

WILL LISTENING TO CLASSICAL MUSIC HELP YOU TO STUDY?

NUR FATIN IZZATI BINTI YURI

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IZADORA BINTI MUSTAPFA

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Universiti Teknikal Malaysia Melaka


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For my beloved father, Yuri Bin Yahya, my beloved mother Farizat Binti Abd. Karim,
my beloved brother Muhammad Syafiq Bin Yuri and my beloved sister Nur Farah Aqilla
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ABSTRACT

In achieving good result academically, students' study habit is very important. Listening to music is one of the many study habits that are used by many students. This project is done in order to study if listening to classical music really helps students to study. The Mozart Effect is used as reference which imply that classical music will help to boost focus. Previous studies seldom give a clear answer whether or not listening to classical music really helps to boost focus during study. This study tests subject's attention by asking the subjects to solve two sets of questions while presenting them with two types of stimulus which are music condition and silent condition (no music). The attention is measured by observing the presence of evoked response potential (ERP) i.e. the N1 amplitude. From the averaged ERP, the presence of N1 is clear in some subject for either or both conditions. From the comparison between the two condition with the presence of N1 and questions scores obtained, the conclusion is that students perform exceptionally better during silent condition compared to music condition.

ABSTRAK

Untuk dapatkan keputusan yang baik, cara pembelajaran yang diamalkan oleh pelajar adalah sangat penting. Mendengar muzik adalah salah satu daripada cara pembelajaran yang digunakan oleh kebanyakan pelajar. "The Mozart Effect" digunakan sebagai rujukan. Ia adalah idea di mana mendengar muzik klasikal jarang memberikan jawapan yang tepat tentang persoalan sama ada muzik klasikal membantu atau tidak dalam meningkatkan fokus semasa belajar. Projek ini menguji keprihatinan subjek dengan meminta mereka menyelesaikan soalan dan pada masa yang dalam dua keadaan iaitu muzik dan tiada muzik (senyap). Keprihatinan subjek diukur dengan pemerhatian terhadap "Evoked Response Potential" iaitu amplitud N1. Jangkaan untuk projek ini adalah subjek menunjukkan prestasi yang baik semasa mereka menjawab soalan semasa mendengar muzik klasikal. Seterusnya, subjek memperoleh markah tinggi semasa mereka menjawab soalan semasa mendengar muzik klasikal. Akhir sekali, amplitud N1 dijangka akan berlainan untuk setiap subjek.

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CHAPTER 1

INTRODUCTION

1.0 Introduction

Different students possess different kind of study habits. This project will focus on one of the study habits possess by students which is listening to music while studying. Further in this chapter, definition of study habits, discussion and examples of research on listening to music as a study habit will be explained in the project background. In addition, objectives of the project will also be elaborated along with the problem statement, scope of project and structure of report.

1.1 Project Background

As a student, years of life are spent studying. A student with good study habit will lead to positive academic performance while a student who develops an inefficient study habit may lead to academic failure. Study habits mean theme setting of subject to be learned or investigated, and the tendency of pupils or students to study when the opportunity is given [1]. Referring to [2], some study habit that may help students improve their memory instead of doing simple reading, are students choose to recite out loud; creating mind maps by using different colors and shapes. Some students use flashcards and diagrams. Studying alone is not the most preferred choice. Students choose to study in a group as it can help to engage each other in understanding the lessons.

One of the most applied study habits among the students is listening to music while studying. From an article "Should you listen to music while you study" [3], it is written that some students prefer to listen to music while studying because they believe it helps them focus. Most students also believe that listening to music helps to pass the time to endure the long study sessions [4]. According to Axford, an online instructor from the University of Pheonix College of Humanities and Sciences, "Some students can study effectively while listening to music while others can't as they found it was distracting". In another article written by Rosen [5], music is definitely not the best option when it comes to memorizing things such as a list of facts or data.

The project proposed is a study on listening to classical music help in study. This project uses The Mozart Effect as a reference. It is an idea that listening to classical music can improve people's intelligence in general and babies' intelligence in particular. Sorensen stated in [6] that The Mozart Effect is an idea that passively listening to classical music can make you smarter. Sorensen claims that the music's ability to heal the human mind and body, reviewing cases of music therapy's use with children afflicted with autism. The Mozart Effect study began in 1993 when a psychologist named Francis Rauscher played a Mozart Piano Sonata to 36 college students for 10 minutes and gave

the students a spatial reasoning test. She also asked the students to take a spatial reasoning after listening to silence and a person with a monotone speaking voice for 10 minutes. She said that the results of her experiment seemed pretty clear as they found that the students who listened to the Mozart Sonata scored significantly higher on spatial temporal task [7]. Since then, many studies were done to prove that listening to classical music help in study. But up to this time, there is not enough evidence if listening to classical music really helps in study.

There are some issues in proving that if listening to classical music is a distraction or assist students to focus in studying. An article [8] written by Krakovsky M. stated that the original 1993 experiment had found only a modest and temporary IQ increase in college students performing a specific kind of task while listening to a Mozart sonata. And even that finding was proved suspicious after a 1999 review showed that over a dozen subsequent studies failed to verify the 1993 result.

1.2 Project Objective

The main objective of this project is to investigate if listening to classical music really helps in study. The second objective is analyze the comparison between the total numbers of unanswered questions, correctly answered questions and accurately answered questions to the presence of NI ERP component in music and silent condition.

