Abstract

The aim of this project is to examine the effectiveness of virtual manipulatives to aid students with disabilities and students who struggle in the general education mathematics classroom. The learning objectives for this project are aligned with the Common Core State Standards for Algebra 1 to learn how to calculate geometric properties of two- and three-dimensional shapes and figures. To accomplish these objectives, researchers will conduct a single subject multiple baseline design to investigate the functional relation between virtual manipulatives and the ability of a small number of students with learning disabilities to solve area and perimeter word problems. A maximum of six secondary students in grades 9-12 identified with a learning disability in mathematics will complete this study. Duration of the study is expected to last a portion of the fall semester of 2017, beginning in September and concluding in late November (i.e., 8-10 weeks total). The findings from this study will inform a professional development seminar for teachers at the partnering school focused on disseminating the findings of research conducted on virtual manipulatives, while highlighting the documented benefits, drawbacks, and strategies for effective technology integration in mathematics instruction.

Keywords: learning disability, virtual manipulatives, mathematics