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## Effect of Classical Music on College Students

### Bridget Kiely<sup>3</sup>

This paper examined whether or not classical music has a positive or negative effect when it comes to studying school related material. College students were able to sign-up through the Linden Participant Pool. The study used convenience samples to select the participants of this study and given two tests to collect the data: one with music and one without music, and it was a within-participants study. The hypothesis was to detect whether or not classical music is beneficial to a student while comprehending school related material. The participants were also administered a demographic survey, two informed consents, a printed receipt, and a feedback letter. The hypothesis was supported and the data showed significance between the two variables after running a t-test through SPSS. While researching this subject I also found that this genre of music is helpful to many other things such as premature babies and the hearing impaired. Classical music is a genre that may need to be recognized more for its ability to improve things throughout our daily lives.

The purpose of this study was to investigate whether or not classical music helps a student while reading school related material. Classical music may not be the most popular genre we have today but when looking at it through an educational perspective it is the most beneficial. Exploring the importance of this genre helps point out how it can help students while studying school related material. Classical music is a genre that is not all that popular but it could be very beneficial to students before taking a test. The present study is looking at the benefits classical music may have.

There are many articles relating to the benefits of classic music. They suggest that it can help listening skills, hearing impaired, neonatal babies, IQ, as well as just generally in the classroom. Most people would not think that this genre could help so much variety of things but it can and does most of the time without us even knowing it. A study that was done in 2007 experimented to see if listening to Mozart affects listening ability. The results were what I would thought they would be; those who listened to slow Mozart music had higher listening test scores than those who did not (Bowman, 2007). In other research, it was found that similar studies could be beneficial to the hearing impaired as well. In an article about the meaning of music helping the vision and hearing impaired it states, “all music has potential to

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provoke images to the listener, one genre of music, program music is composed specifically to prompt ideas or images in the mind of the listener.” (Lagasse, 2001 & Darrow, 2007) (Bowman, 2007). The present study focuses on college age students but many different aspects of this method have been looked at even when it comes to younger children.

Classical music has also been studied to help a variety of ages as well; for example, a study looked at neonatal babies, which are those that are born prematurely, and how music helped babies in the NICU with stress symptoms, oxygen saturation, peak heart rate and respiratory parameters. Overall, the results of this study showed a decrease in stress on the infants in the NICU (Aydin, Yildiz, 2012). A quote from this article that really drew me in with relating it to my study was when the author stated, “music can be defined as the art of narrating feelings and thoughts with sounds.” (Aydin, Yildiz, 2012).

The Mozart effect is a very popular study that relates to this subject. Listening to Mozart’s music is suggested to those who are in need to boost their IQ (Lerch, 2000). Whether or not this helps on something as simple as listening to this composer while taking a test will, but in this study it shows over time the affect of this music on your brain can be very beneficial. Another study examined the effects of involving music in the academic environment. In this articles it talks about how music can affect our feelings and energy levels (Brewer, 1995). This relates to the current study because it makes one think that if music can affect one’s feelings and energy levels than it may alter our performance on a test or any school related material.

The proposed hypothesis is that there would be a positive correlation in listening to classical music while taking a comprehension test. The purpose of this is to see if listening to a specific genre of background music while studying will help or hurt an individual. The general method for this project was simple; the researcher administered demographic surveys and consent forms and then gave them two tests, one with music and one without. Their scores on the test was my raw data and overall the results of this experiment showed that classical music in fact does help an individual succeed more while attending to school related material.

## Method

### Participants

College students were recruited at Lindenwood University using sign-up sheets posted through the Lindenwood Participant Pool between the dates of March 18, 2013 and April 29, 2013. They had the option to volunteer for this study and there were a total of ten participants recruited. There were a total of seven women and three men all ranging between the ages of 19 and 49 years old. There were six people that spoke English as their native language and four that did not. All of the participants were college students but all varied in their levels of education. There were four freshmen, four sophomores, one junior, and one senior. There were seven Caucasian, one was Asian, one was African American, and one was under the category of other. The researcher then asked the participants if they listened to music while studying and if so, what kind? Five said yes and five said no, the one's that answered yes listened to a variety of genres. Two listened to classical, two listened to country, one listened to R&B, one Hip-Hop, and two listened to the category of other.

