

Effects of popular music on memorization tasks assignment

[Philosophy](#)



Popular Music on Memorization Tasks The purpose of this study was to find whether popular music would have a positive or negative effect on memory tasks. There are many different perspectives on how background music and noise affects performance. The current body of research reports mixed results with some studies reporting positive effects and some reporting negative effects of music on performance. Numerous studies have been conducted to test the Mozart effect. The Mozart effect is a term used to explain the claim that people perform better on tasks when listening to music composed by Mozart.

Earaches, Shaw, and Ky (1993) indicated that subjects' performance on spatial tasks was better while listening to music compared to the silence condition. Due to this study, many people questioned whether listening to music increases intellectual ability. Other researchers stated that it is possible that the Mozart effect has very little to do with music. They postulated that enhanced performance is due to arousal or mood (Thompson, Challengers, & Hussein, 2001). Those researchers proposed that musical stimuli that may be enjoyable to that individual might produce a small improvement in performance on a variety of tasks.

Many studies have emerged from the concept of the Mozart effect. The results of these studies have been mixed. Arranged & Giggly (2001) indicated that background music significantly disrupted writing fluency while using a computer. The participants in that study showed signs of slower writing and a decreased writing quality when their writing was accompanied by background music. An earlier study found that when students frequently

studied to music, a specific type of music was less likely to impair their performance on reading comprehension tests (Tough & Michaels, 1975).

Hillary and Tolling (1975) indicated that if the background music was familiar to the subject, they performed better on the given task than when unfamiliar music was present. Another study argued that the differences were due mainly to individual differences in music preference (Dossals & Mackerel, 1986). Tucker and Bushman (1991) found that rock and roll music had a detrimental effect on tasks involving mathematical and verbal skills, but it did not have an effect on reading comprehension tasks.

In another study, the researchers found that music that contained speech had significant active effects on the participants' ability to perform tasks (Martin, Waggoner & Forlorn, 1988). It has also been found that males and females perform differently in the presence of music when performing various types of tasks (Miller & Scabby, 1989). Although these studies found different results for gender and the frequency of listening to the type of music presented in the study, the results still indicated that music helped their performance. Broadband (1958) tested the effects of noise on tasks that required complex mental processing.

He showed that noise produces deterioration in performance over time. He also proposed that noise has a negative effect on later performing of the same activity in silence. This suggests that there are task. The irrelevant speech effect indicates that the presentation of speech based irrelevant sound that is to be ignored by subjects actually impairs their task performance (Locomotive, 1995). The irrelevant speech effect results in

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performance deficits on many cognitive tasks such as serial recall, free recall, cued recall, and recognition.

Irrelevant speech can cause poor performance in many everyday situations such as offices, dorm rooms, and other situations where concentration on tasks is important. One study found words to be more disruptive than tones and nonsense syllables. The researchers suggested that this was due to the semantic meaningfulness of words (Locomotive, Newly, & Wilson, 1997). The irrelevant speech effect breaks down the person's ability to focus attention on a particular task. This is thought to be due to the irrelevant speech gaining access to the phonological loop. The phonological loop is a short-term memory store for speech-based material. This effect is not controllable by the individuals experiencing it. Short-term memory is dependent on attention paid to to-be-learned items. Even though a person may be focusing on to-be-learned information, sounds from the environment are registered and organized in the phonological store (Cones, 1999). Salaam and Biddable (1987) showed that short-term memory is detrimentally affected by unattended speech but is not disrupted by unattended sound.

This suggests that the speech based sounds disrupt the phonological loop. Irrelevant sound disrupts attention and has detrimental effects on performance of cognitive tasks. Even relatively quiet sound shows this effect. Acoustic change has been shown to have negative effects on reference where repeated sounds have not been shown to be disruptive. Non-speech sounds can be disruptive when there is acoustic variation. Irrelevant sounds produce these effects when stimuli is presented and when it is present

during retention. Habituation has not been shown to occur in the case of irrelevant sound.

Memory is highly vulnerable to the negative effects of irrelevant sound. Irrelevant sound that holds semantic meaning has been found to disrupt comprehension tasks (Binary, Mackey, Trembler, , 2001). Total and Ethan (2002) conducted a study involving irrelevant speech effects on the immediate cued recall of stimuli. They found that irrelevant speech had adverse effects on cued recall. They also found that steady-state irrelevant speech had the same detrimental effect on recall as did changing-state irrelevant speech.

This contradicts other literature in the field that shows that changing-state speech should decrease performance more than that of steady-state speech. When speech based sound is masked by noise, it becomes less disruptive. This is thought to be due to the added noise, masking the speech to make it unrecognizable as such (Leerier & Hellebore, 1998). Many college students study while listening to music. Earlier research has not provided a clear and consistent picture of the effect of listening to music on learning. The present study attempted to determine if studying to popular music would have a detrimental effect on memory.

If music does hinder a student's ability to study, it would be beneficial for them to have that information available. It is possible that earlier research did not indicate an accurate picture of the effect that music has on learning because previous researchers had not taken into consideration the music people frequently listen to while performing cognitive tasks. The present

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study tested the effects of music often contains lyrics, it would have a detrimental effect on performance, as the irrelevant speech effect would predict.

Methods Participants The participants were all volunteers who received credit for their participation from their lab course taken with psychology 3650. All participants were undergraduates, ranging in age from 17 to 33. Forty-seven participants were female and thirty were male. The students were told that the purpose of the study was to look at memory distortion.

Materials/Design The application that we used for study was Microsoft power point (2001). The experiment slide shows consist of an assortment of geometric shapes that had no significant connection other than they were shapes.

The music used in the experiment was popular music. The music and slide show was shown and projected over the labs VA system. The experiment took place in the University of North Texas Gateway building computer lab. The participants were divided into two groups: a control (no music) and experimental group (music). Assignment to the groups was through systematic sampling, with the first group of student assigned to the control group, the second to the experimental group, and so forth through the four groups of dents we were assigned to run our experiment on.

This was to ensure that the groups were as evenly distributed as possible in case of low participation in the study. **Procedure** Upon arrival, the students were seated in front of one of the computers and asked to provide the information requested at the top of their recall-testing sheet to determine

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sex, age. It was explained that they would move through the test stack by clicking once with the mouse on each button that read " next. " In addition, they were told that they would view a short set of instructions after the introduction page, which would remind them once again what their task would be.

They were also told that after they would have 10 minutes to view the pictures on the screen, after the 10 minutes were up they would have 5 minutes to recall shapes in the order that they saw them on the slide. The slide show began with a brief set of instructions to remind the participants of the task at hand. After the set of instructions was introduced, the program began by hitting the designated button. Upon pressing this button, the experimental groups heard a melody, respectively, while viewing the slide show of pictures that was to be recalled at the end of the experiment.