

THE EFFECT OF MUSIC PARTICIPATION ON
OVERALL ACADEMIC ACHIEVEMENT OF
HIGH SCHOOL STUDENTS

DISSERTATION

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Dissertation Approval

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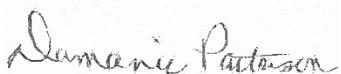
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Abstract

High school students were only required to receive one credit in the content area of fine arts to graduate. Therefore, participation in band and chorus in the high school setting was optional as other courses were offered in the content area of fine arts such as drama and art. As a result, many students never took band or chorus due to participation in other activities, not feeling musically inclined, due to lack of interest. Students that participated in band or chorus in high school usually participated for more than two years. The relevant research reported that the content areas of band and chorus stimulated the multiple intelligences which resulted in increased academic achievement of those students who took more years of band or chorus in comparison to students who did not. The purpose of this study was to examine student perceptions on their number of years of participation in band or chorus compared to their grade point average. A mixed methods study was conducted with open-ended questions online and one-on-one interviews in West Tennessee. The student responses were unanimous in the collection of responses. Results revealed no direct relationship between music participation and student grade point averages. However, results revealed positive student response regarding music promoting intelligence.

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Signature: 

Date: October 10, 2018

Dedication

I dedicate this study to my parents, Fred and Janice. I enjoy putting that smile on your face. I love you guys, and I thank God for blessing me with such great parents.

Acknowledgements

Taking a moment to reflect on the process that it took to complete this degree and dissertation is quite a humbling experience. God places people in your life to help you along the way with whatever you seek to accomplish when you are truly faithful.

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CHAPTER ONE: INTRODUCTION

“I would teach children music, physics, and philosophy; but most importantly music, for the patterns in music and all the arts are the keys to learning”.

-Plato

Music, dance, theatre, and visual arts were all classified as fine arts classes in education (Bryant, n.d.). Americans for the Arts (2013) reported that the arts were first recognized as core classes with the Federal Elementary and Secondary Education Act, and since that time 48 states have adopted content area standards for fine arts educators. Education Commission for the States (2007) reported the standard high school graduation requirement for each state in the content area of fine arts as less than one credit. Eisner (2010) noted that many people were not willing to see the arts as an area of importance however it could be beneficial to those involved in them. On the contrary, the area of fine arts was an integral part of everyday instruction for core subjects (Foust, 2017). Educators have integrated fine arts into their core curriculum of instruction to assist with academic content. The U.S. Department of Education has made amendments to its projects to incorporate the content area of fine arts for emphasis towards improving student achievement. Colegrove (2017) cited the U.S. Department of Education and National Science Foundation’s funding of modifications to add fine arts to STEM (Science, Technology, Engineering, and Math) changing it to STEAM (Science, Technology, Engineering, Arts, Math) to compete with other countries academically. The modifications to STEM’s main objective was to change the overall skillset of students “improving the competitiveness of American students on the global stage” (Colegrove, 2017, p. 6).

Americans for the Arts (2013) reported that students who took fine arts classes were “four times more likely to be recognized for academic achievement” (p. 3). Research by Phillips

(2013) indicated that involvement in the arts had a positive impact on a child's ability to concentrate and focus in other aspects of their life by requiring that the participant to utilize high-order thinking at the same time while doing ensemble work. Suarez, Elangovan, & Au (2016) studied the participation in music to determine its overall effect children of all age groups. National Coalition for Core Arts Standards (NCCAS) (2014) found that one-third of Americans reported learning around music as a child or adult in music by means of private or formal instruction. Band or chorus has been a key element in elevating student academic scores. Additionally, participation in music for children and teenagers in and outside of the school setting has been shown to contribute to academic success (Southgate & Roscigno, 2009).

Background

Hills Orford (2013) noted that music has been a part of the public education curriculum in the United States since the 1800s. According to Edutopia (2014) music was used as an advocate for other content areas and to manage behaviors in the classroom. Regardless of the grade level, there were specific components that were taught in band or chorus classes: theory and practical knowledge, history of music, analysis of composition, and studies and various genres (Stanford, 2012).

At the elementary level, music teachers have utilized singing, dancing, and musical instruments such as the recorder and keyboard along with others to enhance student learning (Teachology, n.d.). At the secondary level, students were often given the choice to participate in an ensemble such as band or chorus, both of which helped to enhance a student's metacognitive and fine motor skills. In general, the ensembles offered for most high school students included orchestra, choir, band, marching band, jazz band, and marching band.

18th Century

The first school established solely for music only had singing and was in Boston, Massachusetts. According to Stanford (2012) the school was built in 1717 and was intended to help cultivate literacy skills in reading music and for religious celebrations. A publication of books for students with appropriate singing diction was also printed during the 18th century and could only be used for secular purposes.

19th Century

During 1832, the Boston Academy of Music was founded to support both singing and music theory studies (Stanford, 2012). Lowell Mason published a text during the 19th century titled *Manual of Instruction*. The publication of Mason's book became useful for many teachers outside of the Boston Academy. Stanford stated that Lowell's book was used as a resource by future music educators in the classroom which "became part of the school curriculum for all ages of students" (Stanford, 2012, p. 2). As a result, the achievement in Boston set the tone for other school districts. This outgrowth of success in music education led to the establishment of "Normal Schools," or collegiate programs dedicated to training and instructing pre-service music teachers (p. 3).

20th Century

Oberlin Conservatory in Ohio was the first college to offer a four-year degree in music education (Stanford, 2012). In addition, during the 20th Century, the Music Supervisor's National Conference began to advocate the study and teaching of music. Music participation was encouraged in the 20th century with the installation of scholarships and awards offered by colleges and universities.

The impact of music education was examined for its effectiveness in the classroom. A symposium was held at Boston University in 2007 to examine the priorities of music education for the past forty years allowing music educators to give insight and their perspectives on music education (Stanford, 2012).

Purpose of the Study

This study examined the relationship between high school students' participation in band or chorus and academic achievement. Using years of participation helped distinguish the difference between students in school music programs and students not in a school's musical program. Educators could benefit from the information obtained in this study and gain a better perspective on music's impact on student academics. School leaders could apply the results of the study to determine if participation in band or chorus have a positive or negative impact on student academics. For example, school leaders could use the student self-reported grade point averages and survey responses to make changes to professional development, intervention, and professional learning communities (PLCs) regarding the content area of band and chorus in correlation with other content areas. Additionally, policy makers could examine the data obtained from the study to evaluate if appropriate support have been provided to band and choral programs in the district to help facilitate the planning of instructional needs for teachers.

Previous research had been administered to analyze the association between music participation and student academic achievement. For example, Glenn Schellenberg (2004) examined the impact that music had on students without formal music instruction and how it affected their academic performance after incorporating music lessons. Schellenberg revealed in his study that students who were involved in music lessons yielded higher intelligence quotients.

However, few studies have examined participation in band or chorus and student academic achievement the high school level.

Research Questions and Null Hypotheses

RQ1. Is there a relationship between the number of music courses taken by a student and their grade point average?

Ho1. There is no significant relationship between the number of music courses taken by a student and their grade point average as indicated by the Music Participation Questionnaire.

RQ2. Is there a significant difference between the GPAs of students who take music courses in school verses the GPAs of those who do not?

Ho2. There is no significant difference between the GPAs and the number of music classes taken in school

RQ3. What are student perceptions about that possible relationship between the number of music courses taken by a student and their grade point average?

Ho3. Students report no direct association between years of music participation and having an overall effect on student grade point average as indicated by the Music Participation Questionnaire (MPQ).

Rationale for the Study

Fine arts classes were linked to many core subjects and reinforce skills and information that must be retained for testing and everyday knowledge. Many teachers often incorporated art, dance, and theater into their classroom instruction. As stated by Oguz & Sahin, “art education enables individuals to think independently, generate new products, produce new and various methods to solutions, and express themselves through diverse fields of art” (2014, p. 5). Burton,

Horowitz, & Abeles (2000) explained that in comparison to schools that did not offer arts courses, “children from ‘arts-rich’ public schools score higher on expression, risk-taking, creativity-imagination, cooperative learning, and academic self-concept than children in ‘arts-poor’ systems” (p. 6). Furthermore, Americans for the Arts (2013) reported 72% of employers seek the skill of creativity in their employees.

In addition to music, the arts covered all content areas of learning (Teachology, n.d.). According to Fitzpatrick (2014), music influenced the brain and how the student learns in areas of reading, writing, math, processing speech, and having the ability to do more than one thing at once. Catterall and the National Endowment for the Arts (1999) reported that students who were engaged in fine arts classes such as instrumental music were more likely to graduate from high school than their peers who were not. The skills taught through constant music instruction resulted in characteristics that carry over into the workforce “discipline, ability to analyze, solve problems, communicate, and work cooperatively” (U.S. House of Representatives, 2006, p. 11). In comparison, music could have helped improve a child’s ability to learn, but it did not have an impact on one’s intelligence. According to Brown (2017) “music does not make one smarter” (p. 8). Few studies have examined the relationship between years of participation and academics of high school students in the content area of band and chorus. This study aimed to add to previous studies and research in the specific content areas of band and chorus in terms of brain cognition by examining the input of the high school students in addition student academic data.