### Materials and Procedure

The researcher started out by handing the participants a survey that consisted of general demographic questions. They included the sex, age, gender, ethnicity, grade level, and whether or not they listened to music while studying (see Appendix A). The participants were then given two informed consents to fill out that was used to inform the volunteer what they were participating in as well as give them consent and permission to continue with the study (see Appendix B). The researcher then followed by giving them two comprehensive passages to read which they then followed by answering a series of seven questions. The participants were given a passage that was alternated every time so that the researcher had counterbalancing the two. One of the passages was about concussions (see Appendix C) and the other one was about relics (see Appendix D). They started out without music each time so that each participant got equal treatment throughout the study. The researcher chose these passages because they were a sufficient length and were at an easy enough level that most college level student should have been able to understand the content. The passages were taken from a website called English for everyone

and they provided the passages as well as the questions. They were not timed but there was a limit of 20 minutes due to the fact most students wanted to participate in a study that did not take up too much of their time. The participants took these surveys and tests at scheduled times in the Lindenwood psychology labs. These labs are located on the bottom floor of Young hall and there are four small rooms in which the researcher was assigned accordingly. They were seated in chairs at tables and were given a pencil and paper to complete each of the tasks. The researcher recorded the data on the tests and they were kept safely for records.

### **Results**

A paired samples t-test was used to compile the data and analyze the results from the Sound of Music study. This t-test was chosen because this study features a within-subjects design. A key characteristic of that design type is that the study that uses the same subjects in all of the treatment conditions with two separate variables. For example, in this study the same groups of participants were given the same two passages one with music and one without music and then their scores were compared in order to detect whether or not the music was beneficial to them comprehending the information of the passages. The results revealed the following:  $t(9) = 3.464$ ,  $p < 0.05$ ,  $d = .57$ .

### **Discussion**

The results show that the t-value is .007, which fell inside our critical region based on an alpha region of .05 in the positive tail. This means that the null hypothesis is rejected because it falls inside the critical region. My hypothesis was supported which is not surprising. For example, a study done by Etaugh and Ptasnik (1982) hypothesized those students who habitually listen to familiar music while studying would have greater reading comprehension than those who did not listen to music while studying. This would lead one to rationalize that it is possible the genre of classical music can distribute the same results, as it did. Therefore, my findings that listening to music while studying is more effective than not listening to music while studying can be supported. In the future, the study could possibly be more effective to have more participants

in order to see how more detailed data would play out. For example, if we had 50 participants it would be fun to see the difference between the women's and the men's scores. Although this time around the study did not accumulate quite enough participants in order to see significance between the two.

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### Appendix A

#### Demographic Survey

1. Gender:      Male              Female

2. Age:

3. Academic Standing:      Freshmen      Sophomore      Junior      Senior

4. Race (Check one)

- American Indian or Alaskan Native
- Asian
- African American
- Native Hawaiian or Other Pacific Islander
- White
- Other

5. Is English your first (native) language?

Yes      No

6. Do you listen to music while studying? If Yes, why?

Yes      No

Why?

