music aptitude such as rhythm and pitch identification, the creativity assessments are also important. Although research on creativity assessment is minimal, Carol Richardson provides some examples of these assessments at the elementary level. This assessment "asks the student to produce examples of a steady beat, to imitate six events described by the teacher, to improvise many ostinatos on a bass xylophone, and to move to six selections of recorded music."[35] While discovering different ways to display creativity, this assessment can be a significant indicator of the potential for giftedness in music. A performance audition is a vital aspect to the assessment, but creativity should be weighted in equal importance to the performance, if not more. Although there is a dire need to assess musical knowledge and current ability, the potential is more important. If a student is exceptionally gifted in music but has not had the opportunity to foster this gift, the music educator should focus on the potential. This is especially significant for students with behavior issues or hyperactivity in the classroom. Music educators should assess these students, focusing on creativity, to determine their music ability and potential. Fostering into these gifts of all students will help them achieve greater success in the music classroom.

In summary, the following concepts and ideas supported by Helfer can be summarized and incorporated into an Arts Curriculum:

· Arts education extends beyond performance;

· Convey meaning through the development, refinement, and presentation of a work of art,

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[35] Carol P. Richardson, "Measuring Musical Giftedness," *Music Educators Journal* 76, no. 7 (1990): pg. 42, https://doi.org/10.2307/3401036.

· Creating works of art;

· Performing works of art;

· Presenting works of art;

· Producing works of art;

· Responding and connecting to works of art;

· Perceiving and analyzing artistic works;

· Interpreting intent and meaning in works of art;

· Applying various and varied criteria to evaluate artistic work;

· Relating artistic ideas and works to societal, cultural, and historical contexts;

· Synthesizing and relating personal experiences and knowledge to the making of art;

· Include students who could excel in all fields of study, not just those who perform well.[36]

[36] Jason A. Helfer, "Educator Perceptions of Artistically Gifted Children: Degree of Alignment between Beliefs of Music Specialists, Art Specialists, and Administrators," *Educational Research Quarterly, Vol. 43, Iss. 3,* (March 2020), 54.

CHAPTER THREE: METHODS

Design of Study

In order to create a gifted music curriculum, it is important to inform and support music educators' knowledge of gifted students, provide effective differentiation strategies, and provide detailed analyses of the gifted and talented in music. This study will be completed using the qualitative form of research. The intent of this study involves recommending a reformation in both music and gifted education to better suit all students, along with a calling for a growth in music programs and support for a more diverse curriculum. Creswell stated, "This involves discussing the sample for the study and the overall data collection and recording procedures. It further expands on the data analysis steps and the methods used for presenting the data, interpreting, validating it, and indicating the potential outcomes."[37] A qualitative study will be most efficient to bridge the gap between music and gifted education.

Qualitative research contains notable characteristics that are distinctive from other research methods. In this research, the most notable actions are inductive and deductive data analysis, reflexivity, and a holistic account. Inductive analysis is described as, "building patterns, categories, and themes from the bottom up by organizing the data into increasingly more abstract units of information. This inductive process illustrates working back and forth between the themes and the database until the researchers have established a comprehensive set of themes."[38] This is followed by deductively analyzing the data to affirm the need for more research or any other additional information.[39]

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[37] John W. Creswell and J. David Creswell, Research Design: Qualitative, Quantitative, and Mixed Methods Approaches, (Los Angeles, CA: SAGE Publications, 2018), 180.

[38] Ibid., 181.

[39] Ibid., 181.

This curriculum project will serve to analyze current trends in music education and its relevance to gifted education. The research will consist of a strict analysis of music education in order to discover gaps with gifted students. Following the analysis of gaps with gifted students, there can be a new curriculum designed to meet the needs of musically gifted children.

Gifted education is something that many are aware of, but few truly understand the complexities of educating the gifted child. Although musical ability is taught to be one of the key indicators of giftedness, educators often do not focus on this aspect of giftedness. Music educators will provide ample performance opportunities for those who show high music aptitude, but they will foster into this level of giftedness to truly let these students grow. In American education, music educators do a phenomenal job at performance preparation and providing memorable experiences for their students. American music educators have exceptional knowledge and aptitude in performance; however, there are many other aspects of music that need to be addressed in the classroom. All students should be exposed to different ways of learning music, and these opportunities could help gifted students thrive. Despite this vast knowledge among educators, there needs to be an intentional integration of gifted and music education.

CHAPTER FOUR: RESEARCH FINDINGS

Benefits of Music Educator Knowledge on Gifted Music

For this curriculum to be effective, educators will need more training in two areas: gifted education and music technology. Many music programs in the United States have an emphasis on performance, which encourages task commitment in music class. When performance preparation is partnered with theory, ear training, and other important concepts, it is valuable for both the students and the teachers; however, this is not the only way to "do" music. A focus on gifted students, along with music technology curricula, completes the missing piece to the music education puzzle. Technology is vastly growing and evolving in society, and music is subject to this growth. Courses in music technology and production are innovative ways to create music in the evolving society while potentially serving the gifted music students. The increase in music technology creates a greater need for training of music educators.