1.3 Problem Statement

Finding the best study habits may help in students' academic achievement. Listening to Mozart is believed to help students do focus better. However, there are studies contradict this notion. Therefore, this study will correlate the students focus with the presence of N1 ERP component through a paradigm which requires the students to answer a set of questions in two conditions i.e. music and silent conditions.

1.4 Project Scope

For this project, 10 students of Universiti Teknikal Malaysia Melaka between 20 years old to 30 years old are subjects for this experiment. All subjects are required to answer 20 questions which involving mathematics question within 10 minutes for Section A and Section B. Both sections consist of 10 questions. For section A, respondent will answer the question while listening to classical music and for section B; respondent will answer the question without listening to any music or sound.

1.5 Report Structure

This report consists of five chapters which are introduction, literature review, methodology, result and discussion. The last chapter would be conclusion and recommendation of the project. Chapter 1 starts with an introduction of the project followed by the objectives of the project, problem statement and scope of the project. Chapter 2 will discuss on the literature review of the project based on the previous research done on the topic. This chapter will elaborate more on the theory and concept that had been used by former researchers on how they come up with their own conclusions.

Chapter 3 will explain the methodology of the project. This chapter explains the steps and flow on how to achieve the objectives of the project. Chapter 4 will shows the result and a discussion on the result. All the data that had been analyzed will be discussed in this chapter and a comparison should be made on how this project is different from the previous research. The last chapter, Chapter 5 would be the conclusion and recommendation. This chapter will conclude the whole project and propose the future progress for the project.

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

Based on Chapter 1, The Mozart Effect is an idea of listening to classical music can improve the one's intelligence. Why do students choose listening to music while studying as their study habit? These chapters will answers the question as various examples of experiment involving The Mozart Effect idea, and study habits in relation to music will be stated. Besides, concept of Event Related Potential (ERP), NAmplitude, habituation and attention will be further explained as these concepts will be used in this project.

2.1 Music

For ages, music is used for stimulating and healing emotions. From an International Journal of Information and Education Technology [10], music is defined as the language of a man's soul. It has an effect on the behavior and emotions of people of all ages. Ideas that listening to music while doing a work can provide concentration is widely believe by people all around the world. There are several types of music within cultures all over the world such as Jazz, rhythm and blues, rap, rock and classical. Jones in her study [11], states that music provides a powerful way of conveying to the human heart and mind. From Journal of Undergraduate Psychological Research [12], agreed that music is a common part of our everyday routine.

Ogloza in an article [4], states that if music is playing, the brain automatically spends energy interpreting both the lyrics and the beat. This divides your brain's attention, and thus causes the student to have a difficult time memorizing the material. Based on a study [13], the effect of specific musical pieces has on human behavior been usually explained as a consequence of their impact on positive mood and arousal. Lion wrote in an article [24], that music actually has gamma waves that help us to improve our memory when we have to deal with a study session and we used music as some kind of helps to kill the boredom. While listening to the music at the background, our brain automatically spends energy interpreting the lyrics and the beat.

2.1.1 Types of Music that Student Prefer to Listen While Studying

Jones from [11] had done an online survey to learn more about students' study habits in relation to music. 100% of the respondents admitted that they liked listening to a variety of music. 75% of them respond that they did listen to music while studying while the other 25% of them said they did not prefer to listen to music while studying. In the survey, students needed to choose variety types of music genre they listened to while studying. 41.7% chose classical music, 25% chose rock music, 41.7% chose pop, 11.1% chose pop, 36.1% chose hip hop, 8.3% chose reggae and the other 8.3% chose the other forms of music.

By using different age group and cultural differences, a survey [15], was done to investigate the perceived impact of playing music while studying. Only one aspect of characteristics of the music listened to while studying was different for the three age groups. This was whether the students played music with a fast tempo or not. The most positive response received from the youngest students and the most negative response to this statement came from the advanced secondary students. There were also few significant differences in nationality between the characteristics of music that was played while studying. The Japanese played instrumental music the least, the US students calming music the least and the UK and US students arousing music the least. The Greeks reported listening to all of these the most. According to thesis [18], 1.93% of the students do not listen to classical music while doing their homework, and about half of the students thought it would not help their scores.

2.1.2 Students' study habits in relation to music

At the last section of the survey from [11], the students need to give the reason why they listen to music while studying. 40% said that they can concentrate if they listened to music, 30% said that music helped them to relax while studying, 10% of them just liked music and wanted to listen to music that it helped them to study smoothly, 7% stated that they feel good listened to music while studying. Another 7% reported that they feel motivated by the music they listened to while studying. There is a suggestion that students are aware of the facts that music does influence the learning process on some level. Jones has concluded that majority of the students showed that they made a conscious choice to listen to music while they studied and they aware of the impact of music on cognitive performance.

In a Journal of Undergraduate Psychological Research [12], it has also been found that many students study and do homework while listening to music. A survey to learn the reasons why high school students listen to music and to understand why some students listen to music when completing academic tasks had been done on students in grades 9-12 [14], indicated that many students listen to music while completing academic tasks because they feel the work is boring and tedious. The music helps them stay focused on the task, in their opinion.

Referred to a survey done in [15], a study on the perceived impact of playing music while studying based on age and cultural differences were done. There are indications that, overall, students do not play music while studying extensively and that they rarely play music while revising for examinations, memorizing material or learning a foreign language and most often play music when thinking or writing. This suggests that they are aware that their performance on some tasks will be impaired. Students reported that they mainly played music while studying when they were happy or bored and that