The Effect of Auditory Distraction on Short-Term Visual Memory

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Abstract. Other scientists have done experiments that indicate classical music is effective for stimulating the brain. This experiment compared classical and three other genres (jazz, rock and rap). Ten subjects listened to music from each of these genres while memorizing a list of twenty-six common English words. They then wrote down as many words as they could remember from the list. Classical music had an average of 11.1 words correct and a standard deviation of 2.5. Rap had an average of 9.9 and a standard deviation of 2.4. Jazz had the average of 9.2 and a standard deviation of 1.5. Rock had an average of 8.7 and a standard deviation of 2.1. The results from the experiment support the belief that classical music has the greatest stimulating effect on short term memory. The conclusion drawn from the experiment is music with softer tones and a slower rhythm assists memory tasks in the brain best.
Keywords: Sociology, Memory, Music

INTRODUCTION

Many people, especially students, have to memorize things every day. It would be beneficial for those people if there was a way to aid them in their memorizing. Some people find it helpful to have music in the background. Music has been proven to help in many functions of memory [1]. This experiment tests different genres of music and their effect on short term memory. Recollective memory is the memory in which people use to recall events or facts [2]. By testing the recollective memory it is determined which music is optimal for recalling information. Music has also been proven to improve language skills [3]. Previous experiments have shown that classical music has the greatest effect on the part of the brain that deals with memory [5]. The experiment helped find another genre that might have the same or a greater effect on the short term memory.

METHODS

Four musical genres were chosen: rap, jazz, classical and rock. Each subject was given one minute to listen to one of the four genres of music while studying a list of twenty-six words. Next, the music and the list of words were taken away from the subject and they were given another minute to write down as many words as they could remember from the list they previously tried to memorize. The number of words they remembered correctly was counted and recorded. This process was repeated for each student until all ten students had listened to a song from each of the four genres.

RESULTS

The result shows that classical music had the greatest effect on the brain and allowed the subjects to memorize the most words. Rap came in second, jazz came in third, and rock came in fourth allowing the least amount of words to be memorized. Most people will be surprised to see that rap came in second place allowing the second greatest amount of words to be memorized. This is surprising because rap music is known for faster tempos and a louder tone which most would suspect to be very distracting.

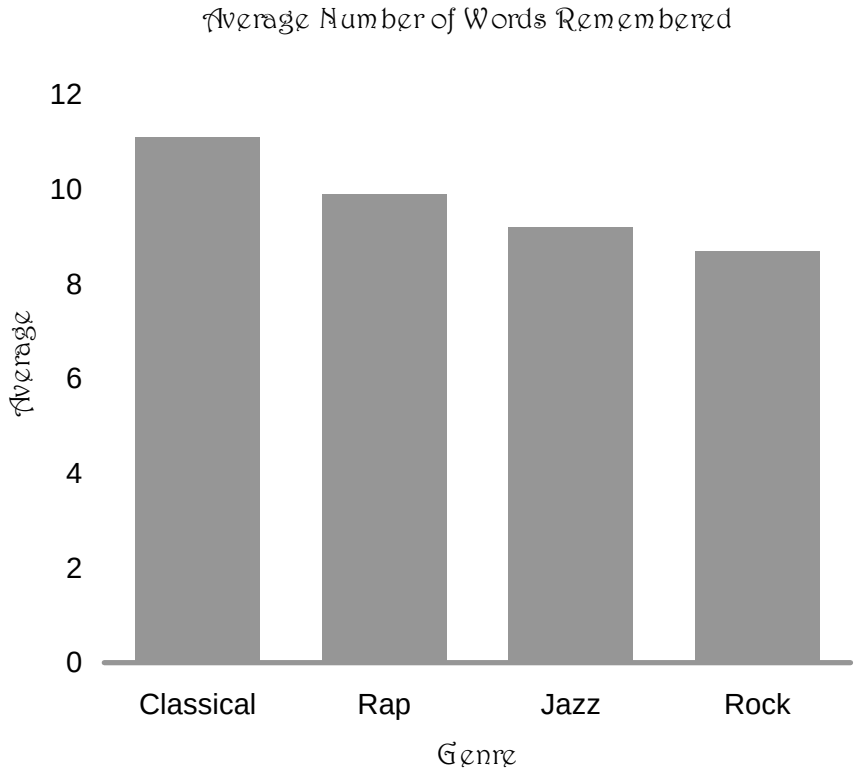

Figure 1. The bars represent the average number of words memorized while listening to the four genres.

TABLE I. The table below shows each test subject and the number of words they remembered after listening to each of the genres. The red numbers at the bottom show the average for each number and the blue numbers indicate the standard deviation.

Name	Jazz	Classical	Rock	Rap
Anne	9	9	10	10
Bart	7	9	6	6
Brittney	10	14	10	13
Emmanuel	8	12	8	6
Karen	10	11	12	9
Niav	10	11	8	11
Nora	10	14	12	13
Ruby	8	7	5	8
Senia	11	15	9	12
Tucker	9	9	7	11
Average	***9.2***	***11.1***	***8.7***	***9.9***
Standard Deviaton	***1.2***	***2.5***	***2.1***	***2.4***

DISCUSSION

The difference between the best performing music (classical) and the worst performing music (rock) was about one standard deviation and therefore has a significant improvement. One can conclude from this that slower music with softer tones works best however that conclusion might not be supported by the data because rap came in a close

second next to classical. We also note some limits such as we did not test the subjects without music and the subjects only listened to the music for a minute. Longer listening time might lead to different conclusions. Nevertheless, our finding for classical music is consistent with the results of Lavelle [3].

CONCLUSIONS

It can be concluded that music with softer tones and a slower rhythm stimulates the brain best and allows the memorization of more material. Because classical music had the greatest effect and the best results, it may be concluded that music similar to that will have the greatest effect on the memory and have the same results. However even though the classical music had the greatest effect on the memory and has softer tones and a slower rhythm a surprising result came from the experiment. Rap music, which has a faster tempo than classical, came in second place in the allowance of memorization. Our experiment has validated past experiments with the same results, however, it has also introduced a new genre of music, rap, as having a positive effect on memory.

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