

Virtual Reality in Ophthalmic Surgical Education: Current Innovations and Future Perspectives [Response to Letter]

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Dear editor

We thank Lansingh et al for their thoughtful analysis of our Perspective article on the role of virtual reality (VR) modalities in ophthalmic surgical education. They highlight important considerations regarding the use of the AAO VR Education App, as well as the distinction between construct validity, which we emphasized as evidence that a simulator can differentiate users of varying skill levels based on performance, and other forms of VR simulator validation.¹ We agree that the AAO VR Education App is currently best characterized as a tool for ophthalmic education rather than surgical training, an important distinction to make given our paper's primary focus on surgical education modalities.

Lansingh et al emphasize the importance of considering face and content validity alongside construct validity when evaluating VR modalities. As they note, face validity refers to the perceived realism of a simulator when compared to actual surgery, while content validity reflects whether the simulator incorporates the relevant skills and tasks it is intended to train.²

In a related publication, Nair et al note that construct validity remains a critical component of simulator evaluation,² and we agree that validity should be evaluated across multiple complementary domains. Methodologically, face and content validity are often assessed through structured expert or user feedback, whereas construct validity is more commonly supported by objective simulator-derived performance metrics, such as error rates, task completion, instrument handling, or overall module scores.²⁻⁴ Thus, our emphasis on construct validity reflected its utility for comparing the degree to which different platforms have demonstrated performance-based validation.

As noted by Lansingh et al, evidence of content validity has been reported for Eyesi and HelpMeSee, and face validity has also been demonstrated for HelpMeSee.⁵⁻⁷ To our knowledge, comparable face and content validity data remain limited for several emerging platforms discussed in our article, including Meta Quest-based applications and the Apple Vision Pro. Importantly, the absence of such data does not imply that these platforms lack face or content validity; rather, it indicates that their validation status remains unclear. We thank the authors for highlighting this important distinction and agree that future studies should define the specific validity domains they aim to evaluate.⁷

We agree with Lansingh et al that future studies of VR models should use standardized methods to establish face, content, and construct validity evidence across emerging platforms. Such efforts will be important for accurately comparing each model's ability to support ophthalmic surgical training. We appreciate the authors' thoughtful correspondence and agree that careful attention to distinct forms of validity will strengthen future evaluations of VR-based surgical education.

Disclosure

The authors report no conflicts of interest in this communication.

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