

Virtual Reality Simulation and Self-Efficacy

Theresa Keegan BSN, SRNA; Maribel Mueller BSN, SRNA; & Balee Winters BSN, SRNA

Christina Mandalis-Defour, DNP, CRNA, APRN; Todd Larson, BSN, RN, MSIT, CNOR; Mohtashem Samsam, MD, PhD

AdventHealth Doctor of Nurse Anesthesia Program

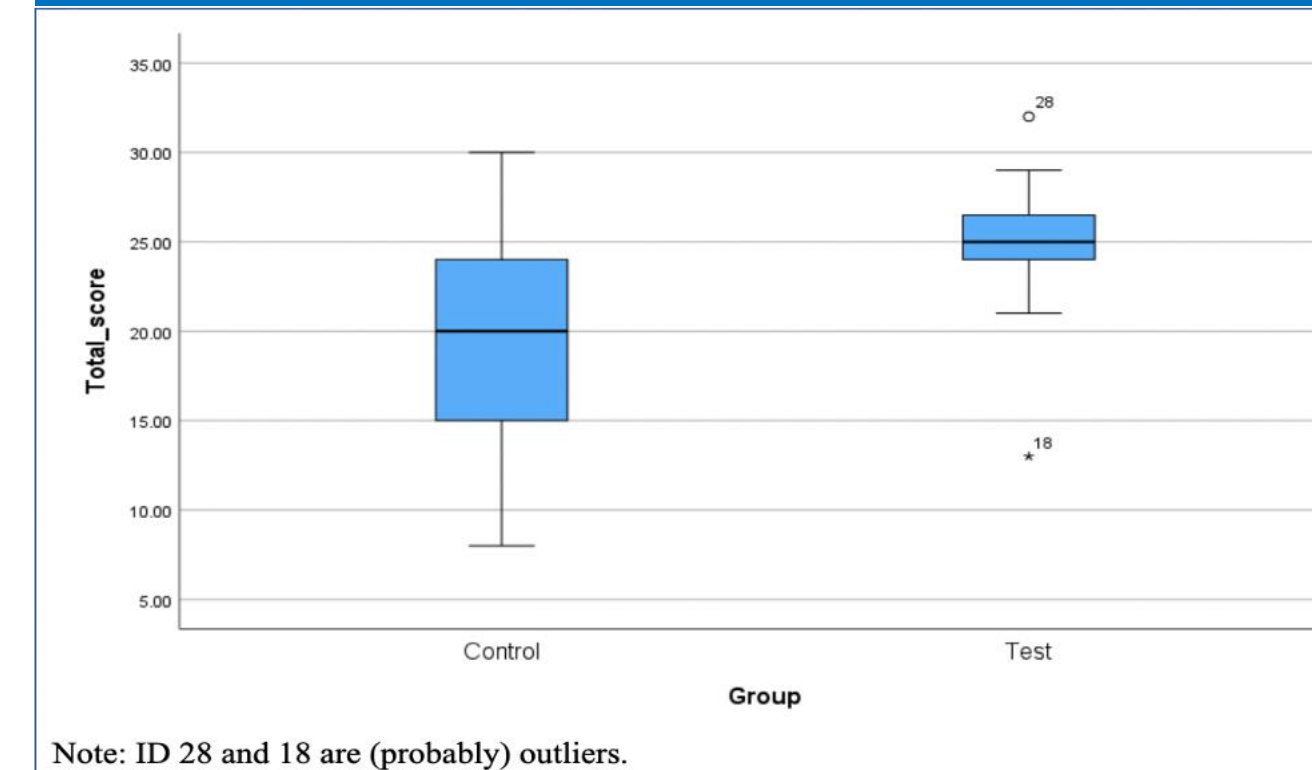
Problem

- Traditional training tools may not reflect real-life airway anatomy, which could lead to anxiety and intubation failures for SRNAs.
- VR technology offers an immersive and safe environment for students to practice clinical skills.
- There is limited research surrounding VR use in CRNA education, presenting an opportunity to explore if VR can improve self-efficacy and preparedness for clinical practice.
- The DNAP Program at AHU does not currently utilize the Anatomage tables.

Methods

- Quasi-experimental, two-group, post-test design assessing self-efficacy and perceived readiness post-Anatomage table training for airway anatomy
- Convenience sample (n = 29) from AHU's 2026 DNAP cohort, randomly split into control/intervention groups
- Anonymous post-learning session survey using a QR code linked to a Self-Efficacy Scale (SES) based on Bloom's taxonomy
- Wilcoxon Sum Test compared self-efficacy, preparedness, and readiness mean values between groups

Illustration



Discussion & Implications

- Significant increase in cognitive and affective scores post-Anatomage Table training ($p < 0.05$), demonstrates an increase in SRNAs' self-efficacy and clinical preparedness.
- Recommendations for Anatomage table implementation within AHU's DNAP program and to further explore how VR can improve nurse anesthesia education

Literature Review

- Simulation training is widely used in graduate-level healthcare training.
- Limited evidence focuses on use for medical and PA students, not SRNAs.
- Self-efficacy, considered crucial for improved clinical performance, is positively impacted by high-fidelity learning environments, including VR platforms.
- The Anatomage Table has demonstrated increased confidence, preference over traditional methods, improved understanding of anatomy, and more positive engagement among students.

Results

- Median self-efficacy score using Likert Scale for test group was 25 among 15 participants
- Median self-efficacy score using Likert Scale for control group was 20 among 15 participants
- The median score difference of 5 on self-efficacy for the test and control groups is statistically significant demonstrating the test group feels more confidence and readiness to intubate in the clinical setting.

More Results

- Tighter IQR shows range of scores is less spread out with students more confident across all data points.
- Tighter IQR in test group showed more students felt confident across all data points while loose IQR in control group showed participants had varied confidence across all data points, lower than that of the test group.

Conclusions

- Anatomage tables proved significantly effective for novice nurse anesthesia students in airway anatomy training.
- Strongly recommend integrating Anatomage tables into AHU's DNAP program for future cohorts

Illustration

Ranks				
	Group	N	Mean Rank	Sum of Ranks
Total score	Control	15	12.03	180.50
	Test	15	18.97	284.50
	Total	30		

Acknowledgements

- Steve Fowler, DNP, CRNA, ARNP
- Tho Nguyen, MPH
- AHU's Simulation Department

