

# Student Physical Therapists' Experience Using Virtual Reality Simulation: A Qualitative Study

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## Purpose

Educational technology, such as virtual reality (VR) simulation, is becoming increasingly prevalent across health professions curricula. VR instruction has been reported to enhance self-efficacy, critical thinking, and decision-making skills. The purpose of this study was to explore students' experiences, beliefs, and feelings when using VR simulation in a musculoskeletal course.

## Subjects

Student physical therapists (SPT) in their first year of study in a DPT program participated in VR simulation. Students were invited to participate in one of three focus groups to discuss their experiences. Students must have completed their first semester, participated in the VR learning experience, and were excluded if they had previous VR experience.

## Materials/Methods

Three focus groups were held, two in person and one online, with a total of 18 participants. The semi-structured interviews lasted between 40-60 minutes. The questions emphasized the perceptions, beliefs, and feelings participants had towards the VR experience. Audio data was recorded and transcribed verbatim. Investigators analyzed the initial data with a phenomenological approach using content analysis to discuss themes after data collection, which was gathered verbatim.



## Results

### Major Themes from Student Groups:

- Student participants agreed that there was value and benefit associated with the VR experience.
- Most SPTs agreed the VR experience should not replace the hands on practice associated with the current curriculum.
- Most SPTs also agreed that the VR experience should provide more clinical reasoning decision-making to promote autonomy.
- Students felt that their knowledge was reinforced through this experience.

### Sub-Themes from the Themes from the Student Group:

- The VR experience would be better if the timing of the simulation was earlier in the semester and completed with minor modifications (to improve ease of use and user experience).
- The VR experience should be utilized for practice in addition to the learning the material.
- Students felt that the low stress experience associated with VR allowed the students to immerse themselves.

## Conclusion and Clinical Relevance

VR simulations are not widely used in current physical therapy curricula. From this study, there are varying opinions regarding best practice in a DPT curriculum. Overall, students felt that the VR had value and enhanced their learning experience. Students also felt that modifications should be implemented to promote autonomy and simulations should challenge the current clinical reasoning skills. VR can be clinically relevant as it may enhance confidence and self-efficacy in clinical decision-making for SPTs. The immersive sensory environment allows low-stakes practice and an opportunity for students to integrate component parts learned in class into an entire examination.

## Summary of Concept Map

The overall low stress of the experience helped allow the students to discover the value and benefit of VR and how it can be integrated into the curriculum. Students commented on the overall experience with the technology, having prior knowledge of the pathology, the desire to have more self-guidance, the ideal timing of the VR experience, and its potential future instructional integration. Students noted that these changes could enhance the value and benefit of this experiential learning technique. The major and minor themes discovered from the focus groups supported the overall transfer of material to clinical applicability.

