AN INVESTIGATION OF THE FLIPPED CLASSROOM IN ALGEBRA TWO WITH
TRIGONOMETRY CLASSES

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Abstract

The flipped classroom is a growing phenomenon in teaching methodology in which teachers assign students to watch video lectures prior to coming to class. During class time, students collaborate with other students and their teacher on assignments that were previously considered homework. The purpose of this study was to (a) discover if there is a difference in student achievement between classes taught in the flipped classroom method and the traditional method of teaching and (b) determine if there is a difference between students’ preferred learning style and their achievement in a flipped classroom. This study took place at a public high school in the mideastern part of the United States and encompassed four Algebra Two with Trigonometry classes for a total of 113 students. At the beginning of the study, students took the VARK Questionnaire to identify their preferred learning style (i.e., visual, aural, read/write, and kinesthetic). Two of the four classes participated in a regular-style classroom, the remaining two participated in a flipped learning classroom. At the end of the study, all students took the same textbook publisher-created postassessment. A two-way analysis of variance was completed to investigate the difference between the achievement in the flipped classroom and the traditional classroom and the difference between learning styles and achievement in a flipped classroom.

Quantitative data showed that the mean of the end-of-unit publisher-created assessment score in the traditionally taught class ($M = 87.77$) was slightly higher than the flipped method classroom ($M = 85.5$), but it was not a statistically significant difference in the difference in an end-of-unit publisher-created assessment in a flipped versus a traditional high school Algebra Two with Trigonometry classroom. The study also showed no statistically significant difference between learning style and student achievement. When students were given the opportunity to comment on the flipped classroom, the majority (73.08%) of students who responded preferred being
taught in the traditional method. The implication is that, while the flipped classroom is a viable alternative option to the traditional way of teaching, it does not seem to necessarily be a better method of teaching.