

Reimagining the Status Quo: Nursing Curriculum Transformation with Virtual Reality

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Abstract

Nightingale College is focusing on innovative, evidence-based design, including a multiyear VR project for nursing education. The VR project aims to enhance clinical reasoning and practical skill building through simulated nursing environments.

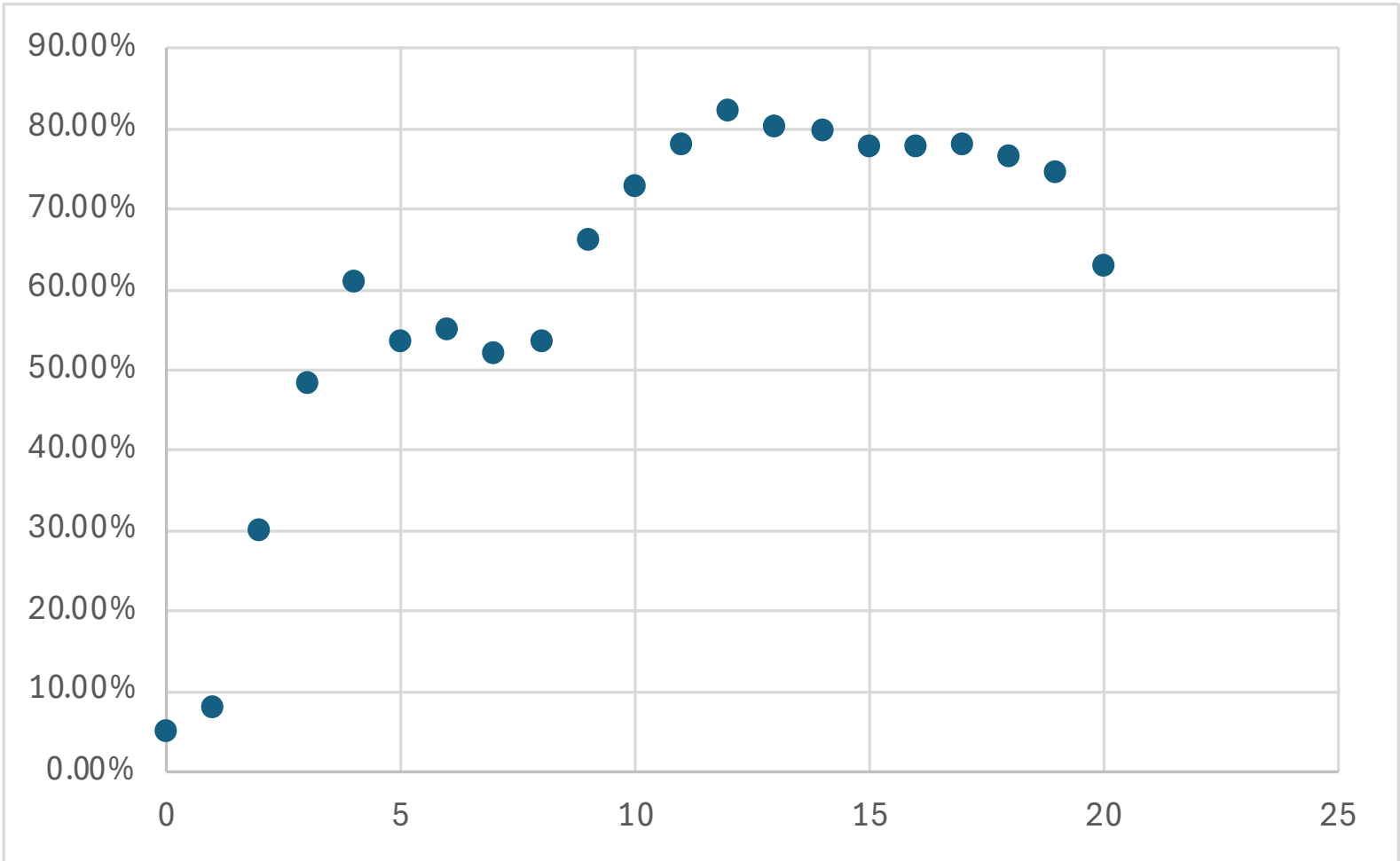
Learners use VR headsets to practice in a virtual environment with typical nursing scenarios, personalized feedback, performance metrics, and faculty debriefs. Pilot data showed excellent student feedback and improved outcomes in critical thinking and clinical reasoning. Some learners use screen-based versions for academic accommodations and ADA compliance. Faculty training comfort with the tools and disaggregating data to ensure no subset of the population is negatively impacted are ongoing areas of focus.

The poster discusses the multiphase rollout approach, challenges, interventions, updated data, future augmentation, policies around VR/screen-based usage, curriculum changes, and customized VR solutions.

