

EFFECTS OF ROCK AND ROLL MUSIC ON MATHEMATICAL, VERBAL, AND READING COMPREHENSION PERFORMANCE¹

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Summary.—Rock and roll music played at 80 dB decreased performance of 151 male and female undergraduates on mathematical and verbal tasks taken from national aptitude tests but not their scores on reading comprehension.

Many college students study while listening to rock and roll music. Past research has mainly focused on the effects of music on reading comprehension. In this study we were interested in the effects of rock and roll music on mathematical, verbal, and reading comprehension performance. The moderating role of music-related expectancies was also investigated.

Subjects were 151 male and female undergraduate psychology students² who participated to earn class credit. Subjects were run in four groups of about the same size. Two groups ($n = 76$) performed the problems while listening to rock and roll music, and two groups ($n = 75$) performed the problems in silence. Assignment of groups to conditions was random. The rock and roll music, which was played at about 80 dB, consisted of selections from Billy Idol, Dire Straits, Motley Crüe, Janet Jackson, Inxs, ZZ Top, Technotronic, and Information Society. The mathematical, verbal, and reading comprehension problems were taken from the American College Test (ACT) and the Scholastic Aptitude Test (SAT). The three measures were moderately correlated, ranging from .26 to .16. To measure expectancy effects, subjects were asked to indicate whether they thought listening to rock and roll music increased, decreased, or had no effect on their performance on mathematical, verbal, and reading comprehension tasks. All subjects completed the problems in the allotted 45 minutes.

TABLE 1
MATHEMATICAL, VERBAL, AND READING COMPREHENSION STATISTICS
FOR MUSIC AND NO-MUSIC GROUPS

| Task | No Music | | Music | | d^* | t | p |
|--------------|----------|------|-------|------|-------|------|-----|
| | M | SD | M | SD | | | |
| Mathematical | 6.31 | 2.27 | 5.45 | 2.24 | 0.38 | 2.34 | .02 |
| Verbal | 7.95 | 2.08 | 7.12 | 2.30 | 0.38 | 2.32 | .02 |
| Reading | 4.69 | 2.18 | 4.68 | 2.43 | 0.00 | 0.02 | .99 |

* d = standardized mean difference.

The results, depicted in Table 1, showed that rock and roll music decreased mathematical and verbal performance but not reading comprehension performance. There were no significant expectancy effects on performance of any of the tasks. The findings of this study have implications for students' study habits.

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²Due to a clerical error, the sex of subjects was not recorded.