William I. Bauer and Richard J. Dammers discussed the use of music technology in the typical American music classroom. After surveying multiple music teachers, they discovered that although they often used technology for administrative tasks, educators would not often use technology to support music learning.[40] Upon further research, Bauer and Dammers discovered that many music educators did have to take a course in music education technology. It is unlikely that this course focused on music production techniques.[41]

If the curriculum is going to be successful, there needs to be adequate training in music technology. With the constant growth and digitalization in society, music educators have an opportunity to utilize music technology to provide innovative education to students. Brauer and

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[40] William I. Bauer and Richard J. Dammers, "Technology in Music Teacher Education: A National Survey," *Research Perspectives in Music Education* 18, no. 1 (January 2016), 3.

[41] Ibid., 9.

Dammers discovered that many music educators feel they lack the resources for proper technology, and they proposed the idea of "Developing a map that designated the location and types of technology experiences to be included in the preservice teacher curriculum."[42] In addition, there are available resources to aid in music technology education. Bauer and Dammers' survey indicated that many preservice preparation programs did require a course in education technology that was not geared specifically to music, but to all educators.[43] Although these courses are useful, there are multitudes of opportunities unique to music technology. The term "music technology" is an all-encompassing term for multi-faceted arrays of digital music. It should not be limited to notation and traditional composition software, but it should include modern software for contemporary styles of music. In this way, music educators can be more inclusive to unique learners.

In addition to music technology, music educators also need training in gifted education. Music educators have an incredible opportunity to foster gifted students in a unique manner. Talent development is a huge factor in fostering gifted students, and this should be the goal in every school system. Although talents and gifts do have some inherent qualities, the majority of gifts and talents are developed throughout childhood.[44] The nature of music allows for unique levels of differentiation, but it begins with professional development for music educators.

In order for effective training in gifted education, music educators need to understand the value of gifted professional development. Fine arts educators sometimes feel excluded in school-

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[42] William I. Bauer and Richard J. Dammers, "Technology in Music Teacher Education: A National Survey," *Research Perspectives in Music Education* 18, no. 1 (January 2016), 11.

[43] Ibid., 12.

[44] Jonathan A. Plucker, Anne N. Rinn, and Matthew C. Makel, *From Giftedness to Gifted Education: Reflecting Theory in Practice* (Waco, Texas: Routledge, 2017), 26.

wide meetings or professional development due to its academic focus. Music education possesses unique structures and qualities in the classroom, so educators need specialized training in gifted music education. Gifted and talented students in music are complex, and educators deserve subject-specific professional development. Courses and professional development focused on music giftedness creates a deeper value and relevancy to music educators. This will help music educators better teach their gifted music students, and it will help them find qualities of other potential giftedness in music.

Benefits of Student Involvement in Gifted Music Courses

In an increasingly digital world, music is not immune to the growth in technological influences. Music technology has been around for a while, but advancements are continually being made. Music technology needs to include a course in digital music, and the hardware needed for music editing and creating. Although classes like chorus or band that focus on live music and performance are absolutely necessary, music technology is also important. The growth in digital music provides more opportunities for students. Music software in the classroom aids in 'real world' experiences relevant to today's culture[45] Although there is still much controversy regarding music technology, it is still true that it gives students the opportunity to explore more ways of making music.

Introducing digital music and basic sound engineering to gifted music students can provide real-life skills and basics of the music industry. It could be an additional skill that sets students apart from other music students. With the freedom to create music and new sounds without the pressure of performance, this curriculum may be more inclusive to all gifted

[45] Kirsty Devaney, "'Waiting for the WOW Factor': Perspectives on Computer Technology in Classroom Composing," *Journal of Music, Technology &Amp; Education* 12, no. 2 (January 2019): pp. 122-123, https://doi.org/10.1386/jmte_00002_1.

students. This can engage the easily bored student, and it can give the disciplined student another form of creativity. The active use of music making and creativity on the computer could foster the strengths of gifted music students in a unique fashion.

Measuring Qualities of Gifted Music Learners

Although there will probably never be a definitive answer for set gifted music qualities, it is important to understand some actions and behaviors that show potential giftedness. Each student is unique in their personalities and qualities, and each child experiences different opportunities and situations that may affect their music knowledge. Despite any prior music opportunities, it is important to understand how any potential can be identified.

There are three areas that educators can assess in determining musical abilities: performance skills, creative ability, and verbal and musical-perceptual skills.[46] Renzulli emphasized specific areas where educators can study and analyze giftedness, which are as follows: "1. Preschool and developmental information, 2. Psychometric information, 3. Performance information, 4. Motivational information, and 5. Sociometric information."[47] Developmental information should be studied at a young age, so lower elementary parents and teachers have a unique opportunity to analyze and determine potential music giftedness at a young age. Some examples of potential giftedness in a young child include: "unusually high interest in music activities, responds sensitively to mood or character of music, repeats short rhythmic patterns with ease, sings in tune or very nearly in tune, identifies two short rhythm

[46] Carol P. Richardson, "Measuring Musical Giftedness," *Music Educators Journal* 76, no. 7 (1990): pp. 40-45, https://doi.org/10.2307/3401036.

[47] Ibid., 42

patterns as the same or different, identifies familiar songs from the rhythm alone,"[48] along with several other qualities.

Psychometric information is another vital means of determining potential giftedness in music. This includes musical aptitude, creativity, interest, and performance.[49] Musical aptitude tests seek to measure "particular skills such as pitch discrimination, tonal memory, rhythmic memory, chord analysis, and musical sensitivity."[50] These tests should be combined with testing for creativity, which is the ability to think innovatively in performing and creating music. Carol Richardson provides some ideas of assessing musical creativity by "Wang's Measures of Creativity in Sound and Music, for ages three through eight, asks the student to produce examples of a steady beat, to imitate six events described by the teacher, to improvise many ostinatos on a bass xylophone, and to move to six selections of recorded music."[51] In addition to Richardson's suggestions, measuring original improvisational skills is another great indicator of creativity.

