

The Effects of Using Classical Music and Traditional Teaching Strategies on Student's  
Academic Achievement in a Selected Social Studies Class.

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Spring 2016

## Abstract

The purpose of this study was to examine the effects of classical background music during work times and assessments versus traditional teaching methods in an 8th grade Social Studies classroom. The study also examined the academic achievement of males and females when subjected to classical background music. The sample consisted of an experimental and control group. The experimental had nine students while the control had nine students. Data were collected using a teacher made pre-test and post-test. The experimental group was taught a unit with classical background music during class work time and during the post test while the control group had no background music and was subjected to traditional teaching methods. Data were analyzed using a one way ANCOVA. The results indicated there was no significant difference in academic achievement for students who were in the experimental group and in the control group. Two way ANCOVA results on gender when taught using classical background music indicated no significant difference on academic achievement. The results suggest that classroom teachers need to be selective in selecting background music during work time.

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## Chapter 1

### Introduction

Students in the 8th grade in Tennessee are required to take a Social Studies class. This class is focused on the content of American history from the colonial period up to the Civil War. This content is driven by the state standards of Tennessee and then delivered by the instructor to the students. Different strategies have been employed by educators to increase student learning and achievement, one of which has been the addition of classical background music played in the classroom when students are working independently. Research has indicated that there is a strong tie between students and music as a part of their culture. In responding to this research, this action research study was put forth to use background music in the classroom to determine if the addition of the music would promote higher levels of achievement (based on their assessment scores) as opposed to a classroom using only traditional methods of teaching (White, 2007).

The determination of which music to be used was influenced by research. There have been a number of studies that point to pieces composed by Mozart as having a direct link to increased student mental activity, cognition, and performance. There is also research that states that background music in a classroom setting can lower student anxiety, and with that lowered anxiety allow the students to perform better on assessments given. Research has also indicated that music that does not contain lyrics is more beneficial for students as opposed to music with lyrics. The belief in using music without lyrics is that lyrics might pose a distraction for the students. The belief that educators will naturally seek to improve the achievement levels of their students was also considered. With this in mind, this study used compositions by Mozart as the background music in the Social Studies classroom (Taylor & Rowe, 2012).

The majority of research has been done in the content areas of literature and mathematic based assessment, with supporting data to show a link with increased achievement for students. This problem has been addressed in those areas thoroughly, therefore this action research study sought to either verify a link in the field of Social Studies, or to find that there was discernable difference. The curriculum used was identical in both classes, and both classes were populated with students who were determined by the school administration to be of a similar level of achievement with one another, being deemed neither high nor low achieving. The assessments were not tested for validity against other Social Studies curriculum, but can be considered valid in that they were not altered in any way between the experimental group of students and the control group of students (White, 2007).

Researchers believe that background music during instruction helps the student's brain make new connections which help spark their inner creativity and memory. The more memorable a lesson is can equate to more student retention of knowledge and higher classroom achievement for the student. This research also influenced the putting forth of this study (Hailat, 2008).

The state of Tennessee in the Social Studies curriculum has increased the rigor and requirements of the students to reach a passing mark. With increasing expectations of students being brought forth by the state of Tennessee, any tool that can be of use to increase achievement should be considered by educators. The study was based around this central belief. There is a difference in achievement scores for Social Studies students in the 8th grade, the addition of classroom background music will have an effect on the level of achievement of those 8th grade students.

### Statement of the Problem

Research has shown a link to increased student achievement when there is classical background music used in the classroom (Taylor & Rowe, 2012). This is not a standard practice in all classrooms, and it has yet to be determined if achievement gains in mathematics while using classical background music will be the same if classical background music is applied to the social studies classroom. The problem of this study was to determine if there was an increase in student achievement when background music is played in a social studies classroom as opposed to a classroom using only traditional teaching methods.

### Purpose of Study

The purpose of this study was to examine the effects of the use of classical background music during work times and assessments versus traditional teaching methods in an 8<sup>th</sup> grade Social Studies classroom.

### Significance of the Study

The significance of the study was to provide data to either support or refute the use of classical background music in the classroom as a technique to increase student achievement.

### Limitations

The following were limitations encountered in this study:

1. The sample used for this study was not randomly selected and therefore results cannot be generalized.

2. The instrument used to collect data was designed by the researcher and not tested for reliability or validity against other assessments.

#### Definition of Terms

The following were definitions adopted for this study.

