Using Escape Rooms to Prepare Nursing Students for Clinical Readiness : A Pilot Study

Brooke Evans and Chaewon Kim

Introduction & Background:

Technology in education has been an up-and-coming catalyst for researchers in aiming to evaluate its most effective methods of use. The specialization of technology-fueled education in the medical/healthcare education setting is a particular area of study that initiated the onset of this project. There exists a theoretical framework of Kolb's Experiential Learning Cycle that consists of four components: active engagement, reflection, theory development, and application. To put it simply, Kolb's cycle emphasizes the idea that the most effective learning is done through doing-and-reflecting. This project combines the introduction of technology in healthcare education and the experiential learning theory framework to provide the foundation for this project's assessment of subject-specific simulation efficacy in fostering deeper learning in a healthcare/medical education setting.

There exists a gap in nursing students with linking technical knowledge to clinical practice. Students' difficulty in transitioning from learning that is done in the classroom to a more demanding hospital environment reveals a major shortcoming of healthcare education.

The end goal of this research is to formulate a bridge between the inside of a classroom and the application of that knowledge in a real hospital setting. This project is an initiation of applying the principles of Kolb's experiential learning theory to the learning process of nursing students at Florida State University, with a greater intention of establishing new approaches using technology to better healthcare education.

Methods:

Figure 1. *Escape room setup*

The study included first-semester nursing students who were placed into an educational "escape room" designed to simulate a real hospital scenario. Students participated in teams of 3-4 members, where each team worked collaboratively to solve problems related to patient care within the escape room.

Students in this study were pre-briefed on the scenario, which involved a patient who had collapsed during a hike and was admitted to the hospital with hypertension. The escape room environment was designed with five lockboxes representing key milestones in the nursing process. Each box contained clues relevant to the patient's condition and necessary care steps. The students used these clues to collaborate, apply nursing knowledge, and make decisions inside the escape room, with educators monitoring the students' progress, providing intercom guidance when needed. Video and audio recordings were made of the students' interactions within the escape room to capture data on their problem-solving approach and communication.

