# The Effect of Increasing Sensory Modalities on Retention Rates

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While many think of virtual reality (VR) as a technology that is only used in video games, its interactive features and multi-sensory experience may make it an ideal learning tool. To justify the development and implementation of educational VR applications, research needs to be done to establish whether it effectively increases student learning and retention of the material presented. To determine whether engaging multiple sensory modalities through VR applications improves student learning and retention, participants of varying ages were assigned to one of three study methods to learn about the cardiovascular system. The study methods used were Quizlet flashcards (visual only), a PowerPoint presentation (visual and auditory), and ShareCare VR (visual, auditory, and kinesthetic). After taking a pre-test, students had 20 minutes to study their assigned method. They took a post-test, immediately following the study session and then again at one-week intervals for the following month. Learning gains and retention over time were compared between the 3 study methods. Students in the VR group preformed significantly better ($p < 0.05$) than either of the other two study methods both in initial learning and in retention of the material over the 4-week period. This research indicates that VR can be effectively used in the classroom to increase learning gains and retention and suggests that future developments in VR educational platforms may revolutionize our current educational system.

**Awards Won:**