1. Achievement – The score on quizzes and a test given to both the control group and the experimental group.
2. Classical Music – Selections composed by Mozart.
3. Traditional Teaching Strategies – Teaching that is limited to text book, teacher lecture, note taking, and class work without the addition of classical background music.
4. State Standards – The curriculum guidelines set forth and approved by the state of Tennessee for classroom instruction content.

#### Overview of the Study

This study consists of five chapters. Chapter one consists of an introduction to the study, a statement of the problem, the purpose of the study, a statement of the significance of the study, the limitations of the study, definitions used in the study, and an overview of the study. Chapter two is the review of the previously published literature related to this study. Chapter three has the methodology and procedures, population, sample size, data collection instruments, procedures and research question. Chapter four refers to data analysis which includes the collection of data and the research question. Chapter five details the findings of the study, the conclusions of the study, the recommendations of the study, and the implications of the research.

## Chapter 2

### Review of Related Literature

This chapter presents a review of the literature that was relevant to the purpose of the study, which was to examine the effects of the use of classical background music during work times and assessments versus traditional teaching methods in an 8<sup>th</sup> grade Social Studies classroom. The review will focus on three subtopics related to the study. First, the use of music as a tool in the classroom to modify behavior. Second, the literature related to the use of music as an educational tool to increase comprehension. Finally, the relationship between music and achievement from other similar studies were reviewed. These topics lend to a better understanding of the need for further research into this topic.

#### **The presence of music in culture today**

Music surrounds the culture of the world today. It is used in advertising to promote and persuade the public toward certain products. Music is used in popular films and television shows to increase emotion, or generate a desired reaction from the audience. Shopping centers have music playing softly in the background, typically upbeat songs to promote good moods and a higher likelihood of spending money. Students can easily tell you which musicians are their favorites, and likely own an Apple iPod or have a smart phone full of their favorite songs and albums. It is a common occurrence to see students plug in their headphones and listen to music to relax during their down time. Music can also be an escape for students, who can be seen putting on their headphones to tune out someone or something that is bothering them. Vaajoki, Kankkunen, Pietilä, and Vehviläinen-Julkunen (2011) even found in a study that people recovering from abdominal surgery had a more quick and positive recovery when exposed to certain music. The subjects had lower blood pressure levels and a better rate of respiration.

With the prevalence of music in society today, and specifically the number of students who listen to it regularly, it is a potentially powerful tool for educators to use in the classroom. It has the chance to aid in behavior, in comprehension, and in student achievement (Vaajoki, et all, 2011).

### **Music and behavior**

Student's behavior can be adverse to the optimal learning environment. Outbursts, tantrums, and even physical altercations all take away from time the teacher can be delivering instruction. There is a link between improved behavior and the application of background music. The calming nature classical music can have on students in a work environment can help control problem behavior and keep students on task. Research supports that using classical music in the background of instruction or during independent work time has a positive effect on behavior and also productivity (White, 2007).

The addition of background music in the classroom can also decrease distractions for the students, thereby increasing their level of concentration. Common noises ranging from pencils tapping, pens clicking, general movement of desks, and even the ticking of a classroom clock can be drowned out by the addition of background music. The background music creates a sort of "white noise" that keeps the students from losing their focus on their desired task. It was determined that calm students had a higher level of focus, and that background music had a calming effect on the students (White, 2007).

In the study done by White, a group of ten fourth grade students had their behaviors observed during three weeks of class time while classical background music was played. The students were observed daily and the researcher recorded observations on their behaviors during class time, these were attributed to the background music. The students on task behavior,

productivity, and motivation were of particular note, in an attempt to answer the question of what ways background music could affect the students. The researcher also conducted brief informal interviews of the students throughout the study, to gauge their attitude toward music in the classroom. There was a strong relation found by the researcher between classical background music and motivation, productivity, and positive behaviors in the students. It was noted by the researcher that “the classroom environment was completely different, the music created an inviting, calm, and comfortable atmosphere that promoted the motivation to learn and stay on-task (White, 2007, p.25).”