Some other familiar means of assessing include the following: performance, motivation, and perception of peers. Exceptional aesthetic attention in music could be observed using a listening test, where the student has to find errors in repeated melodies, or other means of listening. The exceptional motivation can simply be determined by asking the student questions to understand their interest and commitment to music. The questions could include their self-perception on music, general interest, and listing student involvements in and outside the school. The sociometric assessment would be assessing the peers of that student. Classmates and other

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[48] Carol P. Richardson, "Measuring Musical Giftedness," *Music Educators Journal* 76, no. 7 (1990): pp. 43, https://doi.org/10.2307/3401036.

[49] Ibid.

[50] Ibid.

[51] Ibid.

teachers often perceive exceptional abilities of students, and this can provide other abilities that may have been missed. A combination of these case studies can provide educators a good assessment of giftedness in music.

Implementing A Gifted Curriculum

Although the curriculum is meant to be the answer of combining music and gifted into one course, there may be a need for further modifications. The educator should assess the students and identify any need for further strategies for implementation. Music educators can provide acceleration for gifted students. It is important to be mindful of acceleration because sometimes educators can be inconsistent with acceleration. Some examples describing acceleration are, "whole-grade acceleration, including grade-skipping, early access to kindergarten or first grade, or early entrance to college, and content or subject acceleration when students are moved up for only one subject, such as reading or math, but remain with their age-peers for other subjects."[52] Although this example is not specific to music, the idea can still apply. If there are exceptionally gifted students, opportunities for more advanced or more compact music courses could be a great option. Keeping an accelerated but steady pace in the course is essential for the gifted learners.

Differentiated curricula is another example. In the provided example, if there are exceptional students, the projects can be different or have more complex components. The goal of differentiation is to modify any coursework to meet the needs of the learners. This may allow for more creativity in coursework, or modified assignments for more challenging goals. Regardless, this music technology curriculum is intended to successfully combine gifted and music, while developing new musical skills.

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[52] Jonathan A. Plucker, Anne N. Rinn, and Matthew C. Makel, *From Giftedness to Gifted Education: Reflecting Theory in Practice* (Waco, Texas: Routledge, 2017), 2.

CHAPTER FIVE: DISCUSSION

Summary of Project

A review of existing literature displayed a lack of gifted studies within music classrooms. The existing literature revealed a lack of studies on gifted music technology. This study identified the need for gifted integration in music, provided methods and strategies, and proposed a solution by providing a curriculum. The curriculum provided services for gifted students to study music technology and allowed for creativity in these students. Although the curriculum is geared toward middle grades, it can be modified for other grade levels.

Summary of Purpose

The purpose of this study was to display more utilization of music education in schools, by incorporating gifted services into the music classroom. This curriculum serves to provide an example of how to incorporate gifted students in the classroom. The curriculum is accelerated, and it provides students ample opportunity to use creativity in the classroom. In addition, this provides a different style of music learning that is not often seen in the typical music classroom. In order to better understand both gifted and music education, it is important to consider them together. Providing more specialized training for music educators would help students, and it can positively change the music program. This was the goal for the curriculum. It is important that these concepts are included in music programs.

Summary of Procedure

The mode of research for this curriculum was a qualitative approach, analyzing existing literature in regard to gifted services in the music classroom. The goal was to identify any gaps in music education for gifted students. By identifying flaws in existing literature, the author could develop a curriculum to include sound engineering techniques for gifted students. This was

accomplished through a careful and adept analysis of existing literature along with the author's educational experience. Through the literature analysis, the author developed a curriculum that is accelerated to accommodate gifted learners, while fostering into a modern aptitude of music.

Summary of Findings

A review of existing literature revealed a lacking in music educator preparation in certain areas. The most common music program consists of performance preparation. Although this is great for students, other outlets of music are equally as important. Gifted services should be emphasized, and it is important that gifted students have the opportunity to foster into their unique creativities. Existing literature reveals that many music educators have not been properly trained on this in a relevant manner.

In addition to gifted education, existing literature revealed similar conditions for music educators and technology training. The literature analysis revealed that although many music educators did take a course in education technology, it is unlikely that it included other means of music technology, such as sound engineering and production. For a successful gifted music aptitude, a curriculum with these skills is necessary. Music educators need training in sound engineering, as they have a unique opportunity to provide a modern innovation to music-making. Preservice programs and professional development should provide these opportunities to music educators. In addition, academic educators and administration need professional development in this area. This could aid in music relevancy and advocacy in schools.

Existing literature provided excellent means of gifted music testing. Music educators can measure psychometric information, performance, motivation, and perception of peers. Although a general gifted assessment may attempt to measure these qualities, the music educator has the

opportunity to assess in a sole music environment. The results of this assessment will likely vary from a general gifted assessment.

Despite the gifted focus of the curriculum, additional modifications are possible. The music educator should assess the students and determination the acceleration of the course. If the class contains exceptionally gifted students, more acceleration or modifications on projects may be necessary. Each music educator should make any instructional decision based on the needs of the class. The purpose of this curriculum is to provide gifted music students a new style of learning music. Only the educator will truly understand the needs of his or her class.