The Researcher

The researcher has been an educator in the field of instrumental music at a rural Title I school for 15 years. The researcher holds a Bachelor of Science from University of Tennessee at

Chattanooga in Instrumental Music and a Master's in Education from Bethel University. As a band teacher and most importantly, educator, the researcher had noticed that one of the main priorities for high school students was testing; which lead to students spending more time studying the tested content areas (Language Arts, Math, Science, Social Studies) and less time participating in subjects that improved well-being over time, such as band or chorus. Therefore, the researcher sought to conduct a research study to gauge whether there was a relationship between the number of years a student participates in band or chorus and their academic grade point average.

Definition of Terms

Academic Achievement. Performance results where a person has met specific goals that were the center of activities set in the instructional setting (Steinmayr, Meibner, Weidinger, & Wirthwein, 2014).

Assessment. According to the Glossary of Education Reform (2015) a variety of tools used in the school setting by educators were defined as an assessment such as standardized tests. Progress reports are examples of forms of measurement for students in the school setting. The End Of Course (EOC) test given in the state of Tennessee was a means of measurement in specific content areas to assess student knowledge in the high school grade level each year. (Tennessee State Department of Education, n.d.).

Cognition. A person's ability to use their thoughts to gain more knowledge.

Grade point average (GPA). Gives numerical record of student achievement in the classroom on a degree of merit for each letter grade received. F=0, D=1, C=2, B=3, A=4 divided by the number of credits received to calculate the overall grade point average.

High school. A school containing grades 9, 10, 11, 12 or 10-12 in the United States (Merriam-Webster, n.d.).

Music. The art of arranging sounds in time to produce a continuous, unified, and evocative composition, as through melody, harmony, and rhythm and timbre (“music”, n.d.). The term music used throughout the study and could be instrumental (played) or vocal (sung).

Pearson r . Used to measure association between two variables; used with linear regression; considered the strength of the relationship between two variables

t -Test. This test compared two averages of the research and informed the reader if they are different from one another.

Summary

Although students may take band and chorus in schools, the school’s primary focus was on core content subjects outside of music. Research has shown that students who participated in school music programs fared well academically. A study conducted on a group of children ages 8 to 11 yielded better verbal IQ and visual ability results after receiving music training compared to students who had not (Foregard et al., 2008). In addition, band and chorus educators tested their students academically in the classroom based on a set a of standards that were taught based on the Consortium for National Arts Association published documents with specifications for effective implementation of the arts standards (Jones, Lipa-Ciotta, & Kindezierki, 2014). The research was conducted at a Title I high school within the content subject areas of band and chorus. The study was conducted to examine if there was a correlation between the numbers of credits in band or chorus and their grade point average.

In the review of Literature, music was explained as it related to metacognition (Hollenbeck, 2008) and Gardner’s Theory of Multiple Intelligences (Bas, 2016). Evidence of

studies related to music participation and academic achievement was also provided to align the gap in information that the author sought to connect. The research examined how music participation intersected with student academic achievement, both in grades and perception.

CHAPTER TWO: REVIEW OF RELATED LITERATURE

According to Ravitch (2016), education should be about “learning, questioning, discovering, and development” (p. 13). Along with self-guided learning, the student should have explored areas of cognitive thinking in a holistic setting. Students should have an opportunity to grow into thinking independently while learning, asking questions, discovering, and developing the skills they need. Hollenbeck (2008) noted that distinct types of learning skills such as, “cognitive, affective, and meta-cognitive,” could and would raise the academic achievement of high school students (p. 2). Metacognition could initially be defined as a way of assessing one’s thoughts, looking back, and planning the steps for the future regarding the progression for education and learning (Metacognitive Skills, 2006). Music has helped to scaffold upon the prior knowledge on which the cognitive development of students has been examined in 20th century classrooms. Portowitz, Lichtenstein, Egorova, & Brand (2009) found that structures of cognition gained with music instruction “exposed and illuminated more general organizing structures relevant for multiple disciplines” (p. 4). Doyle (2017) described cognitive skills included the ability to discover, to sort out, use understanding, comprehend, to examine and rationalize, and to assess and determine for one’s self. According the Tennessee Educator Acceleration Model (2017) students should be engaged in high-order thinking in the forms of: analyzing; practical, being creative; conducting research; during each lesson daily. Student response, creativity, and thought processes were emphasized with participation in music. Hollenbeck (2008) reported that participation in instrumental music yielded 58% cognitive skills, 70% affective skills, and a 71% in meta-cognitive skills in students.

Neuroeducation encouraged learning through music participation. Research of Curtis and Fallin (2014) explored neuroeducation processes and the way the human bodies and brain responded to specific learning events. They also examined the psychological associations necessary to learn and carry out the neuroeducation process, and the results of the research showed improvements in brain development at the end of the music study.

Schellenberg (2004) assessed the effects of music on young children after a set number of years of participation and determined that the IQs of children who took years of music lessons were higher than those who did not take music. Involvement in other non-musical activities did not impact the results of Schellenberg's results "Principle analysis showed higher IQs among musically trained children than their nonmusical counterparts, even when counting their family income and involvement in nonmusical out-of-school activities" (Winter, 2016, p. 16).

Music Participation

Participation in content areas such as music were important to the growth of children for all cultures (Ho, 2009). Elementary school was the first-time students had formal music in schools (Chandler & Mizener, 2011). Secondary band and choral programs were options for students to enhance their learning of the arts. Bands, orchestras, choirs, and the performance of a repertoire specific to these groups remained the catalyst of most programs (Frank, 2011). A student's decision to participate in band or chorus occurred at different time frames such as "middle school to high school or high school to college" (Demorest, Kelley, & Pfordresher, 2017).

Advocacy for band and choral programs played a role in student participation in secondary schools. Kuntz (2011) found that high school musicians may not have felt motivated to participate in music groups at school. Recruitment for new members in band and choral

programs was made by educators for “bands, orchestras, and choirs” (Chandler & Mizener, 2011, p. 21). Students did not select music as an elected course out of “lack of interest or self-perceived inadequacy as musicians” (Demorest, Kelley, & Pfordresher, 2017, p. 406). Researchers found a relationship between music participation and academic achievement, although the extent of the two is uncertain (Frey-Clark,). Kuntz (2011) noted, “School experiences establish understanding theory, developing technique, and establish effective ensemble involvement”. Researchers also examined the influence of family, peers, and other outside factors that influence musical participation decisions (Demorest, Kelley, & Pfordresher, 2017). Students who did not participate in music often participated in sports or other activities as an alternative (Frakes, 1986). The focus of music in secondary schools according to Frank (2011) became centered on getting students to play more difficult and technical passages in large groups. Music creation helped aid a student into a higher level of cognitive thinking resulting in positive academic achievement (Kariuki & Black, 2016). Vocal music students gained another written language and improved their motor agility (Tennessee Department of Education, 2018). Western music has had a substantial influence on the music education system in Hong Kong. Ho (2009) noted that secondary schools music education was only offered up to the junior year of high school with one lesson every week in Hong Kong. *The Music Office* established in 1977, supported music education in Hong Kong helped and taught students instrumental and other music groups when they had not received instruction during school hours; “the association manages and trains 18 youth orchestras, bands, and choirs, and organizes other outreach programmes” and held masterclasses for students (Ho, 2009, p. 31).

In 2012, Metropolitan Nashville Public Schools conducted a cross-sectional survey using the Structural Equation Modeling technique to be looked at music participation through the lens

of “school engagement and academic achievements” (Johnson & Eason, 2016). Johnson and Eason (2016) reported a total of over 6,000 participants in the study that resulted in music participation effecting student learning and had a positive impact on school involvement and academic achievement.

A research study conducted by Louis Frakes (1986) examined the exposure to music participation of 89 students from elementary to high school during the time frame of 1975 to 1983; several participants within the study took band and others took music, while some were not enrolled in band or chorus at all while attending school. Frakes (1986) concluded that students who participated in music had better academic achievement in addition to pursuing music beyond high school.

Theory of Multiple Intelligences

Howard Gardner’s Theory of Multiple Intelligences concept was first developed in psychology. Howard Gardner believed certain levels of intelligence were used to function and achieve certain results for everyone. Bas (2016) noted that “Gardner began to analyze the cognitive abilities of individuals in the 1970s and 80s after analyzing the traditional concept of intelligence” (p. 1835). Holding (2009) cited that there were initially three concepts to Howards Gardner’s Theory of Multiple Intelligences containing seven intelligences and eight supporting concepts of what explained intelligence (p.195). The seven concepts of Gardner’s Multiple Intelligences were musical, kinesthetic, logical-mathematical, linguistic, visual-spatial, interpersonal, and intrapersonal (Szpringer, Kopik, & Formella, 2014, p. 351). Holding (2009) reported one of the first gifts to arise in the early development of a child was music according to the consensus of developmental psychologists. Three areas of Gardner’s Theory of Multiple Intelligences according to Manic’ & Randelovic (2017) were linked to music:

Visual spatial intelligence- fine expression, drawing rendering, navigation, drawing maps, architecture, etc. Bodily-kinesthetic intelligence- the ability to use a body to display emotions: dances, games, body language (body signals) performing some sports and producing different objects. Musical-rhythmical intelligence-includes-capacities such as recognition and using rhythmical and sound patterns as well as sensitivity for sound irritation in environment, human voices and musical instruments. (p. 57)

Music and speech start in the same section of the brain (Helding, 2010). Research indicated the impact of music on the intelligences was effective on children resulting in “long-term enhancement of visual-spatial, verbal, and mathematical performance” (Schlaug, Norton, Overy, & Winner, 2006, p. 11). Musicians required the use of both visual-spatial and musical-rhythmical intelligence simultaneously to play a musical passage. Helding (2010) noted that “music ability is in the right brain while logical mathematical reasoning was situated in the left brain” and having the ability to make connections between the right and left brain to perform Western classical music required great ability (p. 326). Participation in singing evoked emotions in conjunction with body movement simultaneously as a form of art music (Helding, 2010). Bodily-kinesthetic intelligence was used by “musicians, dancers, and listeners” to memorize music (Tierney & Kraus, 2015). Helding (2009) noted that students who lacked spatial intelligence did not read music well and may have not understood music concepts and rhythms. Kraus & Chandrasekaran (2010) found that music instruction could have resulted in “functional and structural changes to the brain throughout our lifetimes, and that these changes may improve music processing” (p. 599).