There is a place for music in all classrooms. Hallam and Price did a study on the effects of background music when used on students with special educational needs. The students were a group of children who had both emotional and behavioral difficulties attending a school designed to accommodate that behavior. Initial observations of the group revealed to the researchers a large amount of disruptive behavior, ranging from tantrums and crying to physical aggression. All of the children studied had IQs that fell within normal limits. The music used was any music that had been shown by research to be calming. The trials were done daily, one week while using background music and the next without. The researcher recorded data on both behavioral outbursts and on the student’s scores in age-appropriate mathematics tasks. The students were reminded of the class rules daily, and the class expectations for behavior were the same both with and without the background music. A researcher was present throughout the study to ensure that the teacher did not change behavior and remained consistent toward the students (Hallam & Price, 1998).

The results of the study showed the students having a significant increase in their mathematics scores during the time that the background music was being played. The amount of

behavioral issues was also decreased by a significant amount. The researcher credited the increase in math scores to the effect the music was shown to have on the behavior of the students, allowing them to be calm and focused on their tasks at hand. Further studies were recommended to ensure reliability (Hallam & Price, 1998).

Music is not just a tool for the classroom in the school setting regarding student behavior. In a study by Ziv and Dolev, classical music was played for students during recess time. The study sought to determine if the music could have a reduction in the amount of instances of bullying among the students. The first and third weeks of the study the recess went on as normal, with no background music, while during the second week, classical music was played. The students responded with anonymous questionnaires about their experience (Ziv & Dolev, 2013).

The researchers found that there was a notably reduced amount of bullying instances during the week that the intervention of music was used. After the intervention was taken away again, the amount of bullying returned to the previous level before the intervention. The results of the study suggest that the effect of the background music on the students helped create a more positive environment and led to a reduction in aggressive behavior (Ziv & Dolev, 2013).

With the theory that music sets the mood for an environment Chalmers, Olsen, and Zurkowski performed a study to determine if background music played during lunch time would assist in controlling the student's behavior and generally quieting them. It was found that the noise level of students during lunch time was reduced 6 decibels by playing classical music, bringing the noise down to what was referred to as conversational level. The researchers also noted the amount of behavioral issues occurring during the times the music was being played was reduced by 65%. Nearly all of the students polled after the study indicated that they



preferred the background music to the alternative of no music during their lunch time (Chalmers, Olsen, & Zurkowski, 1999). There is a clear correlation to be made between improved student behavior and classical background music.

### **Music as an educational tool for comprehension**

In a landmark study, Hall (1952) used classical background music while administering the Nelson Silent Reading Test, parts A and B. Students were evenly distributed test parts A and B. Students that took part A with music then took part B without, and students that took part B with music then took part A without. A control group of students were given both parts A and B without music. Around 58% of the students showed an increase in their scores with the application of the background music. The researcher determined that the music's effect was not the result of increased intelligence, but that the music allowed the students to use the full extent of their capabilities (Hall, 1952).

An increase in comprehension is notable when music is employed. Music can be a powerful tool when used to help students increase their level of literacy. Using music helps literacy skills such as vocabulary, pronunciation, fluency, grammar, writing, and sentence patterns. Teachers also note that using music in their reading programs increases student motivation toward learning. Music in the classroom, for some students, will promote a recall to these strategies, and help with the link toward comprehension and reaching their educational potential (Frasher, 2014).

Music is a tool that has been employed by teachers for years to aid students in learning curriculum. Songs and rhymes aid in memorization of presidents, continents, and even states and capitols. School House Rock was a very popular tool that was available to students out of

school and provided them educational reinforcement during their regularly scheduled Saturday morning cartoons. Rhythm, with or even without musical accompaniment helps with the development of the brain's ability to recall information using rhythm. The student's make different connections to curriculum when it is taught using music and rhythmic devices (Purnell-Webb & Speelman, 2008). With these connections in place, the use of background music may lead to an increased chance this information can be recalled by the students, and increase their comprehension of material.

A reduction of student stress can lead to an increase in comprehension for the student. Many students use music as a way to cope with and escape daily stress. Classical music has been shown through research to have a positive effect on the level of stress and relaxation (Zhiwen, 2007). With this knowledge, educators can use classical music to reduce student stress during class time and with the reduction and distraction of stress, students will be able to have an increased focus on the curriculum and will demonstrate a higher level of comprehension of the content.

### **Music and Achievement**

The belief that there is a particular effectiveness to using the music of Mozart in the classroom for increased achievement has been around for over twenty years now. This "Mozart effect" states that listening to music composed by Mozart will somehow increase the intelligence of the listener. The original intent was to use the music of Mozart to aid the hearing impaired with retraining their ears and also to encourage brain development, and it has been skewed into a belief that the music will simply make the listener more intelligent. The effect of this belief has led in a positive direction toward attitudes about using background music. While Mozart in particular may not be the determining factor, there are several studies that do show an increase in

achievement when using classical background music in the classroom (Linton, 1999). The main focus was on a link between music and mathematics, which has been a generally assumed link and has been backed up with research (Vaughn, 2000).

