

# What Works Clearinghouse



July 2012

## WWC Review of the Report “Academic Music: Music Instruction to Engage Third-Grade Students in Learning Basic Fraction Concepts”<sup>1,2</sup>

The findings from this review do not reflect the full body of research evidence on *academic music interventions*.

### What is this study about?

The study examined the effectiveness of using music instruction to teach basic fraction concepts to third-grade students.

Sixty-seven students in four classrooms from one northern California elementary school participated in the study over a six-week period. Two classrooms were nonrandomly selected to receive the intervention.

Instruction in the two intervention classrooms was delivered by a two-person team, a music teacher and a university researcher. The two other classrooms served as the comparison group and received the regular mathematics instruction from their classroom teachers.

The study compared student outcomes by analyzing student performance on a music notation test, a fraction concepts test, and a fraction computation worksheet.

### WWC Rating

***The research described in this report does not meet WWC evidence standards***

**Cautions:** The intervention was implemented by a single team consisting of a music teacher and a university researcher. Their teaching abilities may have affected student achievement even in the absence of the intervention. Therefore, it is not possible to separate the effect of the intervention from the effect of their teaching abilities.

### Features of *Academic Music Instruction*

During *academic music instruction*, music notation is used to teach fraction concepts.

In this study, the intervention was delivered by a music teacher and a university researcher in place of regular math instruction for two days per week for six weeks, for a total of 12 lessons.

In the first six lessons, students were taught to use musical rhythms to count time and note symbols to represent units of time in music.

In the next six lessons, instruction shifted to more formal mathematics language, representation, and symbols. Lessons demonstrated concepts of fraction size and equivalence using symbols for musical rhythm and counting time in music.

### What did the study find?

The study reported that students in the music intervention had a greater understanding of music notation and fraction computation, but not fraction concepts, than students who did not receive the music intervention. In addition, the study reported a positive effect of the intervention on all three outcomes for low-performing students.

However, the WWC does not consider these results to be conclusive because the intervention was delivered by a single team of a music teacher and a university researcher. The reported differences might reflect the impact of the teaching ability of the team, rather than the impact of the academic music program, on student achievement.

### Endnotes

<sup>1</sup> Full study citation: Courey, S. J., Balough, E., Siker, J. R., & Paik, J. (2012). Academic music: Music instruction to engage third-grade students in learning basic fraction concepts. *Educational Studies in Mathematics, 0013-1954*, 1–28. doi: 10.1007/s10649-012-9395-9.

<sup>2</sup> Single study reviews examine evidence published in a study (supplemented, if necessary, by information from requests to the author[s]) to assess whether the study design meets WWC evidence standards. The review reports the WWC's assessment of whether the study meets WWC evidence standards and summarizes the study findings following WWC conventions for reporting evidence on effectiveness. This study was reviewed using the Single Study review protocol, version 2.0. A quick review of this study was released in April 2012, and this report is the follow-up review that replaces that initial assessment.

### Recommended Citation

U.S. Department of Education, Institute of Education Sciences, What Works Clearinghouse. (2012, July). *WWC review of the report: Academic music: Music instruction to engage third-grade students in learning basic fraction concepts*. Retrieved from <http://whatworks.ed.gov>.