

Music in the Mathematics Classroom SOUND HEALTH® Research

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by Dr. Maya Ruvinshteyn & Dr. Leonard Parrino

[Music Helps Students Retain Math](#)

by Pam Orel

Editors Note: A couple of years ago I was contacted via letter by Dr. Maya Ruvinshteyn a professor at Essex County College and Rutgers University in New Jersey. She asked me if I would be able to travel to hear a research paper she was presenting at the 16th Annual Conference of the New Jersey Faculty Development Network in April 2005 on Music in the Mathematics Classroom. I was unable to attend but was very excited that the 3 year study conducted by she and colleague Dr. Leonard Parrino was using music from our Sound Health® series! The doctors used Music for Learning, Music for Thinking and Music for Concentration.

I would like to personally thank Dr. Ruvinshteyn and Dr. Parrino for sharing their valuable research findings with us. We hope this research will inspire others to use our music in the classroom and to conduct further studies. We are sending them our Sound Health Premium Maximum Focus so they can now explore the benefits of baroque music produced for the state of body relaxed/mind alert using our 24bit/192kHz High Definition recordings.

They share their thoughts on the article. Following their article is a research review on the study published in Rutgers Focus.

Benefits Of Music In The Academic Classroom Dr. Maya Ruvinshteyn & Dr. Leonard Parrino

Music is an important aspect of our lives and we can listen to it at any time and place because of modern technology. Our students listen to music at all times. They listen to their CDs on the way to school and during breaks. They play music while doing their homework and relaxing at home.



Therefore, we believe it is very important to give teachers and students information about what type of music is appropriate for learning and what type is inappropriate. Modern research shows that some types of music can speed up the learning process, but other types of music can be harmful to the learning process. The goal of our work was to show that Baroque-style music in the academic classroom can enhance learning and improve the class environment. Prior research was done to show music accelerates learning of foreign languages (Ostrander 1994), (Rose 1997).

Our studies were done in a regular college environment. We worked with students who studied college-level and developmental-level mathematics. The ten classes that we were working with were divided into two groups of five classes. For the first group, Baroque-style music was played in the background during the first half of the semester; while the second group was not exposed to music for the first half of the semester. (In our classrooms we were using "Music for Learning" CD's by The Arcangelos created by the Advanced Brain Technologies company.) After the first month of the semester, we surveyed both groups. The goal of the survey was to check how music affected students' attitudes toward the class, the subject and the instructor.

The results of the survey showed that more students from the second group (The group with music) responded positively on the questions related to the class and the subject. The difference range from 6 to

14. Classes with the music in the background were noticeably more cooperative, flexible and easier to teach.

References:

Ostrander, Sheila & Shroeder, Lynn with Ostrander, Lynn Super-Learning 2000. Delacorte press 1994.

Rose, Colin and Nicholl, Malcolm. Accelerating Learning for the 21st Century. New York: Dell Publishing, 1997.

Editors Note: The following research review is reprinted with the permission of Pam Orel Editor of Rutgers's Focus Published on March 6, 2006.

Music Helps Students Retain Math

Pam Orel

A Rutgers instructor says that Baroque style music played during mathematics class helped students enjoy class and retain more information. The research builds on studies linking certain music to improvements in learning.

The three-year study was conducted by Maya Ruvinshteyn, instructor in mathematics at Essex County College and Rutgers-Newark, and Leonard Parrino, mathematics professor at Essex County College.

According to the body of research over the past 40 years, Baroque music pulses between 50 to 60 beats per minute and has been shown to enhance learning of foreign languages and to improve performance in some types of tests. Because of this, the music has been widely marketed as a learning tool.

"I first heard about music as a learning tool when I was studying English," says Ruvinshteyn, who spoke Russian as a first language. She believes that their study is the first that links music to improved attitudes and to math and better performance in the college environment.

The faculty members studied two groups of classes at Essex County College. In the first group, the instructor played baroque-style music in the background during the first month of the semester. The second group, taught by the same instructors, was not exposed to music during class time. After the first month, surveys showed that students who listened to music were more likely to enjoy class (86 percent vs. 76 percent) and less likely to find mathematics challenging (33 percent vs. 46 percent). Similar changes were noted in both groups regardless of which instructor taught the course. Preliminary results also indicated an improvement in student grades.

Some selected comments volunteered on the original surveys:

- "I never liked math before, but this class was different."
- "I thought the music would put me to sleep, instead I was paying more attention to his board work."
- "Most classes have someone tapping a pencil, chewing, talking or whispering. This class was different."

"The ancient philosopher Plato said, 'Music is a more potent instrument than any other for education,'" Ruvinshteyn says. "Our study shows that learning can be made more enjoyable for the students and more pleasant for the instructors when appropriate music is added to the environment."

-Pam Orel