A study by Taylor and Rowe tested the Mozart effect on undergraduate students in a trigonometry class. The students were assessed through six different trigonometry tests, and a control group was used that did not have the music played. The participants consisted of 128 aviation students. The researchers, to alleviate potential boredom from students hearing the same few compositions repetitively expanded the number of selections by Mozart. They sought to find out if there was a Mozart effect (positive assessment outcome versus no music) for students taking a trigonometry course (Taylor & Rowe, 2012).

The students receiving the background music had it played at a relatively low volume during each of the six assessments. The control group tested in silence. All students, control and experimental, were given the same instruction, the same homework, and identical assessments. The teacher did not mention the music, and if any of the students had inquired was prepared to offer them an alternate testing location if it was a distraction, to eliminate a Hawthorne effect. To ensure homogeneity in the control and experimental groups, SAT scores were compared and found to be of a relatively same mean. The results of the study showed that the students that had been exposed to the Mozart music during testing times had a higher mean score than those that tested in silence. It was determined by the researchers that listening to Mozart during test times was beneficial for the students and resulted in their scoring higher on the given assessments (Taylor & Rowe, 2012).

In Bloor's study in 2009, the researcher looked at using music only during assessment time in both math and language arts to determine if the music led to higher achievement scores

when compared to students who tested in silence. The students were in Year 5 in their curriculum. The researcher gave four tests in total, two each in mathematics and language arts. One of each of the assessments was given with music, while the other was given in silence. The students were unaware of the research being done (Bloor, 2009).

The findings of the study showed that the student's scores in language arts were increased when music was played in the background during the test. The findings were different in math, the students had better achievement scores in math when they took the assessment in science. The determination of the researcher was that the sample size may have made an effect, and it was recommended that the research be replicated to either verify or refute the findings (Bloor, 2009). The use of music during class work time may have also had a positive effect on the achievement level of the class, as opposed to just using the background music during the test. Using background music during instruction time may have been a distraction to the students, given the unfamiliarity they could potentially have with this change from a traditional structured setting.

A study was done by Hailat, Shargawi, Jawarneh, and Al-Shudaifat to determine if music used during instruction was an effective tool to increase the achievement level of the students on a selected test. Four schools were randomly selected to take part in the study, in a pool of seventy-four schools in Jordan. The test used contained twenty-four multiple-choice questions which were written from content in the 7<sup>th</sup> grade textbook, with the help of the materials used in instruction and guides for the curriculum. In determining validity, five of the questions were discarded from the test, the rest were determined to be valid. Students were randomly selected to be part of the experimental group and the control group. The same teacher in each setting taught both the experimental and the control group from the same curriculum (Hailat, et al. 2008).

The results showed the students who had received the experimental treatment were higher achieving. Based on the analysis of the results, scores were significantly higher in the experimental group. The conclusion of the researcher was that listening to music during instruction is valuable for all 7<sup>th</sup> grade students, that combining learning with other methods of instruction has an effect on improving academic achievement that is profound. It was also stated that the inclusion of music would help better meet the needs of the students. Repetition of the study was recommended (Hailat, et al. 2008). With this recommendation, it is imperative that more research be done on the subject.

### **Conclusion**

The influence of music in the classroom can be seen throughout a number of studies and research. From the prevalence of music in culture, it can be inferred that music is a key part of student's lives. Students already have a link to music, and with this link there is an opportunity to create a powerful tool for educators to employ to increase student's achievement. Increased achievement is becoming more and more vital with increased rigor being required of educators, with standards becoming more challenging and more being required from students. The majority of research supports the inclusion of music in either instruction or the background will be beneficial to students (White, 2007). Music has also been seen to have a positive influence on students that have outside academic factors that limit their scholastic ability (Hallam & Price, 1998). Academic and non-academic outcomes have an opportunity to be positively affected by music. With the link to achievement and improved behavior that has been implied by research, it is vital to further research this topic.

## Chapter 3

### Methods and Procedures

#### Population

The population of this came from a middle school in Elizabethton, Tennessee. The middle school was a public middle school, serving grades 5 through 8. The enrollment in the school was 442 students. The demographic of the school was 94.5% Caucasian, 3.5% African American, and less than 1% being either Asian or Latino. The school was classified as a Title I school, with 76% of the students classified as economically disadvantaged.

