

# What is the impact of different genres of music on memory?

## Abstract

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The purpose of our project was to find out whether or not certain genres of music affect memory, focus, and test taking ability. As students who study a lot as well as take many tests, we wanted to know how we should study and if certain music would help us focus.

We began by selecting songs from different genres and choosing students to take part in our testing. We then created a slideshow presentation and tests based on the slides. The students met in their groups with Isabelle proctoring. As Isabelle was teaching the students, the music from the selected genre was playing in the background. After a week of waiting, the students came back to the room where we were testing for the actual test part of the project. While the students took their tests, the music that they heard while they were learning played in the background. We then graded the tests and compared how groups did on average.

The results from the tests varied, and did not seem affected by the music played. With an average score of 9.8 out of a possible 13, the music didn't seem to phase the students. No conclusive data was taken from the experiment.

After finishing the project, we distinguished certain components we would change for future testing. These would include a wider range of participants, a different set of songs, and a more constructed time table

## Introduction

Many students listen to music while studying, so we investigated how music influences students academically. We learned from our background reading about one main behavior of memory: executive function which is how your brain stores information and recalls it. Executive function also helps filter what things you need to remember and helps you remember them. This knowledge of how memory works would help us learn what our data would be discussing and where it would be coming from in our test subject's brains.

Rebecca Payne Shockley's *Mapping Music* discusses how music creates "landmarks" in your memory to help you recall the information. It also tells the reader that certain "landmarks" (i.e beat or dip in volume) may help them recall smaller details. The research in both of these sources was based around classical music and not other genres which is why we wanted to ask if any other genre of music affected focus more

## Purpose

This project describes whether or not different genres of music impact memory ability. We were interested in looking into memory and test-taking because we felt that it is very relevant to our daily lives. We are curious to find out what different genres help your memory because in school we are always trying to find ways to remember and with this research, we will identify what music can help the average human focus.

When we are in our classes throughout the day, teachers will sometimes turn on music. The genre is usually classical and, very rarely, slow jazz. Our teachers claim it is to help us focus and helps lower the "sometimes frenzied energy of the room". We wanted to know if this music was really helping us succeed in class. Besides this classroom application, everyone in our group has some connection to music that they want to deeper explore and understand.

