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MUSIC AS A DISTRACTOR ON READING-TEST PERFORMANCE OF EIGHTH GRADE STUDENTS

SUZANNE FOGELSON

Teachers College, Columbia University

Summary.—Playing of popular instrumental music during a test was distracting and lowered reading-test performance of 14 eighth grade students. Ability statistically significantly interacted with reading performance; 7 less able students were more adversely affected than 7 bright students.

Previous studies of the effect of music on the performance of certain tasks have shown both positive and negative distractions. Williams (1961) found that popular music adversely affects mental test performance requiring quantitative ability. Classical music did not affect mental test performance. Colbert (1961) showed that musical stimulation can improve the performance of some college students on certain tasks and anxiety level did not determine the magnitude of improvement in performance. Podvin (1967) claimed that music can be successfully applied in the rehabilitation of some handicapped persons and in the adjustment of some normal individuals to work. As yet, the effect of music upon the reading-test performance of children in a classroom has not been investigated.

Two eighth-grade English classes, one educators termed Bright and the other Non-bright, were divided into equal groups according to their Stanford-Binet IQ: Bright No music, Bright with music, Non-bright no music, and Non-bright with music ($Ns = 7$). The reading test of 80 questions, the Iowa Tests of Basic Skills, Test R, Form 4 for eighth grade level, required 55 min. Groups without music were tested under standard conditions, whereas other groups were tested while hearing popular music. The record which was played was an instrumental of Mantovani's entitled "Favorite Show Tunes," with such songs as "Hello, Dolly," "Fiddler on the Roof," and "Dear Heart." For all groups test directions from the teacher's manual were followed. Groups with music were told to take the test as they normally would and to disregard the music.

The mean numbers of questions answered correctly and standard deviations for the four groups, as well as for the combined groups with and without music are: For Brights without music the mean was 61.1 (*SD*, 6.6), with music 55.1 (*SD*, 10.1), Non-bright *Ss* means were respectively 26.7 (*SD*, 7.6), 16.7 (*SD*, 5.9); means for the combined groups with music were 35.9 (*SD*, 18.3) and for combined groups without music 43.9 (*SD*, 18.8). Bright *Ss* without music outperformed those with music, and the Non-bright *Ss* without music outperformed those with music. Likewise, a comparison of the means and standard deviations for the Combined *Ss* without and with music showed music was a distractor.

An analysis of variance showed treatments were significant ($F = 7.9$, $df = 1/24$, $P = .01$; $MS = 448.0$), as was ability ($F = 164.8$, $df = 1/24$, $P = .01$; $MS = 9289.0$), and their interaction ($F = 16.4$, $df = 1/24$, $P = .01$; $MS = 924.0$), within-groups MS was 56.37.

Several observations were made during testing. Generally Bright *Ss* preferred taking the test with the music which they thought relaxing. The Non-bright *Ss* found the music distracting. Scores indicated that for the Brights there was no consistency between their preferences and test scores. Only 2 of 7 Bright students hearing music finished the test but 6 out of 7 of the Bright *Ss* without music did. Grading only the first 70 instead of all 80 questions, the mean number of questions answered correctly indicated that the Controls still somewhat outperformed *Ss* hearing music, Bright without music $M = 53.3$, Bright with music $M = 52.1$.

The mean number of questions answered correctly in the first 20 was 10.7 for the Non-bright controls and 8.7 for Non-bright *Ss* with music; the former outperformed the latter. On completed questions for which greater time was taken, poorer performance was noted when popular instrumental music was introduced during test taking.

The following conclusions may be drawn: (1) Playing popular instrumental music during test-taking adversely affected the reading-test performance of 14 eighth grade students. (2) Ability interacted significantly with reading performance. (3) Playing popular instrumental music during test-taking had a greater effect on the 7 non-bright students than on the 7 bright students.

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