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Effects of visual distraction and background music on learning cognitive tasks

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ABSTRACT

This study focused on the effects of background music and visual distractions on cognitive task performance. The experiment recruited 114 as participants. The subjects will perform memory tasks and reading tasks in three music conditions: without background music, high arousal emotional music, and low arousal emotional music, as well as no visual interference, and two conditions with visual interference. The experimental data were collected from volunteers analyzed by ANOVA with SPSS 21 statistical software to understand whether the task performance of each group was different under various background music and visual interference conditions. Major findings are as follows:

1. Different background music conditions and visual interference conditions have significant effects on cognitive tasks. First of all, the presence or absence of visual interference significantly affected memory task performance. The groups with visual interference performed noticeably worse than the no-interference groups in memory tasks. However, no significant effect of visual interference on reading task performance were found.
2. Secondly, the background music environment significantly affects memory task performance. The high-arousal music group had a lower average score compared to the no-music and low-arousal music groups. On the other hand, the low-arousal music group performed better than the no-music group, likely because the slower tempo of the music resulted in lower arousal, avoiding excessive arousal and achieving optimal levels of arousal and mood, thus enhancing task performance.

According to the research results, relevant suggestions are put forward, which can be used as a reference for future research in the fields of background music, visual distraction, and cognitive task performance.

Keywords: background music, visual distractions, arousal, memory tasks, reading task