

Abstract

Can background music affect the solving of algebraic equations? The main purpose of the present study was to examine the effect of background music on solving algebraic equations among students with difficulties in mathematics. The study also examined the effect of students' self-choice of background music on their mathematics achievements.

Sixty-five students from two secondary schools in Israel, with the same socioeconomic status, were selected for the study. The participants were 10th grade students, 15-17 years old with difficulties in mathematics. The students were studying mathematics at low level of instruction. General intelligence test was administered to the participants in order to verify that all students had normal intelligence and that there was no significant difference between the students in the two study groups.

All participants took part in three tests, each included of 5 algebraic equations with increasing difficulty level. The experimental group (N=35) included 10th-grade students who solved the three tests under different conditions: without music, with high-tempo music, and with music chosen by them. On the other hand, the control group (N=30) solved the three tests one after the other without listening to music while performing. The results indicated a positive effect of background music on the solution of algebraic equations, as well as a positive effect of students' self-choice of background music on their ability to solve algebraic equations.

The study findings demonstrated that background music contributes to students mathematical learning, especially when students are given the opportunity to choose the music they prefer.

The results of the present study have important educational implications and serve as a basis for developing a creative approach to teaching mathematics. This approach would allow the use of background music during learning and practice in the formal education system. Teachers' openness to teaching methods incorporating music can lead to strengthening learning processes, especially in mathematics, which, in many cases, serves as an emotional obstacle for young and adolescent students.