Music-themed mathematics education as a strategy for improving elementary preservice teachers' mathematics pedagogy and teaching self-efficacy.


Summary: This study investigated the effects upon elementary preservice teachers’ mathematics teaching self-efficacy and interdisciplinary lesson design strategies, which resulted from an educational intervention that emphasized integrated music-mathematics instruction. The participating elementary preservice teachers (n = 152) were recruited for this study from the College of Education students enrolled at a medium-sized southwestern research university in the United States. Several sources of data were collected, including pre- and post-intervention surveys assessing self-efficacy for mathematics teaching and interdisciplinary-themed instructional design. The overall findings from both surveys indicated that the participating preservice teachers’ mathematics teaching self-efficacy and their interdisciplinary teaching strategies were improved as a result of the intervention. This paper concludes with a discussion of the potential applications to pedagogical practice that accrue from the study’s findings, as well as suggestions for further research extending this line of inquiry.

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Keywords: preservice teacher education; research; teaching efficacy; self-efficacy; interdisciplinary approach; curriculum; music; arts-based education; mathematical cognition; teacher attitudes

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