Limitations

The suggested curriculum is recommended for middle grades, although it could be modified to fit other grade levels. This curriculum is highly dependent on the ability to obtain a digital-audio workstation in order to create digital music. Although there are multiple different digital-audio workstations, they often require a subscription. In some districts, this could be a challenge. There are multiple opportunities, so assignments may have to be modified depending on the available software. With that being said, this is only a suggested curriculum. It is not meant to be implemented in its exact structure. The music educator may alter the timeline of the curriculum based on student knowledge and length of class. The curriculum fits one semester, but it would need modification if the class had a different duration.

Another limitation is the lack of availability in preparation programs. A music education preparation program is often time-consuming and completing the degree in four years is a challenge. Adding courses in sound engineering or more training on gifted could overload the students. There may not be enough room in the schedule. Many programs may need a reorganization of structure in order to add this training.

Recommendations for Future Study

This curriculum project is a suggested model for a gifted music technology course to provide an example of serving gifted students in a music classroom. This curriculum serves to provide a foundation of audio production and engineering as a new way of music learning in the classroom. Since there is a lack of literature on gifted music courses, there is much opportunity for future study on this topic. An analysis of the implementation of the curriculum is another opportunity for study. This study could be used to strengthen curriculum writing for gifted music students.

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Appendix

COURSE SYLLABUS

NAME OF COURSE: MUSIC TECHNOLOGY FOR GIFTED LEARNERS

COURSE DESCRIPTION

This course is a gifted class to help students achieve a deeper understanding of music production using technological platforms. Some elements that will be studied are the science of sound, hardware, software, digital audio workstations, sound engineering, recording mediums, with implications on both PC and Mac.

RATIONALE

In an increasing digital society, music is also becoming more digital. As young musicians grow in their musical knowledge and skills, it is imperative to focus on the technological aspects of music. In a world where much knowledge is simply a click away, musicians often struggle in the sense of music technology. With a music technology course in middle school, students will be set apart in their music knowledge. This course will help students learn how to create and evaluate music with various hardware and software.

In addition, there is also a need for music for the gifted learner. While there is a plethora of academic courses created for gifted learners, there appears to be a lacking in music courses for gifted learners.

I. PREREQUISITES

- **A.** A gifted or high-achieving learner
- **B.** Previously taken band, chorus, or general music
- **C.** At least one year in band, chorus, or general music
- **D.** Recommendation from a music teacher or gifted academic teacher

II. REQUIRED RESOURCE PURCHASE(S)

- **A.** Fein, M., Frankel, J., Hodson, R., McCready., R. (2010). *Making Music with GarageBand and Mixcraft*. Boston, MA: Cengage Learning PTR.
- **B.** Hosken, D. (2015). *An Introduction to Music Technology*. Milton Park, AB: Routledge Publishing.
- **C.** Langol, S., Richmond, F., Rudolph, T., Whitmore, L. (2007). *Alfred's Music Tech Series: Sequencing and Music Production.* Van Nuys, CA: Alfred Music.

III. ADDITIONAL MATERIALS FOR LEARNING

- **A.** Computer
- **B.** *Garageband* or *Mixcraft*
- **C.** Internet access
- **D.** Pencil and paper

IV. MEASURABLE LEARNING OUTCOMES

Upon successful completion of this course, the student will be able to:

A. Identify elements of music and technological aspects and instruments, including digital audio workstations.

B. Interpret music alone and in groups using technology.

C. Examine various forms of sound engineering using technological platforms.

D. Create various styles of music with digital audio workstations using hardware, software, and hybrid programming.

E. Evaluate live performances by means of sound engineering and production.

V. COURSE REQUIREMENTS AND ASSIGNMENTS

A. Quizzes (10)

B. Journal Entries (10)

1. Students will complete weekly journal entries.

C. Science of Sound Project (60)

1. Students will write a song with lyrics that pertain to this unit.

D. Worksheets (30)

1. There will be occasional worksheets to help review material.

E. Loops Project (50)

1. Students will complete an introductory project on loops library.

F. Sound Engineering Project (80)

1. Students will record and edit using hardware and software.

G. Copyright Field Trip/Case Study (80)

1. Students will evaluate songs in regard to copyright laws.

H. Final Exam (30)

VI. COURSE GRADING AND POLICIES

A. Points

Quizzes (6 at 10 pts each)	60
Journals (12 at 10 pts each)	120
Science of Sound Project (1 at 120 pts)	100
Worksheets (8 at 30 pts each)	240
Loops Project (1 at 100 pts)	100
Sound Engineering Project (1 at 160 pts)	160

Copyright Field Trip/Case Study (1 at 160)	160
Final Exam (1 at 50 pts)	50

B. Scale

A = 940–1010

A- = 920–939

B+ = 900–919

B = 860–899

B- = 840–859

C+ = 820–839

C = 780–819

C- = 760–779

D+ = 740–759

D = 700–739

D- = 680–699

F = 0–679

C. Late Assignment Policy

Students should submit all assignments on time. There will be a 10% deduction for late work. All summative assessments will be completed completely online. Each assignment will occur in-person or online, so students can continue their work at home with zero issues.

