

Overview

Ground in the Cognitive Affective Model of Immersive Language (CAMIL), this research posits that VR's efficacy depends on both working memory capacity (WMC) and the type of knowledge being constructed. Therefore, gaze-based instructional scaffolding that highlights relevant information could be particularly beneficial for individuals with low WMC when learning complex conceptual relationships of microelectronic structure through VR. To explore this, the project will conduct three interrelated studies. Study 1 will examine how WMC influences learning strategies in VR. Study 2 will use these insights to develop an adaptive VR system that delivers dynamic scaffolds. Finally, Study 3 will integrate this adaptive system into an existing microelectronics curriculum at the University of Florida, assessing its potential in real classroom settings.