Although Gardner’s studies provided evidence that the intelligences could be in various parts of the brain, they were connected in real life (Bordei, 2017). Gardner was an advocate for observation as a means of intelligence in the classroom to oversee the “cognitive profile” and observe “real life situations” to ascertain the “levels of development” and degree of intelligence at that time (Bordei, 2017). *Project Spectrum* initially tested this Multiple Intelligence Theory.

Within this project, Gardner tested 2 groups of kindergarten students through means of observation to identify their strengths and weaknesses (Bordei, 2017). The results of *Project Spectrum* were students had varied numbers of above average levels of intelligence and the families and educators had not been aware of each student's potential prior to the research (Bordei, 2017).

Gardner's principles for education were important for child development and learning (Szpringer, Kopik, & Formella, 2014). Students were more likely to retain information when they were hands-on with the lesson content and learned by experience (Kariuki & Black, 2016). Bas (2016) noted Gardner's Theory of Multiple Intelligences gave educators the tools to teach diverse learners, "providing education that is appropriate to student's intelligence types increases students' academic achievements" (p. 1836).

Gardner's Theory of Multiple Intelligence's have continued to be used in the classroom today. For example, school projects and other programs created grant programs and new facilities focused the principles of Gardner's Theory of Multiple Intelligences. Smart Schools derived from 'Project Spectrum' which incorporated activities and projects as part of an association of schools that implemented Gardner's principles (Szpringer, Kopik, & Formella, 2014, p. 352). The focus of the schools associated with Smart Schools met the needs of the student. Szpringer, Kopik, & Formella (2014) cited the importance of building on a foundation for improvement for each individual student based on their potential "identification of the child's strong points and balance of special and general abilities" (p. 352).

Fine arts methods were incorporated into the academic material that helped students improve on test scores both in the classroom and with state testing and helped with retention. During one study, changes were made to the traditional classroom assignment during an

experiment and included arts focused questions and activities. The study was administered to 97 students of which data was collected from 82 students regarding standardized testing information over a 16-day time frame. Hardiman, Rinne, & Yarmolinskaya (2014) used verbal tests, replaced worksheets with activities, replaced silent texts with dramatic passages, and allowed students to make drawings for vocabulary (p. 145). As a result, the fine arts integration into the curriculum helped to improve student knowledge of the content (Hardiman, Rinne, & Yarmolinskaya, 2014).

Kraus (2015) observed the brain activity of hundreds of teenagers in Chicago; the study observed three public schools taking music classes and compared them to other students that were enrolled in the Junior Reserve Officer's Training Corps (JROTC) classes (American Psychological Association, 2014). The high school students involved in the study were all on the same level academically and their brainwaves were recorded to sound and then compared two years later for progress; the result of the study demonstrated improved neural responses for students who had years of music instruction, however there was no change for the JROTC students (American Psychological Association, 2014). Kraus learned that when surveying college students as reported by the American Psychological Association (2014), they showed improved neural responses to sound compared to other college students when they had received five years of musical training in elementary school or high school.

General Academic Achievement

Great learning needed an infrastructure that was conducive for opportunities which was built on a challenging and innovative supportive learning environment (NCCAS, 2014). Teaching has required an interpersonal form of communication with students (Kim, Dar-Nimrod, & McCann, 2018). According to Zahedi & Moghaddam (2016), testing and assessing have gone hand in hand and been pertinent to education. Student academic success has been the content

area evaluated more often for teacher efficiency (Kim, Dar-Nimrod & McCann, 2018). High-stakes testing shifted the focus of what was taught in the classroom and how it was taught. Graduation rate and student grade point average were reflected with student achievement in secondary schools. Darrow (2016) classified low performing schools to be “where one third or more of the students do not graduate” (p. 9). Two mandates in education changed the focus of learning from the student to corporations that designed tests based upon what students should know: 1. No Child Left Behind (NCLB) 2. Race to the Top (Ravitch, 2016). The requirements for the adoption of each testing mandate placed newer demands on educators to be more knowledgeable in their content areas and that no child would be successful until all of them had passed the tests required by the state under the No Child Left Behind concept. With No Child Left Behind (NCLB) and Race to the Top, corporations profited as a result “standardized testing became a multibillion-dollar industry” (Ravitch, 2016, p. 26). School districts in the United States emphasized a more summative form of assessment (Aydeniz & Southerland, 2012). Frey-Clark (2015) asserted there needed an interest to protect music in the curriculum with the focus being centered on testing.

Every Student Succeeds Act modified No Child Left Behind and gave states the opportunity to experiment with their current policy and improve their education system (Saultz, White, McEachin, Fusarelli, & B. Fusarelli, 2017). President Obama signed Every Student Succeeds Act (ESSA) (P.L. 114-95) on December 10, 2015. The law “reauthorizes the Elementary and Secondary Education Act of 1965 (ESEA) and replaced No Child Left Behind (NCLB)” (Darrow, 2016). Due to instructional requirement in the classroom, the area of focus changed for many teachers, “catering instruction to the learning needs of average achieving students-who have the greatest likelihood of making gains on assessments” (Aydeniz &

Southerland, 2012, p. 235). The adoption of national standards in the classroom led to time being taken away from fine arts classes such as band and chorus. Concentration was placed what was being taught in content specific areas (reading, math, and science) to advocate student mastery on testing (Ravitch, 2016). Race to the Top as stated by Ravitch (2016) created competition in the workplace by offering incentives for those who met goals and fired those who did not and placed a corporate style of thinking into the schools.

In core subjects such as literature and mathematics, student proficiency was assessed yearly to determine the level of teacher effectiveness and student learning. The National Assessment of Educational Progress (NAEP) was a grading system utilized by each state for the assessment of their students' progress of knowledge in the areas of math, reading, and science (Tennessee Department of Education, n.d.).

The state of Tennessee offers the following tests as a means of assessment:

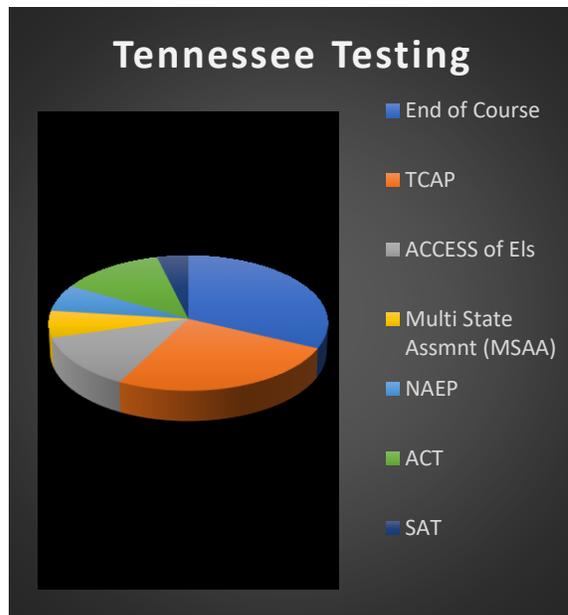


Figure 1. Tennessee State Department of Education (2017).

The state average for Tennessee high school students who took the ACT for the year 2015-2016 according the Tennessee state report card was 19.9 (Tennessee Department of Education, n.d.).

The sub-categories of math and reading only yielded over a 50% average of college readiness in the category of English for the state of Tennessee, the content area of math resulted in an average of 30.1%; 38.3% in reading; and 88.5% in graduation rate (Tennessee Department of Education, n.d.).

Fine arts was not a content area of testing and was not considered a ‘core’ subject area under No Child Left Behind (NCLB). According to the report for the Education Commission for the States (2007) standard high school graduation requirements for each state in fine arts was less than one credit. Although fine arts classes (music) were not tested in the high school setting, music had academic benefits “known to contribute much to other areas of the curriculum” (Hoffer, 2017, p. 3). Studies were conducted to determine whether there was a direct relationship between years of student music participation and their academic performance in the areas of reading and mathematics achievement. Americans for the Arts (2013) reported that students with an education prominent in the arts had higher grade point averages than their classmates without formal fine arts instruction.