CURRICULUM PROJECT – ANALYSIS CHART

PART I: CURRICULUM INFORMATION

Student: Haven Clippinger	**Course for which you are creating curriculum:** Music Technology for Gifted Learners
Required Textbook for Class: Langol, S., Richmond, F., Rudolph, T., Whitmore, L. (2007). *Alfred's Music Tech Series: Sequencing and Music Production.* Van Nuys, CA: Alfred Music. Fein, M., Frankel, J., Hodson, R., McCready., R. (2010). *Making Music with GarageBand and Mixcraft*. Boston, MA: Cengage Learning PTR. Hosken, D. (2015). *An Introduction to Music Technology*. Milton Park, AB: Routledge Publishing.	
Identify the problem:	
The student must create music in an increasingly digital world.	
Who are the learners and what are their characteristics?	
Middle school students in the 7th and 8th grades in a hybrid course. Pre-requisites* *Gifted or high-achieving learners *Previously taken band, chorus, or general music *One year in band, chorus, or general music *Recommendations from teachers	
What is the new desired behavior?	
Students will be able to create music in multiple varieties using technology.	
What are the delivery options?	
This course will be hybrid. Students will come to school in-person Monday-Thursday for 45 minutes each. On Fridays, students will log in online.	
What are the pedagogical considerations? *(Describe your general content and methodology for the course.)*	
This course will address digital music programming and technology equipment. In addition, they will apply notation and musicianship skills.	
What learning theory applies to your curriculum? Why?	

Bruner's Discovery Learning Theory will be used in music technology, as students will build upon past experiences to discover new learning experiences. Students will use their creativity and engage in discovering and creating new music using technological mediums.

Learning Outcomes **At the end of the course, the student will be able to:**
1. Identify elements of music and technological aspects and instruments, including various digital audio workstations.
2. Interpret music alone and in groups using technology.
3. Examine various forms of sound engineering using technological platforms.
4. Create various styles of music using digital audio workstations using hardware, software, and hybrid programming.
5. Evaluate live performances in regard to its use in sound engineering and production.

Part II: Learning Outcomes

Student: Haven Clippinger	**Course for which you are creating curriculum: Music Technology for Gifted Learners**		
Concept Statement:			
Learning Outcomes	**Content**	**Learning/Training Activity**	**Assessment**
1. Identify elements of music and technological aspects and instruments.	Week One: ■ Identify scientific elements of the creation of sound. ■ Define different properties of music. Week Two: ■ Review elements of music theory ■ Review science of sound and properties of music Week Three: ■ Identify different digital elements of music. ■ Define digital audio workstation	Week One: ■ Presentation on the science of sound. ■ Bill Nye Video Week Two: ■ Small group review ■ Group project Week Three: ■ Whole-class DAW presentation ■ Garageband tutorial	Week One: ■ Worksheet as a formative assessment ■ Weekly Journal Week Two: ■ Group project- group performs a song about the science of sound ■ Weekly Journal ■ Quiz Week Three: ■ Quiz ■ DAW Exercise ■ Weekly Journal
2. Interpret music alone and in groups using technology.	Week Four: ■ Interpret music with a DAW ■ Interpret elements in a loop	Week Four: ■ Garageband tutorial on LoFi ■ Loops Library	Week Four: ■ DAW loops project ■ DAW elements quiz

	Week Five: ■ Apply edits to existing elements ■ Demonstrate remixing in music	Week Five: ■ Textbook reading on editing activities in music ■ Remix tutorial	■ Weekly Journal Week Five: ■ Editing music group activity ■ Remix project ■ Weekly journal ■ Quiz
3. Examine various forms of sound engineering using technological platforms.	Week Six: ■ Examine various sound engineering hardware ■ Distinguish different forms of audio hardware Week Seven: ■ Experiment with sound engineering techniques ■ Analyze methods of sound production Week Eight: ■ Analyze digital audio data.	Week Six: ■ Fundamentals of Audio Recording ■ Hardware Mixer whole-class presentation Week Seven: ■ Whole-class activity on experimenting with sound engineering hardware Week Eight: ■ Audio File Formats Explained ■ Small group discussions on	Week Six: ■ Midterm ■ Labeling hardware controls activity ■ Weekly journal Week Seven: ■ Group project on sound engineering- one will record with others mix the recording using a control surface and hardware mixer ■ Weekly journal ■ Quiz Week Eight: ■ Week 7 project- take into a computer and make edits

	▪ Inspect music with audio software and hardware	projects from week seven.	▪ Weekly journal ▪ Quiz
4. Create various styles of music using digital audio workstations using hardware, software, and hybrid programming.	Week Nine: ▪ Create and edit music using digital programming from start to finish Week Ten: ▪ Construct new ideas for an original song ▪ Setup loops with MIDI	Week Nine: ▪ Projects in small groups ▪ Introduce MIDI keyboards Week Ten: ▪ Textbook reading on MIDI and software sequencers ▪ Class time for project	Week Nine: ▪ Begin work on group project- original song in DAW ▪ Quiz ▪ Weekly journals Week Ten: ▪ Original song project- add synths in week ten ▪ Quiz ▪ Weekly journal
5. Evaluate live performances in regard to its use in sound engineering and production.	Week Eleven: ▪ Evaluate the elements of a live recording studio. Week Twelve: ▪ Evaluate all elements of a song through a DAW.	Week Eleven: ▪ Field trip to Loud House Studios in Atlanta, Georgia. (add on) ▪ Study a live recording studio Week Twelve: ▪ Finishing touches on original song ▪ Group study for final exam	Week Eleven: ▪ Reflection activity from field trip ▪ Weekly journal ▪ Quiz Week Twelve: ▪ Final Project ▪ Final Exam ▪ Weekly journal