#### Sample

The sample of this study was drawn from two randomly selected 8<sup>th</sup> grade social studies classes. The classes were randomly selected from a pool of three classes that were grouped due to similar levels of achievement. The experimental group consisted of 9 students in one randomly selected class, 4 of the students were male and 5 female. The control group was made up of 9 students in a different randomly selected class, 5 of the students were male and 4 were female.

#### Data Collection

Data were collected through the use of teacher made tests; a unit to be taught was selected. The experimental group was taught using classical music in the background during class work time. At the end of the unit, the students were administered a test. The control group was taught without background music. At the end of the unit the students were administered a test. Both scores for experimental and control group were analyzed for differences.

## Procedures

Before research began, permission was obtained to perform the study from the Principal and the classroom teacher of this middle school. Permission slips and information were sent home to the parents of the students selected for the study. The parents or guardians of the students were assured of confidentiality of the data gathered. No student was penalized for choosing to not participate in the study.

Once permission was given, the study began. During implementation, the experimental group and control group were given a pre-test. Both groups were taught the same content. During independent work times in the experimental group, soft classical music was played. The control group did not have any music played during independent work times. In the experimental group, when the chapter test was given, soft classical music was played. In the control group, when the chapter test was given, no music was played.

After all data were collected, analysis was done to determine the differences between experimental and control group.

## Research Questions

**Research Question 1:** Is there a difference in achievement scores between students who are and are not exposed to classical background music during designated class work and assessment times?

**Research Hypothesis 1:** There is a difference in achievement between students who are and are not exposed to classical background music during designated class work and assessment times.

**Null Hypothesis 1:** There is no difference in achievement scores between students who are and are not exposed to classical background music during designated class work and assessment times.

**Research Question 2:** Is there a difference between boys and girls test scores when they are taught with and without classical background music?

**Research Hypothesis 2:** There is a difference between boys and girls test scores when they are taught with and without classical background music.

**Null Hypothesis 2:** There is no difference between boys and girls test scores when they are taught with and without classical background music.



## Chapter 4

### Data Analysis

#### Introduction

The purpose of this research study was to examine if there was a difference in academic achievement between students who were and who were not exposed to classical background music during class time and during exams. The study was conducted in a middle school in Northeast Tennessee with eighth grade students. In this study academic achievement was measured by teacher made tests. This chapter relates the data organization and analysis.

#### Collection of Data

The population for this study came from a middle school in Northeast Tennessee. The enrollment for the school was 442 students. The sample for this study consisted of two eighth grade Social Studies classes. The demographics of the sample are displayed in Table 1, one class was used as the control group and the other as the experimental group. There were 9 participants in the control group and 9 participants in the experimental group. Data were collected in the form of a pre-test and a post test for both the control and experimental group. The data collection instrument used were teacher made tests consisting of multiple choice questions.

Table 1 The Demographics of the Students

<b>Group</b>	<b>Frequency</b>	<b>Percent %</b>
<b>Experimental</b>	9	50%
<b>Control</b>	9	50%
<b>Total</b>	18	100%

### Research Questions and Related Hypotheses

The study was guided by two research questions, all data were analyzed at .005 level of significance using spss software on a windows platform.

Research Question 1: Is there a difference in achievement between students who are taught using classical background music and when taught without classical background music? To determine the difference, a one-way between subjects ANCOVA was calculated to examine the difference in achievement between students who were and were not exposed to classical background music during designated class work and assessment times. The effects of intelligence level at the beginning of the study was covaried out through pre-test. Pre-test was significantly related to achievement ( $F(1,15)=18.842, p<.005$ ). However, the main effect of classical background music on the achievement of the group was not significant ( $F(1,15)=.141, p=.713$ ), with the control group ( $M=79.22, sd=19.652$ ) and the experimental ( $M=85.78, sd=15.303$ ) being not significantly different. Therefore, the null hypothesis was retained. The results are displayed in Table 2.