Reading Achievement

Most high schools required reading and writing achievement and “54% of high schools require creative writing” (Americans for the Arts, 2013, p.12). The U.S. Department of Education (2018) noted literacy in instrumental music and vocal music as being able to “read, write, and perform music” (p. 214, 238). Fine arts classes brain activity and high order thinking through writing in the areas of art, music, drama (theater arts), and dance. According to Hetland and Winner (2010) arts have helped children to read, calculate, and understand scientific concepts. According to the Journal of Aesthetic Education (2000) music was like reading in that it was written text that must be read from left to right. The repetition of music instruction was

utilized to teach reading skills. Music instruction assisted with phonics and learning and helped to maintain a learning plan for students of low socioeconomic status (Slater, Strait, Skoe, O'Connell, Thompson, & Kraus, 2014). For example, a study conducted in Los Angeles of a group of bilingual children ($N = 42$) received music instruction in conjunction with English reading after one year compared to another group yielded results conducive of the environment for one group and consistent with the other because of the music instruction.

Research was conducted with a group of 5th and 6th grade students using the MAYAZ technique; the incorporation of music in the classroom for student response, to determine whether the music improved their writing skills (Batur, 2016). During the MAYAZ technique, students were given a writing exercise to conduct with and without music and determined their response; the study resulted in raised questions regarding brain function. Batur found the incorporation of music during the writing exercise yielded a better response from the group compared to the group that did not “one can argue that studying while listening to music greatly improves the fluent writing levels of the pupils” (p. 85).

Babo (2004) reported results from a study conducted amongst middle school students who took instrumental music and showed positive academic relations in the areas in reading and language arts. Southgate and Roscigno (2009) found participation in music both in and outside of the school setting were related to academic achievement for both children and teenagers. An initiative that improved literacy through music for grades K-12 was launched in 2012 called *Music Makes Us* (Woodard, 2014).

Mathematics Achievement

Every Student Succeeds Act (ESSA) set in place that all students received a “well-rounded education” which aligned the content areas of music and the arts with reading and math

in the classroom (Darrow, 2016). The state of Maryland in the year 2006-2007 provided data for testing of students in the content area of Algebra and determined if there was a distinctive difference academically of those students enrolled in choral and instrumental music that tested compared to others who were not. Helmrich (2010) reported that of the 6,026 students in six school districts who were tested, those who were enrolled in formal choral or instrumental middle school instruction outperformed their peers on the Algebra test.

Students who took music classes in high school typically scored better than their peers on national tests. In one study students who had music lessons scored 100 percent higher on a fractions test than their counterparts that learned the traditional way without music lessons (Why Music? 2018). Compared to students who never took any arts courses, fine arts students “generally score higher on Scholastic Aptitude Tests (SAT) than students who are not in any arts courses” (Hoffer, 2017, p. 10). Additionally, “On the SAT, students who participated in music score an average of 31 points above average in reading, 23 above in math, and 31 above average in writing” (College Board SAT, 2012, p. 7). Based upon statistics from the Americans for the Arts (2013), students who took more than four years of art and music classes averaged more than 100 points better on the SAT than students who took only half a year or less.

Research conducted by Hartman (n.d.) examined the relationship between music participation and reading achievement, mathematics achievement, and overall academic achievement of high school students. The numbers of years of music participation was evaluated during the study. Hartman’s study followed 25,000 students within a 10-year time span to their 12th grade year and resulted in higher math scores through participation in instrumental music.

Not all studies showed direct relationships between music participation and mathematic achievement. For example, Cox & Stephens (2006) found no differences in the math and grade

point averages (GPA) between high school students with some music credits and none. However, in the state of Georgia, Boyd (2013) reported in a study that middle school students who participated in music yielded higher scores in mathematics achievement than students who did not participate in any music activity.

Music Achievement

According to Hoffer (2017) music teachers needed to be self-directed and more responsible than other core teachers. According to Cranmore and Wilhelm (2017) there has been an inconsistency in student accomplishment for band and chorus in “awarding credits, grade point averages, and class rankings” (p. 4). Students in music classes were graded through critiques, learned to grow from their mistakes, and “assessment also provides students with feedback, which allow them to reflect on their own learning” (Mastrolli, Harnett, & Zhu, 2014, p. 3). Research showed that students learned how to take feedback when taking music instruction (Lipman, 2014). Music standards have posed a question to the validity of band and chorus teachers assessing students properly.

Frank (2011) noted that music education in the United States had guidelines “objectives outlined in the National Standards for Arts Education as well as frameworks by many of the individual states” (p. 295). The National Arts Standards were designed and encouraged excellence within the educational structure (NCCAS, 2014, p. 4). The standards taught in music education classes in middle and high school were based on the National Standards for Arts Education.

1. Singing, alone and with others, a varied repertoire of music.
2. Performing on instruments, alone and with others, a varied repertoire of music.
3. Improvising melodies, variations, and accompaniments.
4. Composing and arranging music within specified guidelines.
5. Reading and notating music.
6. Listening to, analyzing, and describing music.

7. Evaluating music and music performances.
8. Understanding relationships between music, the other arts, and disciplines outside the arts.
9. Understanding music in relation to history and culture. (National Music Standards, 1994).

New modifications to the National Standards have changed the way musical concepts were presented in the classroom. The recent music standards took a two-year process, were released on June 4, 2014 by the National Association for Music Education (NAfME) with the National Coalition for Arts Standards, and were written by music educators (Ihas, 2015). Under the new standards there were four categories of which the previous nine standards were grouped. According to Ihas (2015) there were initially three processes proposed by NCMS but a fourth had been added: 1. Create 2. Perform 3. Respond 4. Connect. In the state of Tennessee code §49-6-1025 represented the arts and music for K-8 required “all public schools to include art and music education to help each student foster creative thinking, spatial learning, discipline, craftsman and the intrinsic rewards of challenging work” (Tennessee Department of Education, 2018, p.1). The Tennessee Portfolio System initiated the four domains in 2011 and the standards were revised for content specific areas by the 2016 Standards for Arts Education (Tennessee Department of Education, 2018, p. 3).

Foundations
<p>P=Perform (Music, Dance, Theatre); Present (Visual Arts); Produce (Media Arts)</p> <ol style="list-style-type: none"> 1. Select, analyze, and interpret artistic work for performance/presentation/production. 2. Develop and refine artistic techniques and work for performance/presentation/production 3. Convey and express meaning through the performance/presentation/production of artistic work.
<p>Cr=Create</p> <ol style="list-style-type: none"> 1. Generate and conceptualize artistic ideas and work. 2. Organize and develop artistic ideas and work. 3. Refine and complete artistic work.
<p>R=Respond</p> <ol style="list-style-type: none"> 1. Perceive and analyze artistic work. 2. Interpret intent and meaning in artistic work. 3. Apply criteria to evaluate artistic work.
<p>Co=Connect</p> <ol style="list-style-type: none"> 1. Synthesize and relate knowledge and personal experiences to artistic endeavors. 2. Relate artistic ideas and works with societal, cultural, and historical context. <p style="text-align: right;">(Tennessee Academic Standards for Fine Arts, 2018)</p>

Figure 2. Tennessee Academic Standards for Fine Arts, 2018

Data from a National Educational Longitudinal Study of 1988 showed a correlation between school music groups and Math and English (Broh, 2002). The state of Ohio Proficiency Test (OPT) was conducted with over 15,000 students in grade levels 4th, 6th, and 9th grade within

the same content areas and socioeconomic status; the students that took instrumental music tested above non-instrumental music students in every subject and grade level tested as a result (Fitzpatrick, 2006). There were improvements in the state of Florida academically due to participation in school arts where students had higher grade point averages and scores on the Florida Comprehensive Assessment Test (FCAT) and math and verbal part of the SAT (Kelly, 2012).

Many studies have noted that music influenced and inspired people (Batur, 2016, p. 83). According to Brown (2017) having learned vocal music such as the solfege (do-re-mi) helped children excel past their alphabet. Playing music had more to do with singing or holding an instrument but taught various abilities (Brown, 2017). Singing in choir helped students with their pronunciation of words and diction. According to the Arete Music Academy (n.d.), students who studied music had an extended vocabulary and read on a higher level than students who did not study music.

Studies have shown that playing an instrument at an early age helped the brain develop and maintain focus with other subjects such as calculus (Scientific American, 2010). The Midland Chemist (2005) indicated nearly 100% high school student as past winners of the Siemens Westinghouse Competition in the content areas of math, science, and technology of played more than one instrument. As a result, the Siemens Foundation hosted recitals at Carnegie Hall and displayed the talents of the students in 2004 initiating a debate for some as to the validity of the relationship between music and science (Midland Chemist, 2005).

Conclusion

Metacognitive Skills (2006) gave teachers some questions that evoked the thinking process in the classroom such as the following:

What did we learn today?

How will you use what we are learning outside of class?

Why are we practicing “X”? How will it help you? (p. 54).