CURRICULUM PROJECT – DESIGN CHART

Learning Outcomes	Rationale for Sequence
1. Identify elements of music and technological aspects and instruments.	Before students can dive deep into music technology and audio production, they need to understand the basics of sound. They need to understand how sounds on a computer is created before they began creating music on their own.
2. Interpret music alone and in groups using technology.	At this stage, students begin to develop a deeper understanding of digital audio workstations. They begin to understand what music on a computer looks and sounds like. Students begin to understand the workings of various digital audio workstations, and they know how to use this programming in order to interpret music.
3. Examine various forms of sound engineering using technological platforms.	This is a good stage to build upon, as students begin to learn more about the workings of computer music. At this stage, students are introduced to hardware and soundboards. They dive deeper into recording and editing music.
4. Create various styles of music using digital audio workstations using hardware, software, and hybrid programming.	This is a good sequence, as students are aware of hardware and software. They are able to apply the knowledge they have learned so far, while also adding in more information on sound files and the inner working of digital audio. They begin to add more edits and effects to their project from the above learning outcome.
5. Evaluate live performances in regards to its use in sound	Once students know how to edit music, they are able to truly evaluate and understand audio production, which is why they will be given an opportunity to take a field trip to a recording

engineering and production.	studio. They gained all this knowledge, so they could see this experience in person with a deep understanding of the studio around them.

CURRICULUM PROJECT – DEVELOPMENT CHART

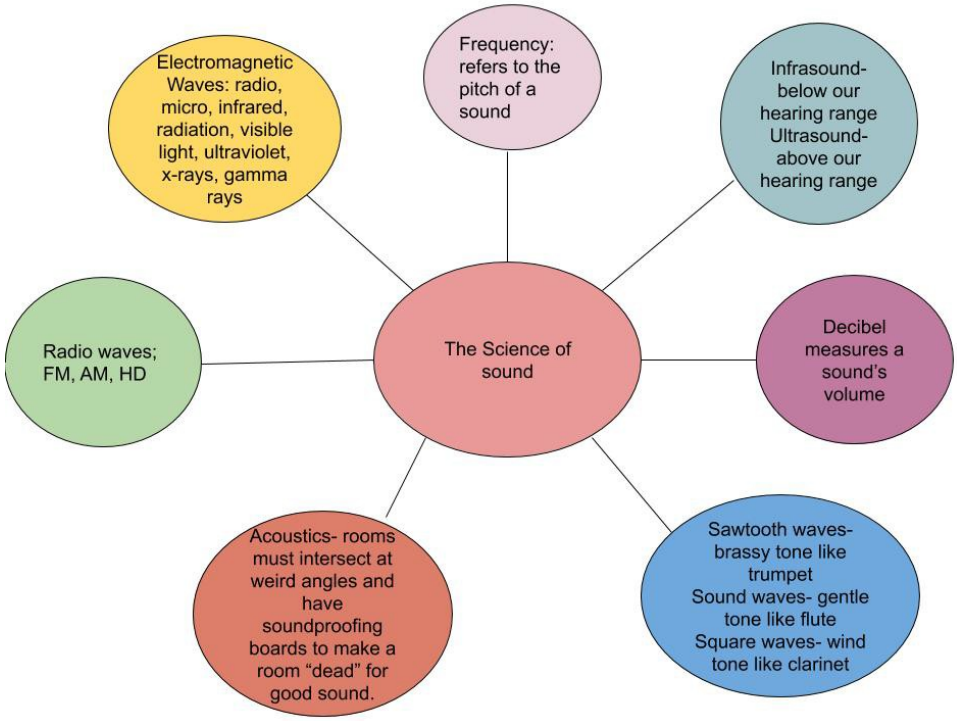
Student: Haven Clippinger	**Course for which you are creating curriculum: Music Technology for Gifted Learners**
Expository	
Good morning, everyone. Let's go ahead and answer the journal question on the board. We are going to begin our journey of music technology. In order to create music on the computer, we need to learn the basics of sound. If you take out the syllabus, you will see that the first unit is called "The Science of Sound." This week, we will focus on the scientific aspects that create sound. In order to introduce this unit, we are going to watch a Bill Nye video. The students will watch the video, which is approximately 24 minutes long. After the video, ask the students to discuss some elements they learned from the video. Now, let's get going on a quick project. As noted in the syllabus, your first project is to create a rap song that correlates with this unit. In order to learn how *Garageband* works, you will create an original song about the science of sound. Let's get into groups of two or three and begin brainstorming your original song. I will come around to each group to see what you come up with. Explore *Garageband* and learn how this DAW works. Pay attention to this video. After we finish the video, you have a worksheet to complete. This worksheet will help review the material provided in this video. Tomorrow, when we finish our worksheet, we will begin brainstorming for a new project!	
Narrative	
In beginning the very first unit in Gifted Music Technology, I begin by providing a journal question asking "What do you think music technology means? What do you think The Science of Sound means?" Shortly after, I will be showing an introductory video about "The Science of Sound." This Bill Nye video will really explain important scientifical aspects of sound, and he appeals to the different types of learners. After the video, I ask	

the students some questions to really foster discussion about the new material. Some questions I ask: What is a new concept you learned from this video? Describe the difference between frequency and decibel. Why is this important before we dive into music technology? Why should we measure sound? I ask students to get in groups of 2-3 and go to their assigned computers. They open *Garageband,* and they begin exploring this DAW. They will begin to learn through discovering.

In addition to the discussion, students will be provided with a worksheet to help them remember the new material.

