

INTEGRATED VIRTUAL REALITY FOR A MOTIVATING AND EFFECTUAL LANGUAGE-LEARNING EXPERIENCE

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Abstract

The increased globalization of STEM fields and the resulting needed multilingualism provide ample reason to infuse language classrooms with responsive and immersive technologies. Furthermore, technology has proven to be a powerful resource to motivate students, regardless of the field. Early results show that the use of immersive technology positively affects both motivation and retention, and that students desire these types of technology and resources in more of their courses.

Study Design and Results

For the pilot, a San Antonio high school teacher volunteered his 6 Spanish classes. Forty-five students were included as either participants (33) or control group (12), with the control assigned randomly to every fourth student. The average age of students was 15, and 35 of 45 were heritage Spanish speakers. All students were given a pre-test designed with accepted language testing methods (vocabulary matching-13Qs, short answer writing-4Qs, and oral phrase translation-6Qs). Participants were given the following resources to practice selected topics: virtual reality (VR) headsets, tablets, and an immersive language learning program called *ImmerseMe*. The control group was distributed paper transcripts from *ImmerseMe* to study. Then both groups were given post-tests (test-retest model (Moskal & Leydens, 2019)) and an ARCS-V-based survey (Keller, 2016). Results indicate a positive impact of the VR technology on student motivation and engagement (see Table). Participants expressed a desire for VR in their other courses. It is

recommended that language learning be integrated into STEM courses and vice versa in order to strengthen student success and motivation in STEM fields (Crum, 2022). The 12 control group members had zero improvement on writing or speaking and experienced a decline in the post-test vocabulary ID section. Thirteen participants had perfect vocabulary ID on both tests. The remaining 20 participants improved by 6% on average, and their writing and speaking showed slight improvement. These post-test results are not statistically significant but are further explained below.

SURVEY RESULTS (33 PARTICIPANT ANSWERS)	% of Responses		
	Pos.	Neut.	Neg.
The VR lessons increased my curiosity and enjoyment in learning.	87.88	12.12	0.00
My interest grew when VR technology was used in teaching.	84.85	15.15	0.00
The use of VR in the lessons motivated me to try harder to learn the topic.	66.67	27.27	6.06
I am interested in participating in additional VR/AR activities in more of my courses.	78.79	21.21	0.00

Challenges and Improvements

Acclimation and lessons were limited to 30 minutes, resulting in a slight improvement with the participant group. Future phases will allow for extended time. We expect that, as in our previous college student study, a significant skill improvement will occur. Five from the control group verbally expressed displeasure with being in the control, even knowing they would be allowed to play games on the headsets later. In the next phase, students will be their own controls, testing on lessons they did/did not experience.

References

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