Participation in music has been shown to evoke the thinking process, as Gardner cited in his *Theory of Multiple Intelligences*, “the cultivation of music intelligence is mainly by music creation, rhythm exercising, pitch training, background music activities, singing and ballad” (Wattanborwornwong & Klanvinitchai, 2016, p. 302). Studies conducted have indicated that listening to music while writing evoked cognition in the writing process and caused students to write more words in their essays compared to students with no music (Batur, 2016). Americans for the Arts (2013) cited that the dropout rate of students within a low socioeconomic status was 4% for students involved in the arts compared to 22% of their peers with a low participation in the arts in school (p. 5). The repetition taught in music class could potentially help with brain cognition and academic achievement, as “music training is based on teaching and constant practice of non-verbal structures such as classical sheet music, while reading is verbal” (Cogo-Moreira, Branda de Avila, Ploubidis, & de Jesus Mari, 2013). Longitudinal studies have shown that participation in music increased scores in the content areas of math and reading on standardized testing for some states. Analysis of tests conducted in Nashville, Tennessee by researchers Johnson and Eason according to Woodard (2014) showed that students who were involved in music programs scored higher than their classmates on every aspect of the test such as “grade point average, graduation rate, ACT scores, attendance, and discipline referrals”. Yet despite these potential benefits, Colwell (2008) reported that while teachers felt better about adding music into their core objectives, they were still not comfortable with full integration of music in their content subject areas.

CHAPTER THREE: METHODOLOGY

Introduction

This study examined the number of years of participation in band or chorus as it related to the academic achievement of high school students. Using years of participation helped to set aside the difference between formal music instruction student and non-formal music instruction students. Educators could benefit from the information obtained in this study and gain a better perspective on the impact of student academics and the possible relationship. School leaders could apply the results of the study and determine if participation in band or chorus has had a positive or negative impact on student academics from the student self-reported grade point average and survey responses to make changes to professional development, intervention, and professional learning communities (PLCs) regarding the content area of band and chorus in relation to other content areas. Policy makers could examine the data obtained from the study and evaluate if appropriate support has been given for band and choral programs in the district to help facilitate the planning of instructional needs of teachers.

Music participation resulted in increased cognitive development in the areas of abstract reasoning, spatial-temporal reasoning and full brain processing. The process of naturalistic inquiry that sought an in-depth understanding of social phenomena within their natural setting relied on the direct experience of human beings as meaning-making agents in their everyday lives versus what made the experiences of human beings (Health University of Utah, 2017). One way this wonder of the natural phenomena was emphasized was around the arts. Culturally music called to the inner psyche of all human beings. Due to those histories and relationships,

humans could not be studied as isolated units, but had to be understood in the context of the world they lived in or cultural and social connections.

Description of Research

The design for this study was a mixed methods style of research that looked at the quantitative data between music credits and grades acquired by senior students over four years of high school, and the qualitative data of the students' perspectives. For example, each semester the student acquired half a credit for participation in band or chorus. Therefore, participation in band or chorus for two years would equal two credits. Interviews were conducted with students with the highest, middle, and lowest results (grade point average) as open-ended questions to ascertain what opinions they had about their own academic successes and influences.

The researcher analyzed the relationship between GPA and number of music participation credits as determined by the Music Participation Questionnaire (MPQ). A Pearson r correlation coefficient was used for analysis. The Pearson r was used to study the intensity of the relationship between GPA and music participation. A t -test was used to compare the GPA means of the students who participated in music classes to students who did not participate in music classes. The following research questions and corresponding null hypotheses were answered with the data that was collected.

Research Questions and Null Hypotheses

RQ1. Is there a relationship between the number of music courses taken by a student and their grade point average?

Ho1. There is no significant correlation between the number of music courses taken by a student and their grade point average as indicated by the Music Participation Questionnaire.

RQ2. Is there a significant difference between the GPAs of students who take music courses verse the GPAs of those who do not?

Ho2. There is no significant difference between the GPAs and number of music classes taken.

RQ3. What are student perceptions about that possible relationship between the number of music courses taken by a student and their grade point average?

Ho3. There is no direct association between years of music participation and having and overall effect on student grade point average as indicated by the Music Participation Questionnaire.

Description of the Study Participants and Setting

Participants in the study were high school students from a rural high school with an enrollment of approximately 900 students. The study consisted of 150 high school seniors; their participation in the study was based on a volunteer basis. There was a non-music student (experimental group) in the study and music student's instrumental or vocal (control group) in the study. There were no changes made to the classroom instruction during the study. Consent forms to participate in the study were given to students for parental permission regarding confidentiality and accessing student test information.

Data Collection Procedures

The research proposal was approved by the researcher's dissertation committee and the researcher applied for permission to conduct the study from the members of the Carson-Newman Institutional Review Board (IRB). One week prior to the collection of data, each student in the senior class was given a parent/guardian consent letter that explained the purpose of the study (see appendix). The time frame for returning the consent letter was one week. The consent letter

was signed for the student to participate in the study by the parent or guardian. Participants were only the students to return the signed parent/guardian consent letter.

Participants were administered the Music Participation Questionnaire (MPQ) using an online survey. The MPQ took place at the beginning of the research. Participants were administered the Music Participation Questionnaire using Survey Monkey. Each student received a participant number which was utilized through the online survey. The Music Participation Questionnaire was created to assess the response of participants about their experiences in music classes and the participants spoke freely to the researcher. These questions were open-ended prompts.

The researcher entered all quantitative data into the Statistical Package for Social Sciences (SPSS) software. The research data that was collected from the MPQ was compared to the number of music classes using SPSS software to create descriptive statistical reports.

Data Analysis

The data from the MPQ was analyzed for quantitative and qualitative responses about experiences in and outside of music classes. Students' open-ended responses to the qualitative questions were analyzed, coded, grouped, and organized into emerging themes. Potential limitations of the study included: The results of the online survey varied to an extent of being too different to associate with the measures of student achievement, some high school students in the study not answering or understanding the survey questions, and students declining to respond.

The study was limited to high school seniors and their participation in instrumental or vocal music in high school over a four-year time span. The academic achievement of the other class groups in comparison was not the scope of this study. The quantitative data focus of the study was the individual grade point averages of the participants', assessing for any changes

before and after the number of acquiring credits in instrumental and/or vocal music credits, in comparison to other senior students. The study also used GPAs of seniors to determine if there was a relationship within grades academically between freshman year and senior year, before and after enrolling in band or chorus classes, compare the grade point averages of students not enrolled in band or chorus, and looked at the grade point averages of students involved in music activities outside of the school setting.

Research Question 1

The data was analyzed by using a Pearson r coefficient to measure a correlation between two variables. The collection of data was to establish a correlation of a possible relationship of years spent participating in music and student's GPA. The self-reporting grade point averages were entered in different graphs for comparison for association.

Research Question 2

A paired t -test was used to compare the two groups in the survey study for association between grade point averages within the number of music credits taken; data was entered on a graph for analysis. A cross comparison then also arose from breaking down the participation of music activities outside of the school setting versus inside the school setting within the study to see results.

Research Question 3

The researcher used a general qualitative approach by comparative analysis to uncover patterns and themes within the open-ended question from the MPQ data. The previous research question was the "What" of the study. Now the researcher had established who, when and how. The researcher started with a contextual inquiry framework and looked for similarities and differences in questioning patterns. With focus being centered on the research question, the

researcher divided responses into three categories: 1) music participation, 2) non-music participation, and 3) how music affected the lives of both music and non-music participation groups. Participants shared a reason why or why not music participation was important to them on a personal level and paid special attention to the decisions on the conceptual questioning framework in the when asked in the MPQ open-ended questions. The MPQ focused upon their music participation and connection with the participants' grade point average. The researcher acknowledged that the gathering of the information from the MPQ was a foreseen challenge. Giving special attention to the narrative tools of analysis of the participants' responses and the reconstruction of that content to represent the participant's voice, as an unobtrusive observer the research had little impact on the participants. Through the process the researcher created a system for analyzing the collective data for actionable insights. The researcher reported data in an inverted pyramid that started with the most important and used triangular method that established external validity.

Summary

The mixed methods approach examined student data about music education being included in a high school level curriculum. In primary and middle education, classes were preselected due to the set curriculum aligned by the state standards. Therefore, students decided which classes they took once they left middle school and entered high school. Once students entered the ninth grade, they registered for their courses that pertained to the career path that they chose. No matter which career path was chosen, a fine arts credit was required to graduate. The students had the choice of deciding from music, dance, theatre, and visual arts. Students were required to attend these classes and pass them successfully if they were to progress to the next grade level.

Studies have shown that students who took music education excelled in other core academic courses. These results have been seen through various test results such as reading achievement scores, mathematics achievement scores, ACT scores, and student grade point averages. The concepts that were studied in music education helped to aid in the engagement and understanding of core academic studies. The components included in music education were: theory and practical knowledge, history, analysis, and time periods. The components learned from music education could lay a foundation or act as a link for greater understanding, thus the reason for students to excel in other academic courses.

CHAPTER FOUR: RESULTS OF DATA ANALYSIS

National high school graduation requirements placed little emphasis on the content area of fine arts. With the minimum expectations set at one credit, high school students had the choice of selecting their classes and band and chorus had been optional. Participation in band and chorus in the school setting improved motor skills, reading, math, and visual skills and linked the content area of music to the multiple intelligences (Helding, 2010). Research conducted in music participation and brain cognition displayed positive results in some student test scores when compared to those not participating in music. States such as Tennessee, Florida, Ohio, and Georgia performed research to ascertain whether there was a relationship between participation in music and student academics; each state saw improvement in student grade point average and state testing for music participants in comparison to non-music participants within each group sample (Fitzpatrick, 2006; Kelly, 2006; Woodard, 2014). There has been minimal research conducted to determine if a direct relationship existed between the years of music participation and student academics.