Background

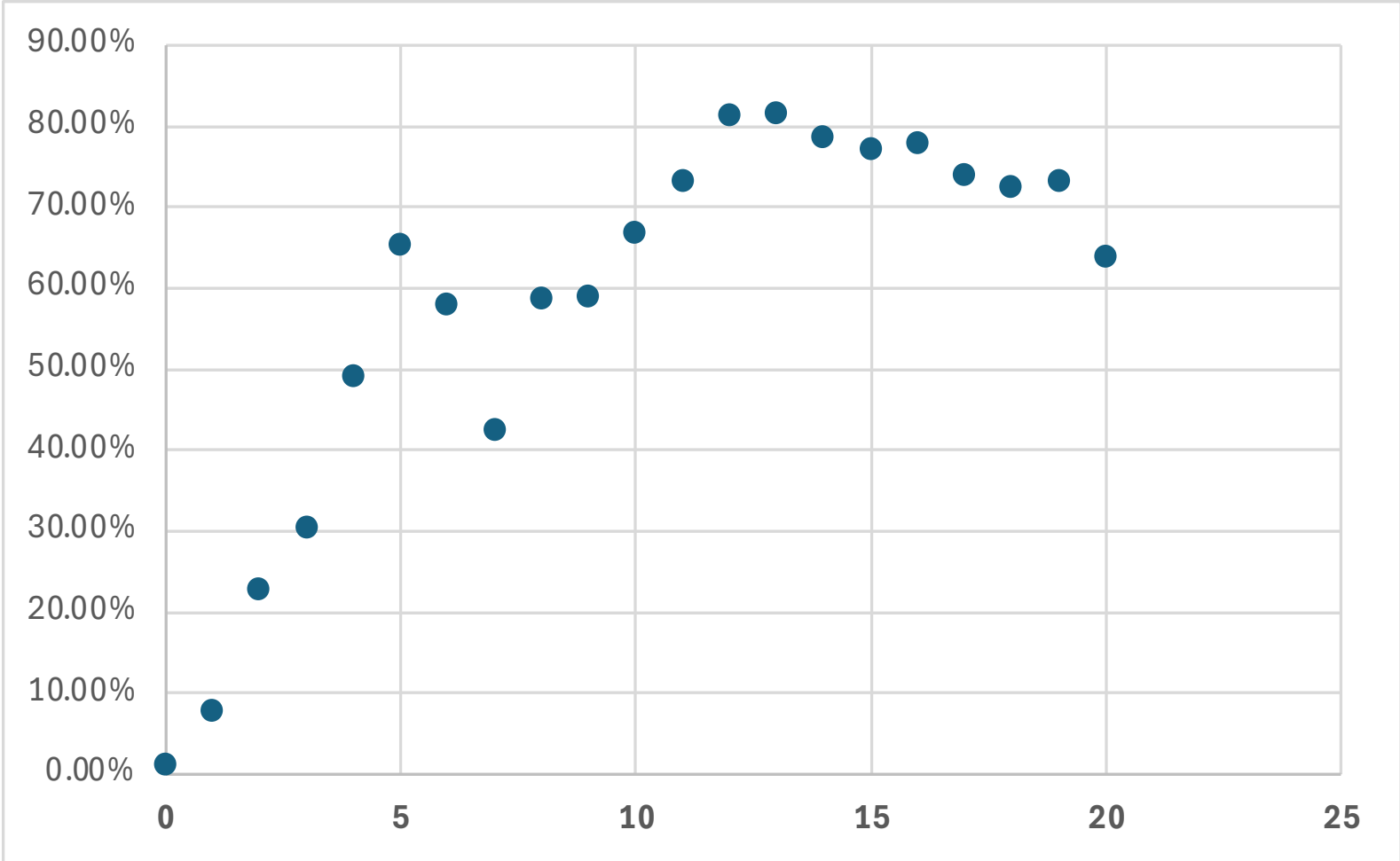
The COVID-19 pandemic in 2020 highlighted challenges in traditional direct patient care education. A multiphase curriculum innovation using Virtual Reality (VR) aimed to address these issues. Initially, 2D computer-based simulations were integrated into a course to support learning. After a successful pilot, the curriculum expanded to include a 3D environment, ensuring proper scaffolding for distribution, technical support, and faculty engagement.

Over the past year, VR simulations were integrated into all clinical courses in the undergraduate nursing curriculum, with plans to include non-clinical courses and soft skills training. The curriculum employs a distance education model, dividing experiential learning into Intervention Skills-Based (ISB) instruction, Virtual Case-Based Client Care (VCBC) practice, and Direct-Focused Client Care (DFC) experiences.