7. If you answered yes to #6 then what Genre do you listen to most while studying?

Jazz      Classical      Rap      Country      R&B      Hip-Hop      Other

**Appendix B**  
Informed Consent

I, \_\_\_\_\_ (print name), understand that I will be taking part in a research project that requires me to read two passages, then answering seven questions on each and one short demographic survey. I understand that there may or may not be music playing while I read and take the tests. I understand that I should be able to complete this project within 20 minutes. I am aware that I am able to skip any questions that I feel uncomfortable answering on any of the tests given. I am also aware that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without any penalty or prejudice. I should not incur any penalty or prejudice if I cannot complete the study. I understand that the information of my responses will be analyzed only as a part of aggregate data and that all identifying information will be absent from the data in order to assure anonymity. I am also aware that my responses will be analyzed only as part of aggregate data and that all identifying information will be kept confidential and that data obtained from this study will only be available for research and educational purposes. I understand that any questions I may have regarding this study shall be answered by the researcher(s) involved to my satisfaction. Finally, I verify that I am at least 18 years of age and am legally able to give consent or that I am under the age of 18 but have on file with the LPP office, a completed parental consent form that allows me to give consent as a minor.

\_\_\_\_\_ Date: \_\_\_\_\_  
(Signature of participant)

\_\_\_\_\_ Date: \_\_\_\_\_  
(Signature of researcher obtaining consent)

Student Researcher's Name and Number:

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### Appendix C

#### Passage One – No music

Directions: Read the passage. Then answer the questions below.

Concussions are brain injuries that occur when a person receives a blow to the head, face, or neck. Although most people who suffer a concussion experience initial bouts of dizziness, nausea, and drowsiness, these symptoms often disappear after a few days. The long-term effects of concussions, however, are less understood and far more severe. Recent studies suggest that people who suffer multiple concussions are at significant risk for developing chronic traumatic encephalopathy (CTE), a degenerative brain disorder that causes a variety of dangerous mental and emotional problems to arise weeks, months, or even years after the initial injury. These psychological problems can include depression, anxiety, memory loss, inability to concentrate, and aggression. In extreme cases, people suffering from CTE have even committed suicide or homicide. The majority of people who develop these issues are athletes who participate in popular high-impact sports, especially football. Although new sports regulations and improvements in helmet technology can help protect players, amateur leagues, the sports media, and fans all bear some of the responsibility for reducing the incidence of these devastating injuries.

Improvements in diagnostic technology have provided substantial evidence to link severe—and often fatal—psychological disorders to the head injuries that players receive while on the field. Recent autopsies performed on the brains of football players who have committed suicide have shown advanced cases of CTE in every single victim. In response to the growing understanding of this danger, the National Football League (NFL) has revised its safety regulations. Players who have suffered a head injury on the field must undergo a “concussion sideline assessment”—a series of mental and physical fitness tests—before being allowed back in the game. In an effort to diminish the amount of head and neck injuries on the field, NFL officials began enforcing stricter penalty calls for helmet-to-helmet contact, leading with the head, and hitting a defenseless player. Furthermore, as of 2010, if a player’s helmet is accidentally wrenched from his head during play, the ball is immediately whistled dead. It is hoped that these new regulations, coupled with advances in helmet design, will reduce the number of concussions, and thus curb further cases of CTE.

Efforts by the NFL and other professional sports leagues are certainly laudable; we should commend every attempt to protect the mental and physical health of players. However, new regulations at the professional level cannot protect amateur players, especially young people. Fatal cases of CTE have been reported in victims as young as 21. Proper tackling form—using the arms and shoulders to aim for a player’s midsection—should be taught at an early age. Youth, high school, and college leagues should also adopt safety rules even more stringent than those of the NFL. Furthermore, young athletes should be educated about the serious dangers of head injuries at an early age.

Perhaps the most important factor in reducing the number of traumatic brain injuries, however, lies not with the players, the coaches, or the administrators, but with the media and fans. Sports media producers have become accustomed to showcasing the most aggressive tackles and the most intense plays. NFL broadcasts often replay especially violent collisions while the commentators marvel at the players’ physical prowess. Some even feature weekly countdowns of the “hardest hits.” When the media exalts such dangerous behavior, professionals are rewarded for injuring each other on the field and amateurs become more likely to try to imitate their favorite NFL athletes. Announcers, commentators, television producers, and sportswriters should engage in a collective effort to cease glorifying brutal plays. In turn, fans should stop expecting their favorite players to put their lives on the line for the purposes of entertainment. Players must not be encouraged to trade their careers, their health, their happiness, and even their lives for the sake of a game.

