

Running head: MUSIC'S EFFECT ON MEMORIZING

The Effect of Different Genres of Music on One's Ability to Memorize



Guilford High School

Names of those who completed the study



Abstract

The problem investigated in this experiment was how different genres of music affect one's ability to memorize words. The participants in the study were seniors, all in the same level 1 English class at Guilford High School. They were asked to memorize simple lists of words under three conditions – no music, classical music, and rock music playing in the background. After 1 minute, the students recorded the words they had memorized. To find the best condition for memorizing, the average amount of words memorized for each participant was found, as well as the difference between this average and the scores under each of the 3 conditions. These differences were then averaged across all participants. It was found that the students memorized the most words while no music was playing. The second best condition was classical music, and the students memorized the least amount of words while rock music was playing.

good

implications of your findings?

Introduction?

The Effect of Different Genres of Music on One's Ability to Memorize

It is very important for students to find a method of studying that stimulates the memorization of facts and techniques to do problems. Students today are almost always seen with headphones in their ears, listening to their favorite music through their iPhone. The questions students should ask themselves are: What type of music would best allow me to study and memorize? Should I listen to music at all? This experiment tested how different types of music and the lack of music affect one's ability to memorize.

The independent variable of this study was the genre of music – either classical (Nocturne by Chopin) or rock (Breed by Nirvana). The control variable was studying under no music. The dependent variable was the number of words each participant recorded

after studying a list of simple words under each of the 3 conditions. Classical music was chosen for one of the conditions because it has been proven to enhance one's memory. A study was conducted at the University of California, Irvine, on people with Alzheimer's.

The results showed that scores on memory tests that included the recall of shapes and patterns greatly improved when they listened to Mozart (Music Therapy). We also chose rock music because many students today enjoy listening to this genre of music. However, previous research has found that rock music does not improve memorization. An experiment by Missouri Western State University compared how well people recalled information while listening to rock music versus classical music. The participants studied a picture for 30 seconds while listening to either classical or rock music, and then answered questions regarding the picture they just studied. The rock music trial produced the lowest scores (Kirkweg).

Another study that focused on music and memorization was conducted at the University of Whales this past summer. It asked students to recall a series of sounds in a specific order while listening to music they liked, music they did not like, and no music. The results show no difference in scores between the two types of music, but significantly higher scores under the no music condition (Pela). With this last study in mind, as well as the previous studies mentioned, the hypothesis for this experiment is: If students listen to no music while studying they will remember more information than if they study while listening to classical or rock music. However, students will be able to recall more information while studying to classical music than to rock music.

Method

Procedure

1. Hand out three lists of 20 words and 3 blank sheets of lined paper to each participant. Each of the three word lists and the three lined sheets of paper are labeled either list 1, list 2, or list 3. Make sure the lists are not in the same order for every participant.
2. Tell the students to begin studying word list 1 and begin a timer. There should be no music playing.
3. After 1 minute, tell the students to record every word they can remember on the corresponding list 1 lined sheet of paper.
4. Stop them after 1 minute.
5. Collect the list 1 word list and list 1 lined sheet of paper from each participant.
6. Repeat steps 2 through 5, except each student should use the list 2 word list and list 2 lined sheet of paper. Begin playing the classical song *Nocturne* by Chopin while the students are studying the words. Stop the song when they are recording their memorized words.
7. Repeat steps 2 through 5, except each student should use the list 3 word list and list 3 lined sheet of paper. Begin playing the rock song *Breed* by Nirvana while the students are studying the words. Stop the song when they are recording their memorized words.

Participants

The 17 participants of this experiment were in Mrs. Davis's period 4 level 1 English class at Guilford High School. Every student in the class was a senior, and the ages ranged

from 16 to 18. Both Mrs. Davis and our teacher Mr. Minervini gave consent to test this group of students. All of the participants were white, and there was an almost even male-to-female ratio.

(can you get an accurate count?)

Materials

Each participant was given 3 lists of words labeled list 1, list 2, and list 3 (see appendix ^{page 9} 2), as well as 3 sheets of lined paper labeled list 1, list 2, and list 3. The lists were comprised of 20 simple words that most people learn in elementary school. This was done to make sure everyone tested knew every word. The participants anonymously wrote their memorized words on the lined paper in pencil or pen. We played the classical and rock music out of an iPhone, and used a timer on another iPhone. The 1 minute of studying the word list while listening to music symbolizes a real student studying for a test. The 1 minute of recording the memorized words symbolizes a student taking a test in school, which is why the music is only played for the first 1 minute of studying.