Graphical Organizers

Here is a graphic of the most important points in The Science of Sound unit. These points are vital to this unit, and it is the foundations to Music Technology.



Gagne's Nine Events of Instruction

Instruction Event	**Describe how each instructional event will be addressed in your instructional unit. Cite a reference from you text as to why this approach will be effective.**
1. Gain attention	Students will answer an introductory journal question, which will provoke their minds of the ideas of music technology and the science of sound. These thought-provoking questions will engage the students.[53]
2. Inform learners of objectives	Students will be aware of the expectations of the class through review and the syllabus.[54]
3. Stimulate recall of prior learning	The journal questions will connect and recall prior learning. It will engage critical thinking and prepare the students for building upon their knowledge.[55]
4. Present the content	Students will stay engaged with a Bill Nye Video, then they will participate in a guided discussion.[56]
5. Guide learning	After the video presentation, we will have a teacher and student discussion in order to answer student questions and support the new information. I will also provide materials to support the new unit to the students.[57]
6. Elicit performance (practice)	Students will create original rap projects using *Garageband*, and the lyrics will correlate with the unit. Students will demonstrate what they are learning through this rap project.[58]
7. Provide feedback	Teacher will provide feedback, both positive and for growth, on the projects. Students will give peer feedback.[59]

[53] Linda Nilson, *Teaching At Its Best: A Research-Based Resource for College Instructors: Fourth Edition*, (San Francisco, CA: John Wiley and Sons, 2016), 132.

[54] Ibid.

[55] Ibid.

[56] Ibid.

[57] Ibid.

[58] Ibid, 101.

[59] Ibid.

8. Assess performance	Students will perform and present their projects to the class and allow the students to give peer feedback In addition, the students will assess themselves.[60]
9. Enhance retention and transfer	Students will be provided with a quiz as a means of an assessment to monitor student progress in the class.[61]

CURRICULUM PROJECT – IMPLEMENTATION CHART

Student**:** Haven Clippinger	Course for which you are creating curriculum: Music Technology for Gifted Learners
Physical Item	Rationale for Use Cite a reference from your text for each item indicating its effectiveness
Microsoft Office	Microsoft office is a versatile program, and with the multiple features and opportunities it presents, students can receive information in multiple different capacities.[62]
Apple Computers	Computers are actually a necessary for this class, as students need to create music on a computer. In addition to its obvious requirements, it is a good tool to have a plethora of information just a click away.[63] As students learn through discovery, multiple resources are important. (Nilson 57)

[60] Linda Nilson, *Teaching At Its Best: A Research-Based Resource for College Instructors: Fourth Edition*, (San Francisco, CA: John Wiley and Sons, 2016), 102

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[61] Ibid., 101.

[62] Ibid., 53.

[63] Ibid., 56.

GarageBand (or another DAW)	This is the main tool for project-based learning and instruction for this class. This is a learning tool for the act of creating music in this class, as it gives a virtual studio for music and basis for all required projects.[64]
Google Drive	Google forms will be used as a means of assessment of content. Students will take a quiz through google forms, which will encourage the retention and understanding of knowledge.[65]
Classroom Arrangement	Students will be in a large classroom with computer desks evenly spread throughout the room. In the front of the room, there is a large smartboard visible for all students, which will be helpful for lectures, presentations, and instructions. With a classroom set of computers and midi keyboards, students are given many resources for success in this classroom arrangement.[66] Students will also have tables in the front of the room to allow for group work when necessary.
Journals	Students will complete a daily journal entry as a means of retaining and restating content, as well as a means of promoting creativity and critical thinking.[67]

[64] Linda Nilson, *Teaching At Its Best: A Research-Based Resource for College Instructors: Fourth Edition*, (San Francisco, CA: John Wiley and Sons, 2016), 57.

[65] Ibid., 84.

[66] Ibid., 87.

[67] Ibid., 43.

Part II: List at least 6 necessary tasks and provide a rationale (e.g., jobs to be done in advance, such as arranging chairs in a specific formation, photocopying, etc.).

Task	Rationale for Task Cite a reference from your text for each task indicating its effectiveness
Setting up Technology	It is important to set up all of the needed materials on the large smartboard in the front of the screen, to not allow for any downtime for distractions in class. The Bill Nye video will be on the screen and loaded, so that the teacher can just press play with no setbacks. The video will serve as the presentation of the content, which aligns with the Science of Sound.[68]
Start up computers (and update)	It is important to set up technology prior to the start of class, as having students do this could take up time. When students are given an inch, they will run with it and will likely lose focus. Making sure the computers are up and running with the software up to date will cut down time and maximize instructional time.[69]
Open *GarageBand* and Hardware	Similar to the rationale above, it is important to make sure *GarageBand* is working, as this is an important learning tool for students. In this class set of desktop Mac computers, monitoring student use is easy and effective, and checking *Garageband* as well as any hardware in class prior to use is important for the overall effectiveness and success of the class.[70]
Google Quiz Created	Students will take a short quiz with each unit throughout the course. These will be available to the student through google forms, so grading on the teacher's end is instant. The quiz needs to be created before the day of class, but the assignment should not be shared with

[68] Linda Nilson, *Teaching At Its Best: A Research-Based Resource for College Instructors: Fourth Edition*, (San Francisco, CA: John Wiley and Sons, 2016), 52.

[69] Ibid., 95.

