Music and Lyrics: Does Music Inclusion Enhance Mastery of Mathematics Standards?

California Lutheran University
Graduate School of Education
Department of Learning and Teaching

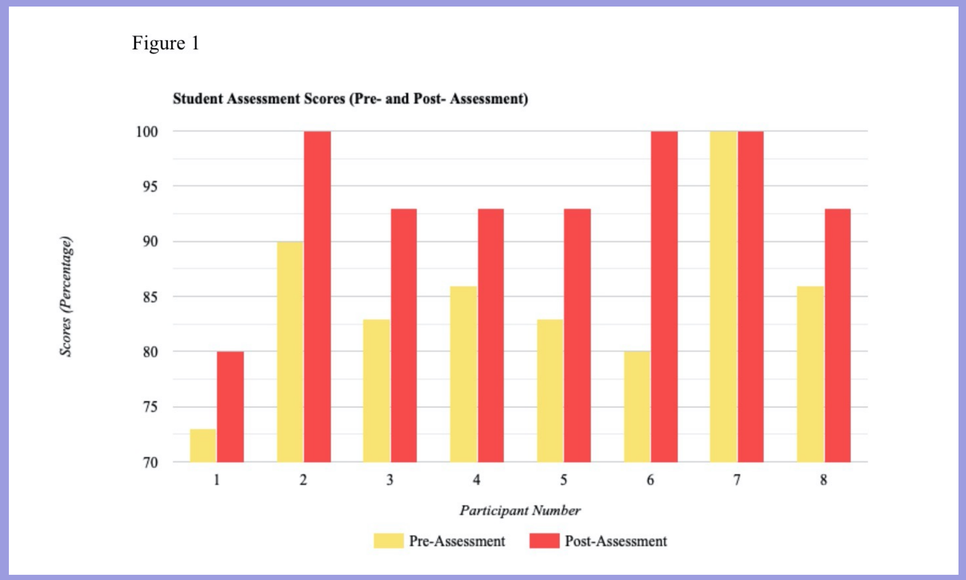
The Problem

- After the implementation of Common Core State Standards in 2009, there have been national declines in mathematics achievement.
- Teachers must teach at a faster pace in order to make sure that all standards are covered for the given school year.
- Many students struggle with the fast pace, therefore, they develop academic gaps.
- Many students have begun developing feelings of anxiety towards mathematics.

Purpose of the Study

The ultimate purpose of this action research study was to determine whether the use of music when teaching mathematics in the second-grade classroom would support students in either making academic growth, or help them develop a more positive attitude and relationship with mathematics overall.

Figure 1- Academic Growth from pre- to post- assessment.



Methodology

Design:
- Action Research (Mixed Methods)

Instrumentation:
- Pre-assessment
- Pre-survey
- Post-assessment
- Post-survey

Participants:
- 8 participants, 2nd graders (7-8 years old)

Setting:
- 2nd Grade Classroom in a suburban district in Southern California.

Analysis:
- Data was organized in an Excel spreadsheet.
- Results for assessments were based on rubric, attitude surveys were based on a Likert type scale.
- Graphs were made to represent both academic achievement and attitude.

Limitations:
- Academic abilities of participants
- Sample size

Results

Data was collected in the form of pre-assessments and pre-surveys, as well as post-assessments and post-surveys. Pre-data was collected before the music intervention, and post-data was collected after the mathematics unit was taught with the music intervention.

Overall, both the assessment and survey data collected during this study portrayed positive results:

Academic Growth:
- 100% of participants either demonstrated growth in math achievement after receiving the intervention OR remained at full mastery based on the rubric.

Attitude Growth:
- Pre-survey results demonstrated that 5/8 students viewed math as fun. Post-survey results after music intervention showed that 8/8 students viewed math as fun.
- Pre-survey results demonstrated that 6/8 students look forward to math in class, but post-survey results showed 8/8 students look forward to math.

Figure 2- Student attitude towards math, pre-survey.

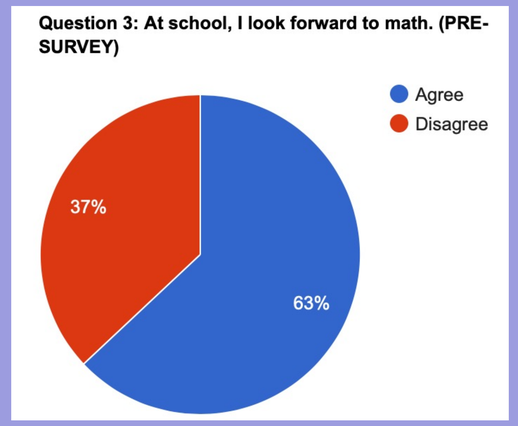
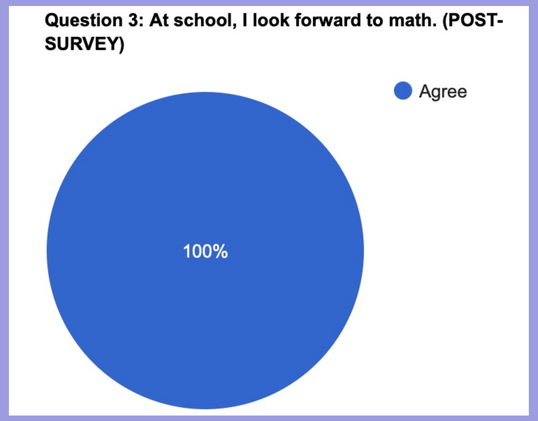


Figure 3- Student attitude towards math, post-survey.



Implications

Utilizing music as a tool to provide both academic and emotional support to students when teaching mathematics can be beneficial for all students, teachers, and communities.
- Pre- and post-assessment data demonstrates academic improvement after receiving music intervention.
- Pre- and post-survey data demonstrates growth in attitudes towards mathematics after the inclusion of music.
- Teachers can utilize music a a way to not only engage their students, but also to help them meet standards.