Results

Scoring

For each participant, we counted the number of words recorded for each condition. Then, we found the average number of words memorized for each student and found the difference between the average and the number of words memorized for the 3 conditions. Next, we found the average difference for each condition across all participants. The average difference between the average score and the no music score was 1.5. The average difference between the average score and the classical music score was -0.5. The average difference between the average score and the rock music was -1.1.

*you can describe
the type of
start type of
used
here*

wordst numbers just not figures/fabos/graphs

This method of scoring allows each student to be compared to him or herself, which controls for the fact that some students are better at memorizing than others.

Data

See Table/Figure section starting on page 13.

Discussion

The results of this experiment suggest that students should not listen to music when studying to enhance their ability to memorize. The participants memorized and recorded the most words under this condition, as shown from its score of 1.5 (participants memorized 1.5 more words with no music playing than their average amount of words memorized). The next best condition was classical music, where students had a score of -0.5, meaning that they memorized 0.5 less words with classical music playing than their average amount of words memorized. The slowest score of -1.1 (1.1 less words memorized than the average amount of words memorized) was a result of listening to rock music while studying.

These findings support both parts of the hypothesis. [✓] ~~The hypothesis was:~~ "If students listen to no music while studying, they will remember more information than if listening to classical or rock music. However, students will be able to recall more information while studying to classical music than to rock music." The data in this experiment suggest exactly this – students are able to memorize the most words while listening to no music, the second most while listening to classical music, and the least while listening to rock music.

good you did not interpret here

which included

This experiment's findings replicate findings from other studies. The experiment at the University of California, Irvine suggested that classical music increases the ability to recall information; the experiment at Missouri Western State University stated that rock music decrease one's ability to memorize; and the experiment at the University of Whales found that no music at all resulted in the highest recall. The data in this experiment are consistent with previously published experiments.

This study had limitations. First, the conditions were only partially counterbalanced. The lists of words were given to different students in different order, but the order of the conditions was the same (no music first, then classical, then rock). Because of this, order effects may have influenced the findings. For example, students may have been more focused during the first trial, resulting in better scores. Alternatively, the second and third trials may have been harder because they already had done the task twice and might have mixed up the words. A second limitation is that this study only tested one type of task. Students may respond differently to music while doing math tasks or studying complex ideas. Finally, other types of sounds may be better than silence, such as white noise. Further research is needed to address these limitations.

References

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also ↓ what if song they knew the song or not? If they liked or disliked the song or heard it

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- Sand
- Pepper
- Mother
- Cat
- Moon
- Rock
- Boat
- Hat
- Lake
- Scarf
- Car
- Ticket
- Skirt
- Comb
- Blanket
- Soap
- Berry
- Paper
- Ant
- Heart

Corn

Mail

House

Tree

Shirt

Garden

Candy

Photo

Chicken

Soda

Cousin

Street

Flower

Trash

Camera

Music

Purple

Ocean

Tomato

Father

Apple

Friend

Cup

Dog

Pencil

Swing

Hand

Bed

Phone

Brush

Nail

Picture

Lamp

Bear

Vase

Desk

Cherry

Sister

Chocolate

Pillow

Author Note

Thank you to Mrs. Davis and her level 1 senior English class for participating in this experiment, as well as Mr. Minervini. The authors of this study are both affiliated with Guilford High School and can be reached by email at anna.babbin@gmail.com

Thanks -
but why? What
did I do...?
- You can
leave that
part in)