[70] Ibid., 56.

	the students until that class period, therefore the assignment should not post on google classroom until the start of class.[71]
Classroom Organization	It is imperative to arrive early to class in order to make sure the chairs are organized in such a way that each student can be actively engaged in class at all times. In addition, getting to the class early could help build and foster some relationships with students.[72] Students will have computer seats, and they will have tables in the front for group work to foster socialization.
Journal Feedback	Before a new week in class, I will always have journal entries from previous weeks completed and graded, with detailed feedback. The grading will be based on their knowledge and their detail to each answer.[73]

Part III: Describe in 4–6 sentences 1 type of Formative Assessment that you would choose to implement and detail its effectiveness for your course.

Formative Assessment Type	**Assessment Details**
Projects, Quizzes	All students will periodically take a quiz to check their progress in understanding the content. Throughout the course, there will be several instances of project-based learning. These projects will serve as formative assessments, as through learning and discovering in these different projects, students will participate and gain knowledge through discovery learning. This will also take part in their active learning in music through technology.

[71] Linda Nilson, *Teaching At Its Best: A Research-Based Resource for College Instructors: Fourth Edition*, (San Francisco, CA: John Wiley and Sons, 2016), 56-57.

[72] Ibid., 91.

[73] Ibid., 275.

Part II:

Evaluation and Reflection

Issue/Strategy	Rationale for Changing
1. Taking away a required textbook	Simply put, I believe three required textbooks for students is rather overwhelming. I am going to remove one of the required textbooks, but I am going to keep this removed textbook as an educator resource for myself. I want students to be challenged, but they should not be overwhelmed.
2. Create guidelines for signing up for the class	In my original syllabus, I stated that the requirements were that the student must be gifted or a high achiever, in addition to prior music knowledge. I need to emphasize more detail on this matter. Students do not need to be considered and accepted for the gifted program, but they do need to show high-achieving in music or other disciplines. Regardless, chorus, band, orchestra, and/or general music teachers will make recommendations to me on those who are high-achieving in music. I will collaborate with the gifted academic content teachers to see who displays music intelligence.
3. Projects will be graded based on a holistic approach.	Students will complete several projects in this class. They will be graded on the quality of their work, and I will always make sure to give them detailed feedback in order to really promote growth with the students. (Nilson 305).
4. Similarly, I will create and provide rubrics to the students for projects.	It is important that students are given clear expectations on projects, and rubrics provide clear guidelines of what students are expected to do on projects, and it also provides student an idea of what the evaluation will look like if they do not match up to the guidelines. This allows room for creativity while also being provided clear guidelines.
5. Taking away a few quizzes and assignments	Looking at my assignment list and weight, I think I added too many assignments. Although this is a gifted and high-achieving class, this is geared towards middle school. I have to keep this in

	mind with the assignment, as what I currently have in the syllabus simply is not feasible for the given age Occasional quizzes are helpful to see how students are doing in the midst of a unit.
6. Editing the fifth outcome to have kids truly evaluate	The final outcome is an important one, and Bloom's verb that I chose is "evaluate." It is important to redo this specific assignment, as focusing on a case study is a great way to get the students to evaluate and use this in a real-life context. Now only will the students meet this standard, but they will also be actively engaged in a real-world issue in the music business.

SUMMATIVE ASSESSMENT

Unit One Test- Science of Sound

1. Which sound waves travel through a medium?
   a. Electromagnetic waves
   b. Sine waves
   c. Mechanical waves
   d. Sawtooth waves

2. Which sound waves travel through a vacuum?
   a. Soft waves
   b. Electromagnetic waves
   c. Sound waves
   d. Mechanical waves

3. List the electromagnetic spectrum in order from lowest energy to most energy.

   _____

   _____

   _____

   _

4. Circle the wave that has the lowest amount of energy.
   a. Visible light
   b. Radio waves
   c. Microwaves

d. X-Rays

5. Define frequency

_____

_____

_____

6. What is the frequency of A4?

_____

7. List the range in which humans can hear sounds.

_____

8. What is defined as extremely high frequencies above our hearing range?

a. Infrasound
b. Decibel
c. Frequency
d. Ultrasound

9. What is defined as extremely low frequencies below our hearing range?

a. Waveforms
b. Mechanical Waves
c. Infrasound
d. Hertz

10. What does a decibel measure?

_____

_____

_____

11. What unit of measurement do you use for the frequency?
    a. Decibel
    b. Hertz
    c. Meter
    d. Pint
12. How many decibels could a sound measure before hearing loss begins?
    a. 30
    b.1
    c. 129
    d.180
13. Which of these is not a waveform?
    a. Sawtooth
    b. Sine
    c. Square
    d. Tangent
14. Which instrument utilized these waveforms to imitate sounds?

    _____

15. List some ways that ultrasound is used in our world today.

    _____

    _____

16. List some ways that infrasound is used in our world today. -

    _____

    _____

17. Describe how synthesizers were created.

    _____

    _____

18. Describe how a sound studio could be built for acoustics.

_____

_____

_____

19. How does a radio work?

_____

_____

_____

20. Describe how you can create a new song on Garageband.

_____

_____

_____

_____

_____

21. In a short essay (minimum of five sentences), describe some different elements on Garageband.

_____

_____

_____

_____

_____

_____

22. Circle all that apply:

    Name the different types of radio.

    a. HAM

    b. CB

    c. Route

    d. AM

23. Garageband is the included DAW in _____ computers.

24. Describe the different waveforms and the instruments included.

    _____

    _____

    _____

    _____

    _____

25. True or False: Mixcraft is an option for a DAW.