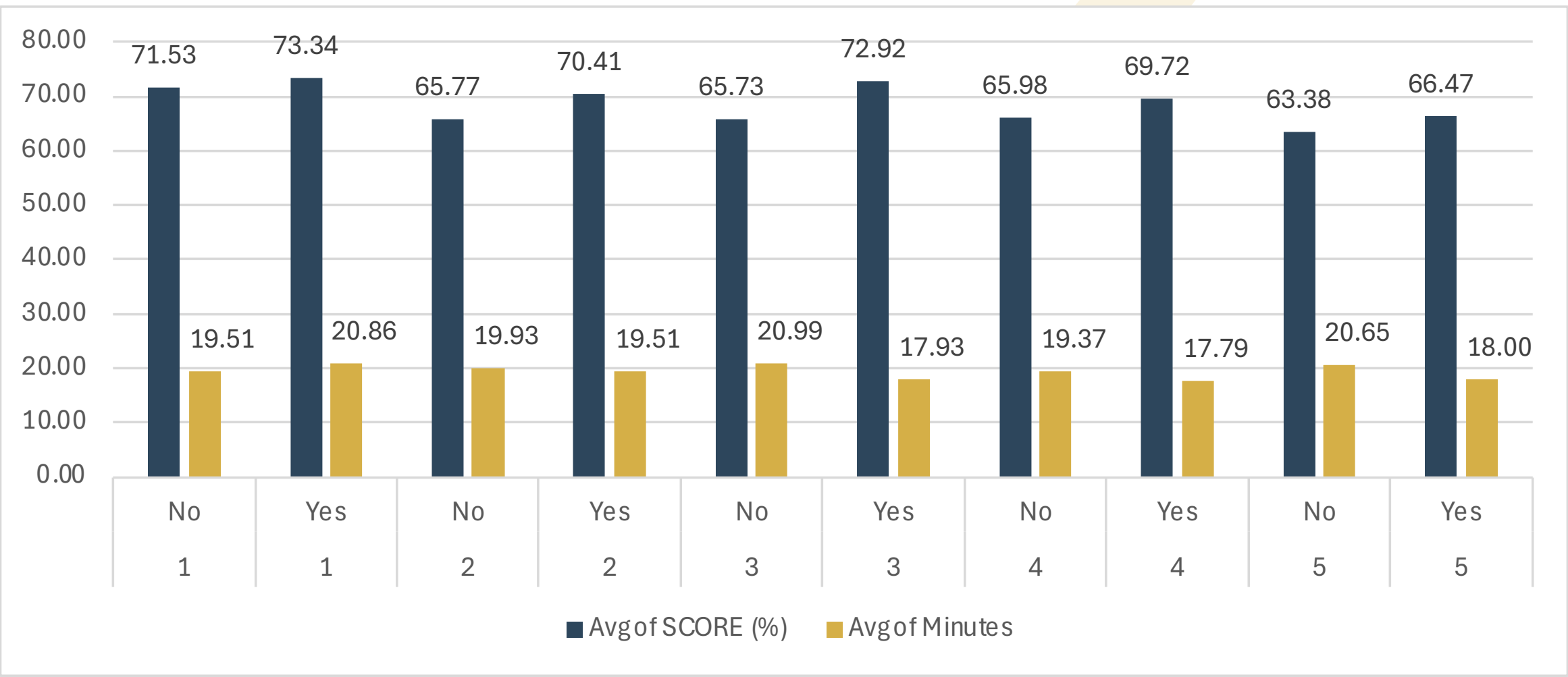


Score (%) by Minutes- Goggles

The scatter graph compares time spent in simulations between groups using 3D goggle headsets (left) and 2 screen-based environments (right). The 3D goggle group scored 5.59% higher on assignments, with a positive correlation between scores and simulation time in both groups.



Score (%) by Minutes- 2D



Average score and minutes by attempt between 3D and 2D groups

The average score decreases as attempts increase, especially after attempt 4, indicating less time spent on later attempts. The 3D goggle group scores higher with fewer attempts at a singular simulation. While both groups can score similarly within a margin of error, 3D goggles groups score marginally higher in fewer attempts and less time.

Challenges

The exact reasons for the slight performance difference between 2D and 3D environments are still being investigated to ensure ADA accommodations don't disadvantage learners. Additional interventions are being explored to address potential performance gaps.

Next Steps

VR technology has achieved significant success with High-Fidelity simulation rollouts in 2D and 3D modalities since 2021. The ongoing review of performance disparities among subpopulations continues. New VR scenarios must be validated with each introduction, and further assessment of knowledge transition from simulated reality to clinical practice is needed.

For Additional Information and Citations