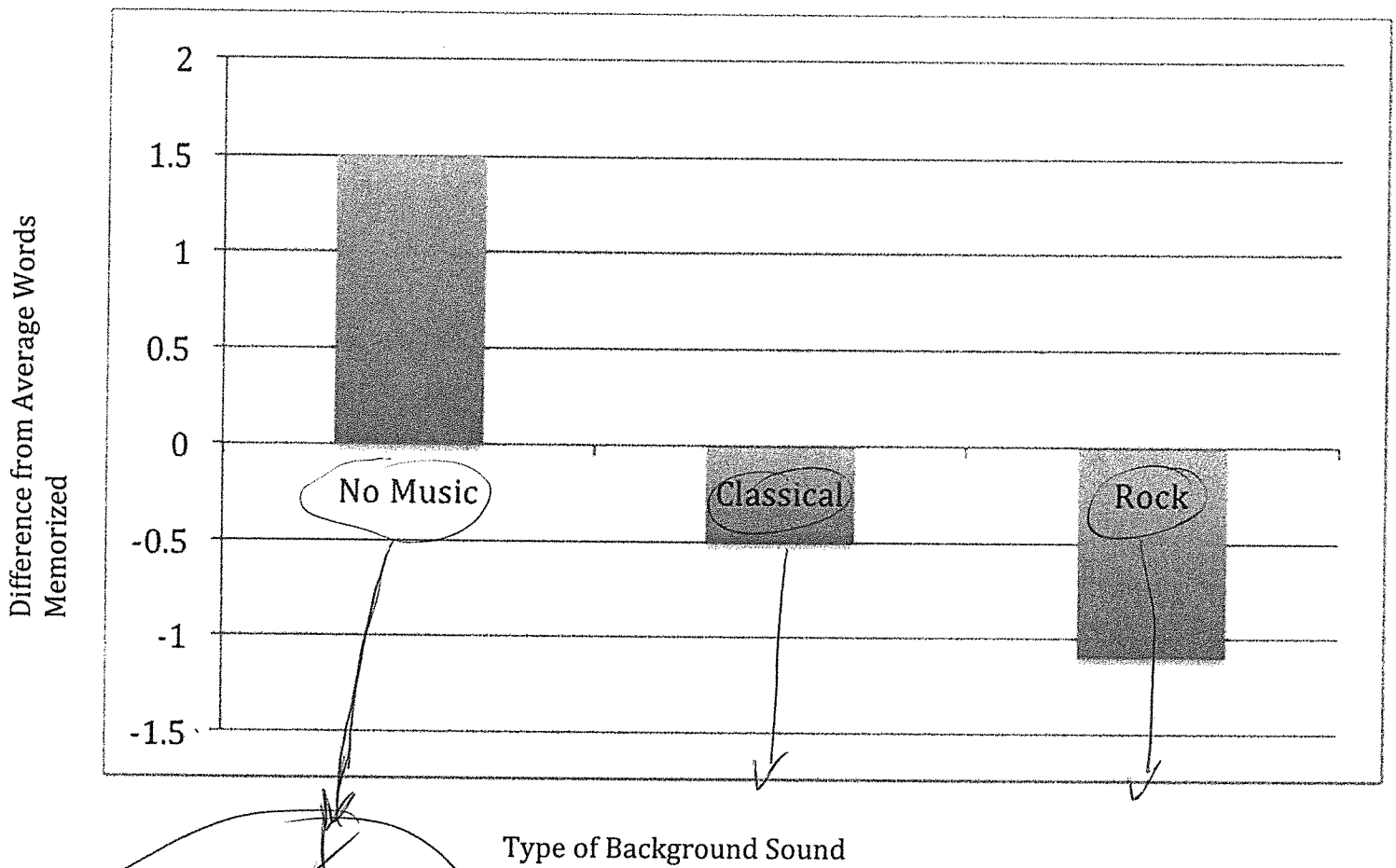
Tables/Figures

Figure 1

Participant	No music	Classical	Rock	Mean	No Music-Mean	Classical-Mean	Rock-Mean
A	11	13	9	11	0	2	-2
B	12	10	10	11	1	-1	-1
C	15	11	15	14	1	-3	1
D	10	6	5	7	3	-1	-2
E	12	13	8	11	1	2	-3
F	17	12	17	15	2	-3	2
G	11	7	7	8	3	-1	-1
H	13	8	6	9	4	-1	-3
I	7	8	7	7	0	1	0
J	16	15	13	15	1	0	-2
K	14	11	5	10	4	1	-5
L	14	10	12	12	2	-2	0
M	14	14	12	13	1	1	-1
N	11	9	9	10	1	-1	-1
O	13	13	13	13	0	0	0
P	8	6	8	7	1	-1	1
Q	8	6	6	7	1	-1	-1

Figure 2

The Effect of Music on Average Memorized Words



I cannot understand this graph?

Table/Figure Captions

Figure 1: Each participant, labeled A through Q, has the following data: words recorded during the three conditions, the average number of words recorded, and the difference between each condition and the average.

Figure 2: This graph is of the average differences between the words recorded under each condition and the average words recorded across all participants. From the graph, it is suggested that no music has the most positive effect on memorizing words, with classical second and rock last.