RQ1. Is there a relationship between number of music courses taken by a student and their grade point average?

Ho1. There is no significant correlation between the number of music courses taken by a student and their grade point average as indicated by the Music Participation Questionnaire.

High school seniors from the same school in Tennessee participated in the study ($N = 74$).

Students were grouped based on their responses as to whether they participated in band or chorus

during high school ($N = 35$) or not ($N = 39$). Students were also asked to provide how many years they participated in music, both inside and outside of school (see Table 1).

Figures 1 and 2 demonstrate the number of students that participated in either band or chorus in high school and the number of years of participation both in and outside of the school setting. Although a little over half of the students ($N = 39$) that participated in the study reported no participation in band or chorus in high school, majority of the students ($N = 53$) reported at least one year of participation in a music activity outside the school setting for a period of at least one year or more.

STUDENTS PARTICIPATING IN MUSIC
IN AND OUT OF SCHOOL:

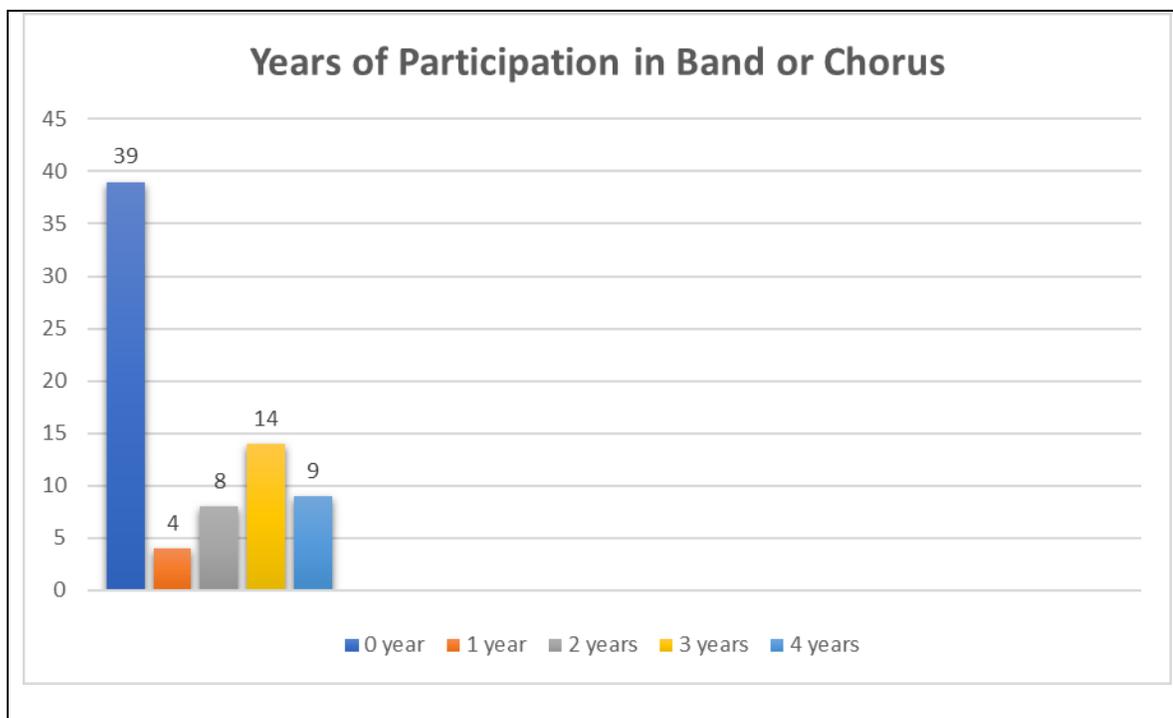


Figure 3. This table describes the number of years the participants participated in band in chorus. The years as follows: 0 years (39) participants, 1 year (4), 2 years (8), 3 years (14), 4 years (9).

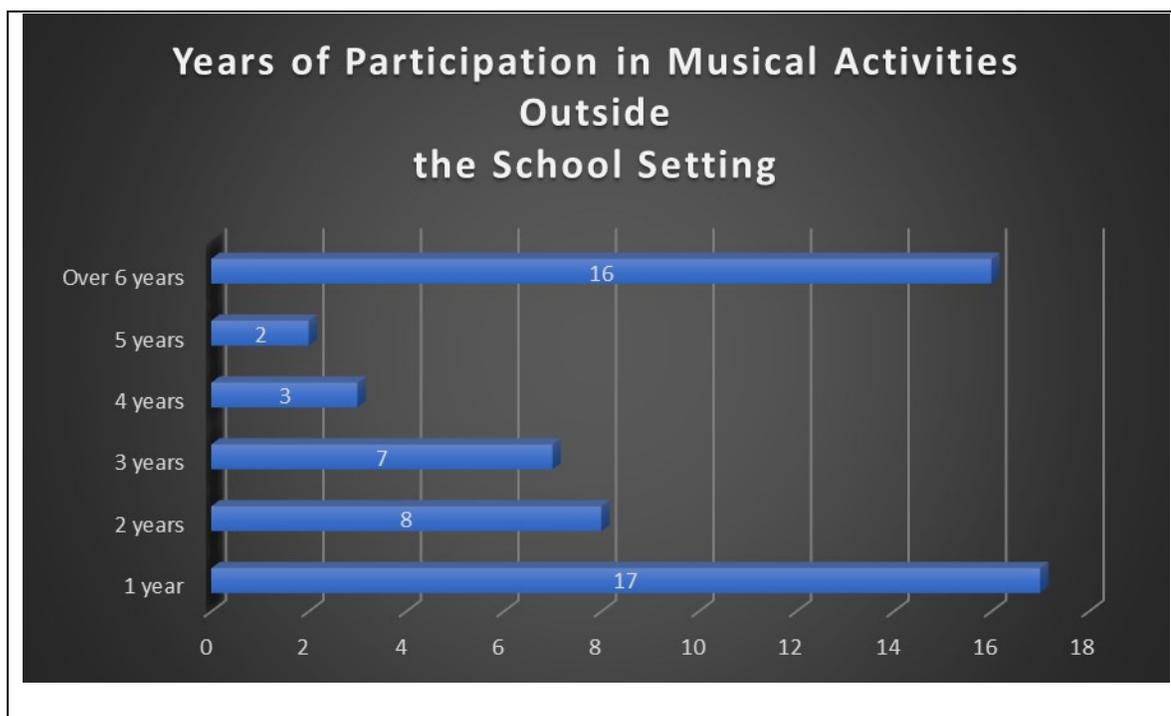


Figure 4. This table describes the years of participation in musical activities outside the school setting. Years of participation: 1 year (17), 2 years (8), 3 years (7), 4 years (3), 5 years (2), over 6 years (16).

Table 1

Descriptive Statistic

Participants	Mean	Std. Deviation	N
Years in Band/Chorus	1.3108	1.53432	74
Student GPA	3.2713	.43098	74

To determine if any relationship existed between students' years participating in band or chorus and grade point average, the researcher conducted a Pearson r product-moment

correlation to see if any relationship existed between high school seniors' GPAs and the number of years they participated in band or chorus in high school (see table 2).

Table 2 shows the results derived from Pearson r product-moment correlation. All the coefficients appeared to have had an absence of correlation at a 0.05 significant level; confirmed by the table of the p -values <0.0001 . Based upon these results, there was not a significantly high standard deviation between music participant and non-participant grade point averages meaning no correlation existed between years in band/chorus and GPA (see table 3).

Table 2

Correlation Between GPA and Years of Participation in Music

Variables	GPA	# of Years Participated
GPA	0	< 0.0001
# of Years Participated	< 0.0001	0

Table 3 shows no direct correlation between the number of years of participation in band and chorus and the grade point average. The average year in band or chorus was one year for each participant of the study. The significance of variance on both sides from the test was .994.

Table 3

Correlations

		Years in Band/Chorus	Student GPA
Years in Band/Chorus	Pearson Correlation	1	-.001
	Sig. (2-tailed)		.994
	N	74	74

Student GPA	Pearson Correlation	-.001	1
	Sig. (2-tailed)	.994	
	N	74	74

RQ2. Is there a significant difference between the GPAs of students who take music courses verse the GPAs of those who do not?

Ho2. There is no significant difference between the GPAs and number of music classes taken.

To determine if differences existed in the grade point averages of students in band or chorus, the researcher conducted an independent samples *t*-test (see table 4). A Kolmogorov-Smirnov test with a Lilliefors Significance correction was conducted by the researcher and determined the data to meet the assumptions of normality ($p = .05$). However, there were no significant differences found in the GPA between students who took music courses and those who did not.

Table 4 demonstrates no significant difference existed between the mean grade point average of students that participated in band or chorus compared to non-band and non-chorus students.