## Questions

- 1) Based on information in the passage, it can be inferred that all of the following statements are true except
  - A. tackling is not always dangerous; however, players who use improper tackling form may injure others
  - B. scientists have established a definitive link between players who die untimely deaths and the onset of CTE
  - C. NFL officials have done little to address the problem of CTE
  - D. athletes who are praised for exceptionally brutal hits are likely to continue engaging in such dangerous behavior
  - E. the NFL has done more to mitigate future cases of CTE than youth, high school, or college leagues have done
- 2) According to the passage, which of the following factors contribute(s) to the incidence of CTE in amateur players?
  - A. inconsistent application of safety regulations for all levels
  - B. lack of education about the dangers of head injuries
  - C. amateur players' desire to emulate professionals
  - D. None of the above
- 3) As used in paragraph 3, which is the best synonym for laudable?
  - A. praiseworthy
  - B. ineffectual
  - C. memorable
  - D. audacious
  - E. satisfactory
- 4) The author's tone in the final paragraph can best be described as
  - A. remorseful
  - B. hopeless
  - C. perplexed
  - D. insistent
  - E. arrogant
- 5) As used in the final paragraph, which is the best antonym for exalts?
  - A. castigates
  - B. venerates
  - C. mollifies
  - D. expedites
- 6) In describing the sports media, the author emphasizes its
  - A. responsibility
  - B. entertainment value
  - C. danger
  - D. sensationalism
- 7) In the final paragraph, the author mentions "sports highlights television programs" as an example of how
  - A. the media glorifies violence
  - B. amateurs learn to mimic professional athletes
  - C. professional athletes gain approval
  - D. All of the above

ANSWER KEY:

1. C
2. B
3. A
4. D
5. A
6. D
7. B

## Appendix D

### Passage two – with music

Directions: Read the passage. Then answer the questions below.

Right now, I am looking at a shelf full of relics, a collection of has-beens, old-timers, antiques, fossils. Right now I am looking at a shelf full of books. Yes, that's right. If you have some spare cash (the going rate is about \$89) and are looking to enhance your reading experience, then I highly suggest you consider purchasing an e-reader. E-readers are replacing the books of old, and I welcome them with open arms (as you should).

If you haven't heard of an e-reader and don't know what it is, then please permit the following explanation. An e-reader is a device that allows you to read e-books. An e-book is a book-length publication in digital form, consisting of text, images, or both, and produced on, published through, and readable on computers or other electronic devices. Sometimes the equivalent of a conventional printed book, e-books can also be born digital. The Oxford Dictionary of English defines the e-book as "an electronic version of a printed book," but e-books can and do exist without any printed equivalent.

So now you know what an e-reader is. But you still may be wondering why they put printed books to shame. E-readers are superior to printed books because they save space, are environmentally friendly, and provide helpful reading tips and tools that printed books do not.

E-readers are superior to printed books because they save space. The average e-reader can store thousands of digital books, providing a veritable library at your fingertips. What is more, being the size and weight of a thin hardback, the e-reader itself is relatively petite. It is easy to hold and can fit in a pocketbook or briefcase easily. This makes handling ponderous behemoths such as *War and Peace*, *Anna Karenina*, and *Les Misérables* a breeze. Perhaps the only drawback to the space-saving aspect of an e-reader is that it requires you to find new things to put on your shelves.

