Truckenmueller et al. in a prospective study assesses the acceptance and usefulness of augmented 360° virtual reality (VR) videos for early student education and preparation in the field of neurosurgery.

Thirty-five third-year medical students participated. Augmented 360° VR videos depicting three neurosurgical procedures (lumbar discectomy, brain metastases resection, clipping of an aneurysm) were presented during elective seminars. Multiple questionnaires were employed to evaluate conceptual and technical aspects of the videos. The analysis utilized ordinal logistic regression to identify crucial factors contributing to the learning experience of the videos.

The videos were consistently rated as good to very good in quality, providing detailed demonstrations of intraoperative anatomy and surgical workflow. Students found the videos highly useful for their learning and preparation for surgical placements, and they strongly supported the establishment of a VR lounge for additional self-directed learning. Notably, 81% reported an increased interest in neurosurgery, and 47% acknowledged the potential influence of the videos on their future choice of specialization. Factors associated with a positive impact on students' interest and learning experience included high technical quality and comprehensive explanations of the surgical steps.

This study demonstrated the high acceptance of augmented 360° VR videos as a valuable tool for early student education in neurosurgery. While hands-on training remains indispensable, these videos promote conceptual knowledge, ignite interest in neurosurgery, and provide a much-needed orientation within the operating room. The incorporation of detailed explanations throughout the surgies with augmentation using superimposed elements, offers distinct advantages over simply observing live surgeries [1)]

1)
Truckenmueller P, Krantchev K, Rubarth K, Früh A, Mertens R, Bruening D, Stein C, Vajkoczy P, Picht T, Acker G. Augmented 360° 3D virtual reality for enhanced student training and education in neurosurgery. World Neurosurg. 2024 Jan 23:S1878-8750(24)00103-7. doi: 10.1016/j.wneu.2024.01.092. Epub ahead of print. PMID: 38272307.