

## Virtual reality in medical training

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The authors would like to extend their appreciation for the commendable endeavor in exploring the efficacy of virtual reality (VR) as an educational tool within medical schools found in the paper titled “VR experiences in medical education: A systematic literature review” published recently in the Yemen Journal of Medicine [1]. As passionate advocates for innovative education methods, particularly within the field of medical training, the research presented in this paper was found to be both enlightening and pivotal. The ever-evolving landscape of medical education demands novel approaches that can prepare students for the intricacies and challenges of modern health care. In this regard, the authors’ comprehensive investigation into the utilization of VR technology is not only timely but also immensely relevant, as the integration of VR into medical education holds the promise of transforming the way students learn, practice, and ultimately deliver patient care. Although as noted in the manuscript, there was little data to analyze and further investigation is warranted to discern the validity and scale of this augment in education, change is needed. Therefore, the authorial team calls for stratifying the investigative efforts in the utilization of VR in medical education to further improve patient outcomes and provide an effective augment to medical training.

The applications of VR extend far beyond that of a medical school anatomy course, and halting the expansion of its growth in the field of medicine could be considered wasted potential, to say the least. Many subspecialties in medicine could gain a clear benefit from the utilization of VR, most notably, those of surgical specialties. Numerous published works discussing VR applications state that this can be a great tool for medical education, many citing the use of its potential for surgical training, specifically [2]. In the present day, there are a wide variety of excellent VR applications that can be used for medical and surgical training. Many of these applications are being severely underutilized as many health-care institutions are still unsure of their desire to incorporate this technology into standard clinical

practice [3]. Multiple applications such as Embodied Labs, Touch Surgery, Floreo, XRHealth, SyncThink, Surgical Theatre, Osso VR, KindVR, Karuna Labs, and more have the potential to aid both health-care professionals as well as patients in various ways. By continuing to underutilize this technology, the field of health care is denying advancements that may save the lives of many patients in the future. Whether it be used for training or active clinical practice, VR and augmented reality technology an additional tool at the disposal of the medical field to save lives, and to see it not be used to its full potential is disconcerting in many ways.

Although the authors value this systematic analysis in the field of VR, what would be further valuable is how it underscores the necessity for additional advancements in the field, rather than just creating excessive enthusiasm or over-claimed promises. While technology has undoubtedly ushered in numerous advancements in the human world, it has also introduced complexities and uncertainties into various systems. Despite this systematic literature review of the use of VR in medical school anatomy education highlighting several potential benefits, it regrettably lacks robust research data, real-world applications, and other potential disciplines, such as surgery. While the concept of incorporating VR into medical education may seem promising, it is crucial to acknowledge that practical implementation may reveal significant discrepancies and hence the underusage of this technology thus far. The potential misrepresentation of education with VR needs to be quantified and analyzed to prevent overestimation of the capabilities in real-world scenarios. Therefore, it is the authorial team’s highest recommendation that more substantial and practical research should be conducted in the field of VR to unveil its true benefits in the future.

### AUTHORS’ CONTRIBUTIONS

All authors contributed to the completion of this work. The final manuscript was read and approved by all authors

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