In addition, e-readers are superior to books because they are environmentally friendly. The average novel is about 300 pages long. So, if a novel is printed 1000 times, it will use 300,000 pieces of paper. That's a lot of paper! If there are about 80,000 pieces of paper in a tree, this means it takes almost 4 trees to make these 1000 books. Now, we know that the average bestseller sells about 20,000 copies per week. That means that it takes over 300 trees each month to sustain this rate. And for the super bestsellers, these figures increase dramatically. For example, the Harry Potter book series has sold over 450 million copies. That's about 2 million trees! Upon viewing these figures, it is not hard to grasp the severe impact of printed books on the environment. Since e-readers use no trees, they represent a significant amount of preservation in terms of the environment and its resources.

Finally, e-readers are superior to books because they provide helpful reading tips and tools that printed books do not. The typical e-reader allows its user to customize letter size, font, and line spacing. It also allows highlighting and electronic bookmarking. Furthermore, it grants users the ability to get an overview of a book and then jump to a specific location based on that overview. While these are all nice features, perhaps the most helpful of all is the ability to get dictionary definitions at the touch of a finger. On even the most basic e-reader, users can conjure instant definitions without having to hunt through a physical dictionary.

It can be seen that e-readers are superior to printed books. They save space, are environmentally friendly, and provide helpful reading tips and tools that printed books do not. So what good are printed books? Well, they certainly make nice decorations.

## Questions

- . 1) As used in paragraph 1, it can be inferred that "relics," "has-beens, old-timers, antiques, fossils" are all words that describe something
- ancient
  - useless
  - outdated
  - pathetic
- . 2) The tone of the author can best be described as
- shrewd
  - conniving
  - persuasive
  - authoritative
- . 3) According to the author, e-books
- were all once printed books
  - may be "born digital"
  - are able to display images
  - B and C
- . 4) As used in paragraph 3, which of the following describes something that has been "put to shame"?
- A dog is left outside on a frigid, dreary winter night.
  - Team A defeats Team B in a humiliating rout.
  - Martha is caught stealing at the mall and is arrested in front of a crowd of curious bystanders.
  - The machine has countless moving parts and Dustin has trouble assembling it.
- . 5) A thesis statement is a sentence that clearly describes what the author plans to discuss. Based on this information, which of the following sentences from the passage is the thesis statement?
- If you have some spare cash (the going rate is about \$89) and are looking to enhance your reading experience, then I highly suggest you consider purchasing an e-reader.
  - E-readers are replacing the books of old, and I welcome them with open arms (as you should).
  - An e-reader is a device that allows you to read e-books. An e-book is a book-length publication in digital form, consisting of text, images, or other electronic content that is readable on computers or other electronic devices.
  - E-readers are superior to printed books because they save space, are environmentally friendly, and provide helpful reading tips.
- 6) Based on its use in paragraph 4, it can be inferred that petite belongs to which of the following word families?
- jubilant, euphoric, playful
  - compact, diminutive, little
  - cute, attractive, charming
  - light, airy, spacious
- 7) Based on information in the passage, it can be inferred that War and Peace, Anna Karenina, and Les Misérables are all
- authored by Europeans
  - dense and impenetrable
  - timeless classics
  - awkward or unwieldy

ANSWER KEY:

1. C
2. C
3. C
4. B
5. D
6. B
7. D

**Appendix E**

## Feedback Letter

Thank you for participating in my study. The present study was conducted in order to determine whether people are able to study better with background music or without it. I hypothesized that students who study with background music do better on comprehending the passages than those who do not. Please note that I am not interested in individual results; rather, I am only interested in the overall findings based on aggregate data. I am interested in studying this subject because I am curious to see the effects of listening to classical music while studying. I will be to apply this to not only my own life but I also will be able to inform others of the overall results as well.

No identifying information about you will be associated with any of the findings, nor will it be possible for us to trace your responses on an individual basis. If you are interested in obtaining the final results of the study based on aggregate data, or if you have any questions or concerns regarding any portion of this study, please do not hesitate to let us know now or in the future. My contact information is found at the bottom of this letter.

Thank you again for your valuable contribution to this study.

Sincerely,

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