Table 2

Dependent Variable: posttest					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	2956.682 <sup>a</sup>	2	1478.341	10.080	.002
Intercept	16.476	1	16.476	.112	.742
pretest	2763.293	1	2763.293	18.842	.001
group	20.682	1	20.682	.141	.713
Error	2199.818	15	146.655		
Total	127669.000	18			
Corrected Total	5156.500	17			

a. R Squared = .573 (Adjusted R Squared = .517)

The second research question asked if there is a difference between boys and girls test scores when they are taught with and without classical background music. To calculate the result, a two way between subjects ANCOVA was executed. The main effect of group was not significant ( $F(1,13)=.337, P>.05$ ). The mean for experimental ( $M=85.78, Sd=15.303$ ) was not different from the mean of control ( $M=79.22, Sd=9.652$ ). The main effect of gender was not significant ( $F(1,13)=.101, P>.05$ ). The mean for males ( $M=89.11, Sd=15.227$ ) was not different from the mean of females ( $M=75.89, Sd=17.730$ ). Finally the interaction between gender and

group was not found to be significant ( $F(1,13)=4.381, p=.057$ ). Therefore, the second null hypothesis was also accepted. The results are displayed in Table 3.

Table 3

Dependent Variable: posttest					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	3525.725 <sup>a</sup>	4	881.431	7.026	.003
Intercept	169.511	1	169.511	1.351	.266
pretest	716.725	1	716.725	5.713	.033
group	42.262	1	42.262	.337	.572
gender	12.708	1	12.708	.101	.755
group * gender	549.625	1	549.625	4.381	.057
Error	1630.775	13	125.444		
Total	127669.000	18			
Corrected Total	5156.500	17			

a. R Squared = .684 (Adjusted R Squared = .586)

## Chapter 5

### Summary of Findings, Recommendations, and Implications

The purpose of the study was to determine the effects of classical background music in the social studies classroom versus traditional instruction. This chapter contains a summary of the findings of this research study, recommendations, and implications.

#### **Summary of Findings**

Two research questions were tested in Chapter 4. To answer the questions all data were analyzed at 0.05 level of significance.

Research Question 1 stated is there a difference in achievement between students who are taught using classical background music and when taught without classical background music. In regard to Research Question 1, a one-way between subjects ANCOVA was calculated to examine the difference in achievement between students who were and were not exposed to classical background music during designated class work and assessment times. ANCOVA was used to equate the two classes used as experimental and control because they were not randomly selected. The results indicated that there was not a significant relationship between academic achievement and classical background music. This result, in part, may have come from students being unfamiliar with classical background music and finding it distracting, as this was the only time during the semester the students were exposed to it. This change in the classroom environment might have had an adverse effect on the student's ability to do their best.

Research Question 2 stated is there a difference between boys and girls test scores when they are taught with and without classical background music. In response to Research Question 2 a two way between subjects ANCOVA was executed. The results indicated that there was not a significant difference between tests scores of boys and girls when exposed to classical background music. Despite the results not being significant, boys mean score was higher than girls. This may have been influenced by the gender of the instructor (male), as the females may have felt less engaged during the instructional time. As with Research Question 1, this results being not significant may have been influenced by the student's lack of familiarity with classical music and the change in the normal environment might have been distracting to them, prohibiting them from reaching their full potential on the assessment.

### **Conclusion**

The purpose of this study was to determine if there was a relationship between classical background music and traditional teaching methods on academic achievement. Results of the study indicated that there was not a significant relationship between the variables. Similarly, no significant difference was found between genders when classical background music was used and when it was not.

### **Recommendations**

For future studies, the researcher recommends the following:

1. Researchers should consider other factors in relation to classical background music, another genre of music might yield different results. The researcher would recommend trying music more familiar to the students, to eliminate the potential distraction that unfamiliar music might cause.

2. Researchers should consider testing other grade levels. Students on the elementary level might react differently and more positively to classical background music during instructional and testing time than the 8<sup>th</sup> graders in the study did.
3. Research should be done using true random selection. The use of more schools with a larger group of students could have an effect on the results. Due to the nature of the classes the researcher was in, the researcher used ANCOVA to equate the two classes. Results may have been influenced by the classroom grouping that was completely out of the researcher's control.

### **Implications**

Based on the findings of this study and the review of the literature, the following implications are proposed:

1. Teachers should consider the academic levels of their students before deciding to use classical background music in the classroom. Classical background music may be more of a distraction to students than a benefit.
2. The research for this study is beneficial for teachers and administrators seeking to find if classical background music is a tool that can be used to encourage greater academic achievement for students in the classroom.
3. This research shows that the best possible way to improve academic achievement might not be classical background music, as some other research suggests.

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