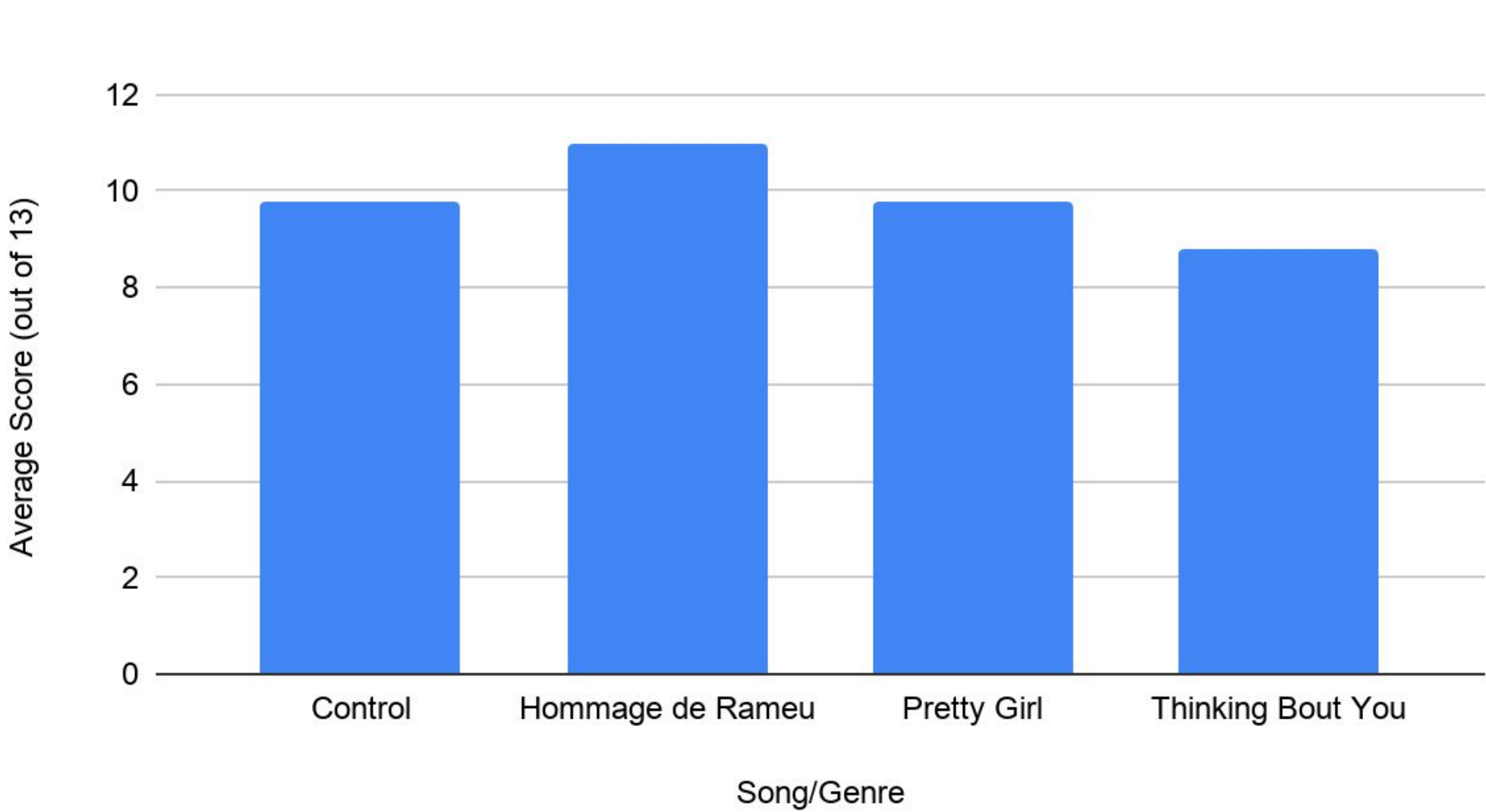
## Materials and Methods

We created a presentation on a topic we assumed most students would have little prior knowledge about in the hopes that we would have an even playing field. Donuts. We recruited a group of 20 students who we would give our presentation. Groups of 5 came into the designated room where one of us was ready to give them instructions. We played the group's assigned song under our speaking and gave the information. We sent out an email to the groups to meet us the next week for testing where we again played the group their song quietly.The song groups were Hommage a Rameau, Thinking Bout' You, and Pretty Girl as well as an additional control group with no music.

## Results

The scores of participants varied from 6 to 12 of a possible 13. The average score was a 9.85. As we see in the graph above, the "Hommage de Rameau" group was the group with the highest average. Not only that, but this group also had the highest range of data.The control group and "Pretty Girl" group had the same average score. The "Thinking Bout You" group's average score averaged out lower than the others. The group had a number of high test scores but, like with the Hommage de Rameau group, had a very wide range. We viewed a pattern between the average score and the rhythm of the song. Hommage de Ramaeu, which had the slowest beat, averaged out with the best score. This may be related to how the rhythm affects executive function and recalling the information days later. This data does not relate to the genre of music. Because different songs have unique rhythms, this may affect scores in a different way.

Average Score of Testing Group



| Song/Genre        | Average Score (out of 13) |
|-------------------|---------------------------|
| Control           | 9.8                       |
| Hommage de Rameu  | 11                        |
| Pretty Girl       | 9.8                       |
| Thinking Bout You | 8.8                       |

| Song/Genre        | Score (out of 13) |
|-------------------|-------------------|
| Control           | 8                 |
| Control           | 8                 |
| Control           | 10                |
| Control           | 11                |
| Control           | 12                |
| Hommage de Rameu  | 10                |
| Hommage de Rameu  | 11                |
| Hommage de Rameu  | 11                |
| Hommage de Rameu  | 11                |
| Hommage de Rameu  | 12                |
| Pretty Girl       | 9                 |
| Pretty Girl       | 9                 |
| Pretty Girl       | 9                 |
| Pretty Girl       | 10                |
| Pretty Girl       | 12                |
| Thinking Bout You | 6                 |
| Thinking Bout You | 8                 |
| Thinking Bout You | 9                 |
| Thinking Bout You | 10                |
| Thinking Bout You | 11                |

## Discussion

After analyzing the data we collected, we are unable to conclude that the genre of music affects memory retention and, by extension, test scores. One group scored below the Control, one the same, and one above. If given the chance to continue or redo testing, we would change many components we felt would factor into the outcome of the project's data. If we were to continue with our research, we would like to begin with a larger data set as the extra information would provide more data and therefore more information. Along with adding more people to the groups we would also like to include both genders of students because factoring in other genders and age groups may not produce the same results our groups did. Larger test groups should include people of a variety of backgrounds to show results with a wider variety of people.

Not only would we suggest a different set of groups, we would suggest a different set of music. We chose songs based off of genre. We feel these songs did not end up accurately depicting the genres. Two songs in particular, Thinking Bout You and Pretty Girl, are similar enough to possibly affect scores, although they didn't in our case. We would also like to expand upon our emerging hypothesis that the rhythm of the song is more important than the genre, so we would like future testing to be done with songs that are distinctly different rhythmically rather than generically. These songs should be instrumentals or songs that are not distinct so as not to affect the participant's focus

## Acknowledgments

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