THE EFFECTS OF ANIMATED AGENTS WITH VERBAL AUDIO ON MATHEMATICS COMPREHENSION AND ATTITUDES

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ABSTRACT

This doctoral study investigated the effect of animated agents with verbal audio in WBI on mathematics achievement and attitudes toward mathematics and computers using a pretest-posttest control group design model among eighty-one college students who enrolled in Pre-Calculus courses at a doctoral/research-extensive university. It verified quantitatively that the presence of animated agents with verbal audio in WBI can improve students’ mathematics achievement and attitudes toward mathematics, but not their attitudes toward computers. In particular, students in the experimental group practice effect improved, but not their application effect. In addition, this study verified that there exist a positive association between a student’s attitude toward mathematics and his attitude towards computers and vice versa, and there exist a positive association between a student’s satisfaction with WBI and her attitudes toward mathematics. Designers and developers of WBI can use these findings to better design, develop, and implement a web-based tutorial that promotes positive attitudes toward learning and long-term mathematics achievement in the postsecondary mathematics arena.