

Leveraging Immersive Virtual Reality Simulation to Assess Competence: Promising Preliminary Findings

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Big 10 Practice Ready Nurse Initiative Team



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Practice-Ready Nurse Graduates



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Background



Challenge: preparing graduates who demonstrate practice ready competencies and navigate highly complex and dynamic care environments.



Competency: requires clinical learning experiences with opportunities to apply and demonstrate the psychomotor and thinking skills needed to care for complex patients



Clinical evaluation: challenging, highly subjective, clinical environment limitations

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Background



Simulation with debriefing: provides a replicated clinical environment to apply nursing knowledge and demonstrate clinical judgment



Immersive virtual reality simulation (IVRS): innovative simulation platform to provide nursing care with immediate formative feedback in numerous patient contexts



IVRS: data analytics to assess competence

Purpose

This study sought to collaborate with an IVRS industry leader to:

- 1) develop immersive competency-based simulation
- 2) pilot test capacity to assess pre-licensure senior nursing students' ability to provide clinically competent care for a complex patient using IVRS generated data analytics

Method

Students from three baccalaureate nursing programs:

- participated in the IVRS experience individually
- received IVRS-generated feedback, and
- participated in group debriefings

Modified 28-item Creighton Competence Evaluation Instrument for VR (CCEI-VR)

- assess 28 behaviors describing students' clinical competence
- Expected minimum behaviors aligned with data analytics

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ASSESSMENT	Expected Minimum Behaviors
1. Obtains initial pertinent data for assigned patient(s).	Seeks the following data for each assigned patient(s): a. Presenting complaint/diagnosis b. Medications c. Allergies d. Pertinent lab results e. Pertinent history
2. Assesses assigned patient(s) in an appropriate and timely manner.	a. Completes initial assessment of assigned patient(s) during the first hour of the shift b. Completes a focused assessment of each patient(s)
3. Performs appropriate follow-up assessments for assigned patient(s) as needed.	a. Reassesses patient for changes throughout the shift

CCEI-VR was used to assess the data analytics generated from each student's performance.

Results

Mean CCEI-VR scores were 18.8 (SD = 3.2) with a range of 13 to 24.

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Discussion

Findings of this study provide initial data about:

- 1) the impact of IVRS on students' clinical competence
- 2) the use of IVRS generated data analytics to objectively assess achievement of nursing competencies.

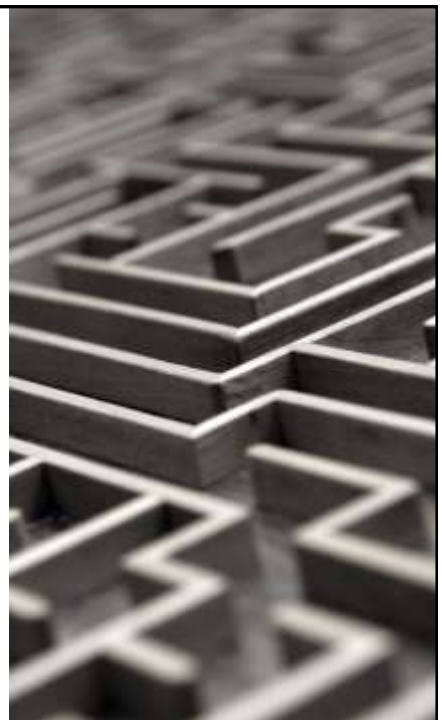


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Limitations

These preliminary pilot findings are an initial step of IVRS in nursing education.

Additional testing with multiple patient scenarios is underway.



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Questions