Table 4

GPA Group Statistics

Participants	N	Mean	Std. Deviation	Std. Error Mean
Band/Chorus	43	3.2672	.48883	.07455
No Band/ Chorus	31	3.2769	.34261	.06153

Qualitative Open-ended Questions with Responses

The senior class of a Title I rural high school contained approximately 900 students were asked to voluntarily participate in the research study. The researcher purposefully asked the senior class to participate due to the focus of the study. The researcher was in contact with the participants after receiving Institutional Board Approval May 2018, and research began one week after parental consent forms had been returned in writing. 74 out of 150 seniors volunteered to answer ten questions online and through one-on-one interviews with the researcher regarding music and academics, and each participant was assigned a number and an online link to complete a Music Participation Questionnaire after returning the parental consent form. This is the qualitative analysis of the open-ended questions from the MPQ and individual interviews.

RQ3. What are student perceptions about that possible relationship between the number of music courses taken by a student and their grade point average?

Ho3. There is no direct association between years of music participation and having and overall effect on student grade point average as indicated by the Music Participation Questionnaire (MPQ).

“Music helps with focus.”

Focus was the main response regarding music how music played a role in their academic success. Majority of the participants said that music helped them to focus on their studies. Participant 25 stated, “Helps me to focus enough to do my work.” During the individual interview, another participant stated, “It helps me focus more on school work.” For

reclarification value, I restated the question to be sure we were speaking on the same terms.

Question: So, music helps with your focus? Yes ma'am.

“Music and brain cognition.”

Student perception of music and intelligence during the MPQ was very detailed and descriptive. Listening to music has helped many participants with their grades in the perspective of helping them study as a means concentration, discipline, multi-tasking, and memorization. A consistent response to music was that it gave one more knowledge.

One participant stated, “I’ve learned more about patterns and how they relate to each other” (Participant 13). During the individual interviews, another participant noted participation in music placed emphasis on brain cognition through helping with memorization. The use of high order thinking was given as a response to a question regarding music and academics by one participant which included the multiple intelligences within the response.

Question: What elements in music do you feel have transferred to your academics? “Um with dealing with learning the music and counting rhythms and remembering it and marching and putting all that together it’s helped me with memory and just becoming an overall better student.”

“Music experiences evoke emotions.”

Experiences in music could have a lifelong impact on anyone. When asked about a memorable music experience, some participants had trouble identifying with a moment in time while other participants recalled live concerts, singing in the shower, attending parties, singing solos, going to school events, participating in competitions with school groups, and playing musical instruments.

Participant 25's response was, "When I first met a famous producer in a studio." The importance of that moment helped guide Participant 25's decision to continue in music as a profession. Participant 8 explained in detail why getting his/her first solo was so important to at that time of their life. "Getting my first solo and being the lead" (Participant 8). "It gave me pride that here I was leading something that I worked hard on learning." Participant 53 stated, "My favorite musical moments are the first field shows of the year and the sense of community performing in the stands at the football games." Then, Participant 53 went on to clarify that "Nothing is more exciting then pumping up the crowd at a football game." Participant 47 started playing guitar a few years ago, but his/her favorite memories were centered around playing music in their room alone. However, the next participant had a different point-of-view to his/her memory. Participant 35 continued with the emotions of excitement and how their heart started to beat faster but their breathing seemed to be deep and satisfying when they were about to sing. "I believe it's when I have a solo in front of a huge audience" (Participant 35).

"Music develops abilities."

In response to whether participation in band or chorus had helped in other areas of their life, the responses were generally positive in the research study. The students that participated in band or chorus said music has helped with their coordination, communication, leadership skills, knowledge, and focus.

"It made me look at music differently. Music has strongly influenced me over the past couple years now I am getting a better feel of this whole musician life," said Participant 1. Participant 34 felt that, "It helped me out in tennis because it gave me more coordination and rhythm." Socially music classes have helped some students as reported by Participant 52, "It has helped me come out of my shell and be more outgoing. It has also helped me grow out my

leadership skills.” Band and chorus allowed students to broaden their horizons, “Gives you different opportunities and it takes you different places if you keep your mind focused on it” (Participant 66).

“Music and academic conflict.”

The issue of scheduling and taking band or chorus was a problem for many high school students. During the study, several of the participants responded that wished they could have participated in music while they had attended high school; they mentioned they had scheduling conflicts due to sports and other academic endeavors (Junior Reserves Officer Training Corps, JROTC). However, some students did not take band or chorus because of lack of musical talent or interest. Several of the participants that were in music expressed an interest for furthering their music career in the music industry and becoming better musicians in the future.

“I would sign up for band or chorus even if I never played” (Participant 74).

One-On-One Interview

Individual interview participants were interviewed further based on their open-ended questions and grade point average. The researcher interviewed the participants with the highest, middle, and lowest grade point averages from the MPQ for further inquiry from the responses of the open-ended questions.

The participant with the lowest grade point average was in band and chorus concurrently for two consecutive years. This participant admitted to playing around in his/her core academic classes which resulted in having a low-grade point average. The participant wished that they had paid more attention at the beginning of their high school academic career. When asked about the benefits of band or chorus, the participant believed the courses helped with self-improvement.

Question: Have you found participation in band or chorus to be beneficial? “Yes, very I have grown to become I wouldn’t say not a great musician but a good musician”. The participant used music to complete classwork. Question: Do you feel the elements that are taught in band or chorus have helped you to be more studious? “Yes. It helps me to relax.”

The participant with the middle grade point average was inspired to join the band when they first heard the high school drumline practicing outside when they were in middle school and learned to play the trumpet. The participant believed that participation in music helped to improve your memory and focus.

“Because in music it’s a lot of things you have to do as far as counting and getting to your spot remembering and counting rhythms things of that nature, it applies it can also apply in your math class and also it gives you a great focus”. The participant believed that participation in music transferred to learning, “Um with dealing learning the music and counting rhythms and remembering it and marching and putting all that together its helped me with memory and also just becoming an overall better student”. Music has helped the participant become person and improved his/her behavior.

Question: Prior to you studying music what kind of student were you academically? “I was alright because I do a lot of talking and stuff in class, but it has improved when I did come in band when I did decide to push myself more and decided to get in honors classes because in middle school I really wasn’t in those type of advance classes just in regular class but after I got in music my academics seem to increase”.

The participant with highest grade point average, that was interviewed by the researcher, grew up playing instruments and singing. In addition to joining band in middle school, the

participant participated in both band and chorus concurrently all four years of high school. In addition, the participant played the piano and sang in the church choir. The participant stated that participation in music promoted character.

Question: What elements of band or chorus class do you feel transfer to your other academic courses? “Just discipline and being on time.” The participant did note that participation in music helped with focus in school, “Just being attentive and having to be here the importance and giving and extra effort to come to school really.” The participant stated that music had no impact on their academics. Question: Prior to coming to high school, how were your grades? “They have always been good, maybe one B”.

Summary

Although no relationship existed between the number of music classes taken and student grade point averages of music and non-music students in the study, there was an increase in number of years of involvement in music activity outside of the school setting. In addition, the student perceptions of the qualitative analysis gave deeper insight on how music may or may not have had an indirect effect on their academics.

CHAPTER FIVE: FINDINGS, IMPLICATIONS, AND RECOMMENDATIONS

Music has been a part of education since the 18th century. Lowell Mason wrote the Manual of Instruction in the 19th century for music education; it was then adopted by all schools and used as the standards for the music curriculum (Standard, 2012, p.2). Music programs such as band and chorus in the high school setting gave students the opportunity to read, count, play, sing rhythms, and utilize both parts of the brain. High schools had only required one credit in fine arts as the standard graduation requirement. As a result, the emphasis of learning has shifted to testing and core content areas such as math, reading, science, and history. In addition, high school students had a choice as to what fine arts classes they took, and many students did not take band or chorus in high school. However, participation in music could have helped with brain development and increased student academics. Playing instruments in band and dancing in show choir utilized the motor skills of the multiple intelligences as emphasized by many researchers. Silverstone (2018) noted new evidence that suggested part of the brain that controlled both music ability and language comprehension had more in common with one another. Biasutti & Concina (2014) cited learning music nurtured mental and personal attitudes which were important for the overall learning process. Some states conducted research studies to establish if there was a relationship between participation in school music programs and student academic scores on state testing results and showed some positive results with students participating in music compared to non-music students. Despite some research and improvement on student test scores and grade point averages, a direct relationship between music participation student academic scores had not been clearly established (Boyd, 2013).

The school that opted to participate in the study had access to computers, in addition to the use of participant personal cell phones, of which to take the Music Participation

Questionnaire. The purpose of the study was to bridge the gap between music education and other content areas in education by providing more research in music. Seniors were selected to participate in the research study; each participant was given a consent form prior to beginning the study. Of the 150 seniors, 74 voluntarily participated in the online survey study ($N = 74$). The seniors answered questions giving their opinions concerning the influence of music on their personal life, student involvement with music, years involved in music, and music and intelligence. The MPQ consisted of an online survey and one-on-one interviews of random participants within the study depending on the self-reported grade point average of each participant. The questions were conducted online after each participant returned the voluntary consent form and were then assigned a number and online link to complete the MPQ. The MPQ included both quantitative and qualitative questions to obtain information regarding student perceptions about music participation and academics. Additional qualitative data was collected through one-on-one interviews to acquire more purposeful information and data by allowing the participant to further discuss the questions on the questionnaire.

