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CHALLENGES IN THE ADOPTION OF VIRTUAL REALITY IN EDUCATION: AN ACTION RESEARCH APPROACH

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ABSTRACT: This research is situated within the broader context of the ongoing digital transformation and technological advancement in education, with particular emphasis on the integration of Virtual Reality (VR) into pedagogical practices. Despite the growing interest in immersive environments, particularly those referred to as "metaverses", the effective adoption of VR in educational contexts continues to face numerous challenges, including technical, pedagogical, and organizational barriers. This study aims to examine these problems by implementing and monitoring VR technologies at an international school, as part of an educational innovation initiative endorsed by the STEAM committee (Science, Technology, Environment, Arts, and Mathematics). A cyclical and reflective action research technique was employed, facilitating iterative planning, execution, observation, and adjustment of actions in response to evolving demands and limitations. The study began with an exploratory phase that included documentation analysis, equipment selection, and a training session for Mathematics and Science instructors of the 8th, 9th, and 10th classes. A total of eight action research cycles were conducted, with two Mathematics teachers overseeing four 8th-grade and four 9th-grade classes. Notwithstanding the specific setting of the institution examined, prevalent trends and challenges - pedagogical, technical, and social - were discerned. These findings may inform future practices regarding the integration of VR in diverse educational settings, while also contributing to the broader discourse on the use of immersive technologies in teaching and learning.

KEYWORDS: Virtual Reality, Educational Innovation, Action Research, STEAM Education, Digital Transformation in Education, Teacher Training, Pedagogical Integration