The seniors' questions helped to answer the main questions of the study:

1. Is there a relationship between the number of music courses taken by a student and their grade point average?
2. Is there a significant difference between the GPAs of students who take music courses versus the GPAs of those who do not?
3. What are student perceptions about the possible relationship between the number of music courses taken by a student and their grade point average?

Findings

A Pearson r was conducted for Research Question 1: Is there a relationship between the music credits received by a student and their grade point average? To ascertain if there was a relationship between the two variables of the research question in which the test returned no significant p value accepting the null hypothesis, the participants were grouped based on their responses as to whether they participated in band or chorus during high school ($N = 35$) or not ($N = 39$). The participants were also asked to provide how many years they participated in music, both inside and outside of school the setting. The results of the student response showed there was no significant difference between the two groups of music participants and non-music participants regarding music credits and the student grade point average.

An independent samples t -test was conducted to examine the results of Research Question 2: There was a minor difference between the grade point averages of both groups of students who had taken band or chorus and those who had not. Therefore, the researcher conducted a Kolmogorov-Smirnov test with a Lilliefors Significance correction and determined the data to meet the assumptions of normality ($p = .05$). This resulted in no significant differences in GPA between students who took music courses and those who did not and accepting the null hypotheses that there is no significant difference between student GPAs and the number of music classes taken.

Patterns and concepts were identified during the interview and online survey responses for Research Question 3: What are student perceptions about the possible relationship between the number of music courses taken by a student and their grade point average? Respondents answered consistently that music helped them to focus, study, obtain more knowledge, become more coordinated, and helped with their socialization skills. The interviews went more in depth

from the online survey to gain more understanding of student perceptions of how music impacted academics. Interviews were conducted with the participants within the online survey study that reported the highest to the lowest grade point average (#54-4.3 GPA, #1, 3.3 GPA, #64, 2.5 GPA). Respondents from the one-on-one interviews felt that participation in band or chorus motivated, gave them direction, and helped them to focus.

Discussion and Implications

Years of Participation. Student responses were categorized based upon years of participation in band or chorus and grade point average. The Pearson r confirmed the results that student grade point averages were not associated with the number of years of participation in band or chorus. Of the group sample of $N = 74$, 43 took band or chorus and 31 did not. The Pearson r also showed the average number of years of participation in band or chorus was 1.3108 years. There was little variance in the grade point averages of those that participated in band or chorus and those that did not from the results of the independent samples t -test (Band/Chorus 3.26, Non-Band/Chorus 3.27). Although, more participants reported involvements in music activities outside of the school setting.

One significant factor noted from the study was that 50 of the participants reported having been involved in music activities outside of the school setting at least one year. In addition, the average amount of years of participation in music activities outside the school setting was two years in comparison to the high school setting and majority of the participants had at least 1-6 years of prior music instruction except for 24 participants who did not. This implied that students had been more involved in music activities outside the school setting because they offered more variety and flexibility. In addition, students had also participated in activities both in and outside of the school setting because it peaked their interests and enhanced

their talent and abilities. This also implied that exposure to music during the early years had a more indirect effect on student intelligence and had a long-term effect when it is consistent as opposed to when starting at a later age.

Based on the self-reported GPA of 3.2 and the average music credit received of one year, the students had possibly taken band or chorus to experience the class as a fine arts credit during their time in high school. Although majority of the group sample that was enrolled in band or chorus took it for three years, there was still not a significant difference between non-music participants in the group sample. In addition, the open-ended response portion of the research study revealed that music participation helped the students to focus, improved social skills, built leadership skills, improved memory, and was used for entertainment purposes/performance. This resulted from classroom instruction, course curriculum and standards, and students being given grades for participation. Music curriculums should, therefore, be revisited to explore the context of what is being taught to assess that students are truly learning interdisciplinary skills of the multiple intelligences that transfer to all content areas.

Content. Conceptually, student responses regarding music and intelligence yielded a positive result with 73% compared to 27% believing music makes one smarter. The individual student responses of the survey were utilized to reinforce this concept and ascertain in what ways music played a role in the lives of the student participant. Music was used for studying, religious purposes, forms of entertainment, sport, making friends, and furthering academic endeavors by the participants.

Conclusion

The goal of this study was to obtain more insight that could be useful for the content area of music within the fine arts department. Although, analysis was not enough to determine a

direct relationship between participation in band or chorus and grade point average, this research added to a body of knowledge regarding music and academics. Student input and data from this research study could be utilized along with information from previous studies for the benefit of music and brain cognition. In addition, the data from the years of involvement in music prior to high school could be included as prior knowledge to contribute to the development of the multiple intelligences.

Recommendations for Further Research

It is important to continue research in music education and student academics. This study focused only on the senior class but in the future, it could include a control group of both music and non-music participants starting in the ninth grade. The study would survey the progress of the students each year academically until their senior year of high school for comparison, this will give more validity to the research over time. Factors that may affect the research may include school transfers or withdrawal from the study at any time. Little resources are available regarding music concepts and their links to learning in the classroom. The student responses from this research study imply that music has had an impact on education and the multiple intelligences through motor skills, visual skills, and thinking critically. More research in this area of study would add to previous data and improve music content knowledge.

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Appendix A

Appendix A

Informed Consent for Participation in a Research Study

Title of the Project: Music Participation and Academics

Purpose of the Project: To further the tenets of overall academic achievement in music education assessment, the purpose of this narrative study is to examine a student's perceptions of the role of music participation in student achievement (grade point averages and student questionnaires) at a majority-Black school district in Tennessee.

What you will do: Your participation in this research study would include completing an online questionnaire and a one-on-one interview. These interviews will be conducted on school property during a designated time appropriate for the participant and interviewer. Interviews will last approximately 30-60 minutes. You must be a high school senior to participate in the research and a resident of the state of Tennessee to participate in this research.

Your rights to participate: Participation in this research project is completely voluntary. You have the right to say no. You may change your mind at any time and withdraw. You may choose not to answer specific questions or to stop participating at any time. Whether you choose to participate or not will have no effect on your relationship between you and the researcher(s). Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled.

Costs and Compensation: There is no cost or compensation offered to be in this research study.

Confidentiality: Your confidentiality will be protected to the maximum extent allowable by law. Your personal data will not be used in any publications or reports obtained from this interview; your confidentiality as a participant in this research study will remain secure. Pseudonyms will be used for the participant. Generic geographical designations

will mask the specific location where you live/work. Subsequent uses of records and data will be subject to standard data use policies, which protect the confidentiality of individuals and institutions. All records of the study will be kept private. Nothing will be included to identify any subject in any material that may be published. The research records will be stored securely where only the researcher has access. The administrator will have access to the student questionnaire data once they have been completed by students along with the Superintendent of schools. The questionnaires will be codes and names deleted to maintained confidentiality. No person, other than the principal or Superintendent of Schools will have access to identifying information at any time.

Risks for the participant: Majority the questions will be about your school experiences, so the risk of serious psychological harm is extremely small. There is no physical risk involved in participation. As all data will remain confidential, therefore no social, legal, and economic risk is involved.

Benefits for the participant: An examination of how students' perceptions of assessment could help clarify or illuminate the variations of teacher assessment practices and/or offer insights to the greater educational community not previously considered.

Contact information: If you have questions or concerns about this study, such as scientific issues, how to do any part of it, or to report an injury, please contact the researcher: Dumanic Patterson, Researcher (731) 772-1845 or dumanic.wade@hcsk12.net
If you have questions or concerns about your role and rights as a research participant, would like to obtain information or offer input, or would like to register a complaint about this study, you may contact, confidentially if you wish, Carson-Newman Review Board

Audio recording: All interviews need to be audio recorded for the researcher to obtain accurate transcriptions of all conversations. Therefore, audio recording of interviews are a required part of the research process. Please indicate below whether audio recording of interviews is acceptable:

I agree to allow audiotaping of the interview(s).

____ Yes ____ No Initials _____

Your signature below indicates your voluntary agreement to participate in this study.

Participant's name (printed) _____

Participant's signature _____ Date _____

You may keep a copy of this consent form for your records.

Dumanic Patterson, Researcher
P.O. BOX 10582, Jackson, Tennessee 38308
Or email at dpatterson@cn.edu

Carson-Newman Review Board
1646 Russell Avenue, Jefferson City, Tennessee 37760

Appendix B

Appendix B

Music Participation and Academics

1. Are you currently enrolled in band or chorus?

_____ YES _____ NO

2. Including this year, how many years have you participated in band or chorus in high school?

0 years

1 years

2 years

3 years

4 years

3. In what music activities do you participate in outside out high school besides band and chorus? _____

4. If you answered yes, how many years have you participated in music activities outside of the high school setting?

1 year ____ 2 years ____ 3 years ____ 4 years ____ 5 years ____ Over 6 years

5. If you did not take band or chorus in high school, do you wish you could have? Why?

6. How has participation in band or chorus helped you in other areas of your life? Why or why not? _____

7. What is your favorite musical moment? _____

8. Do you believe participation in band or chorus makes a person smarter academically?

Agree _____ Disagree _____

9. How has music played a role in your academic success?

10. What is your current G.P.A.? _____