Otter AI transcription technology was utilized to transcribe the audio and video recordings for analysis, allowing for general conclusions about the participants' collaborative problem-solving and clinical performance. Additionally, qualitative survey data collected from the students were cross-referenced with the observational data to assess the overall effectiveness of the experiential learning model and the students' perceived improvements in nursing skills and confidence.
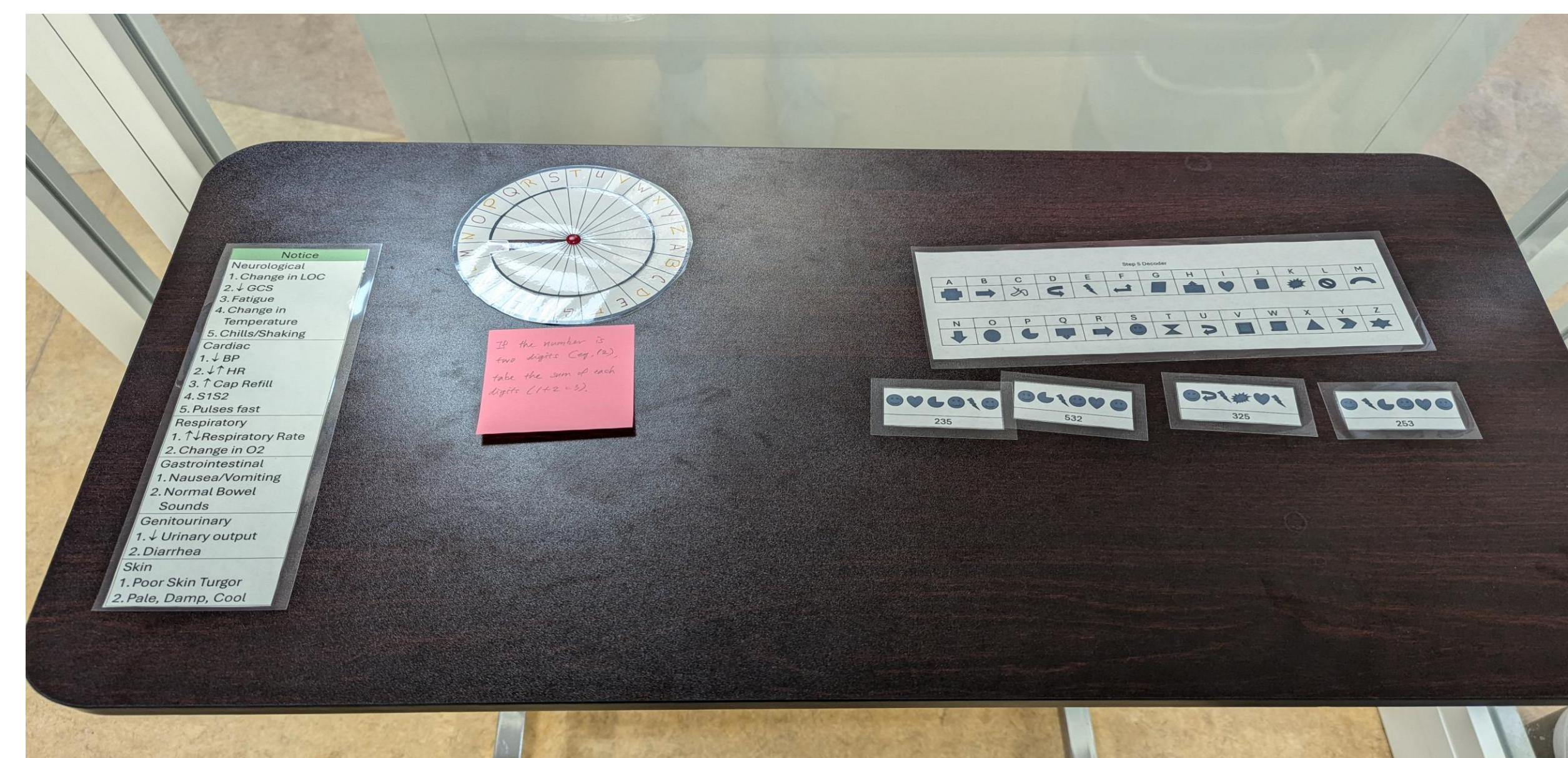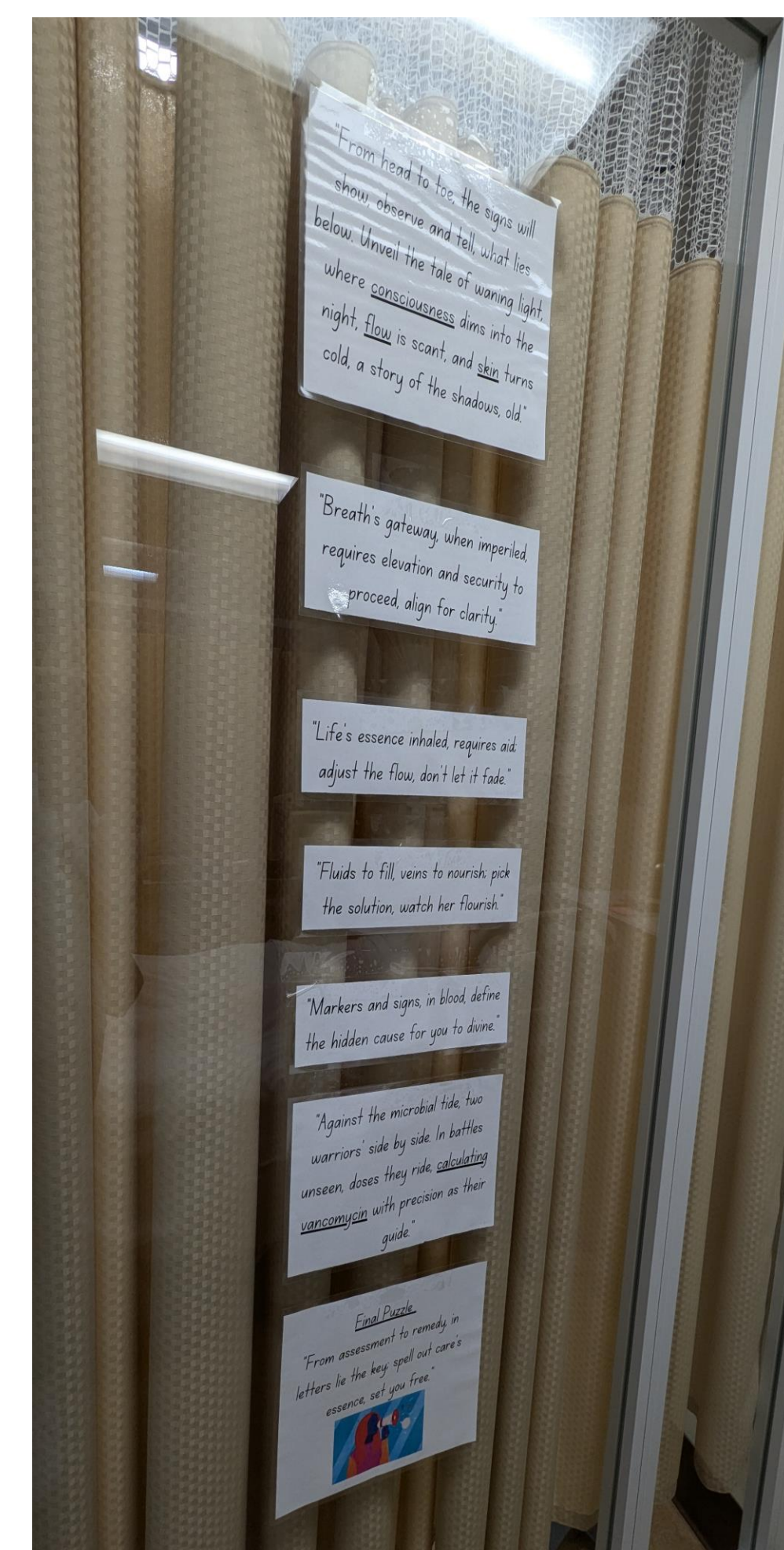

Figure 2. *Escape room clues and "key chart".*
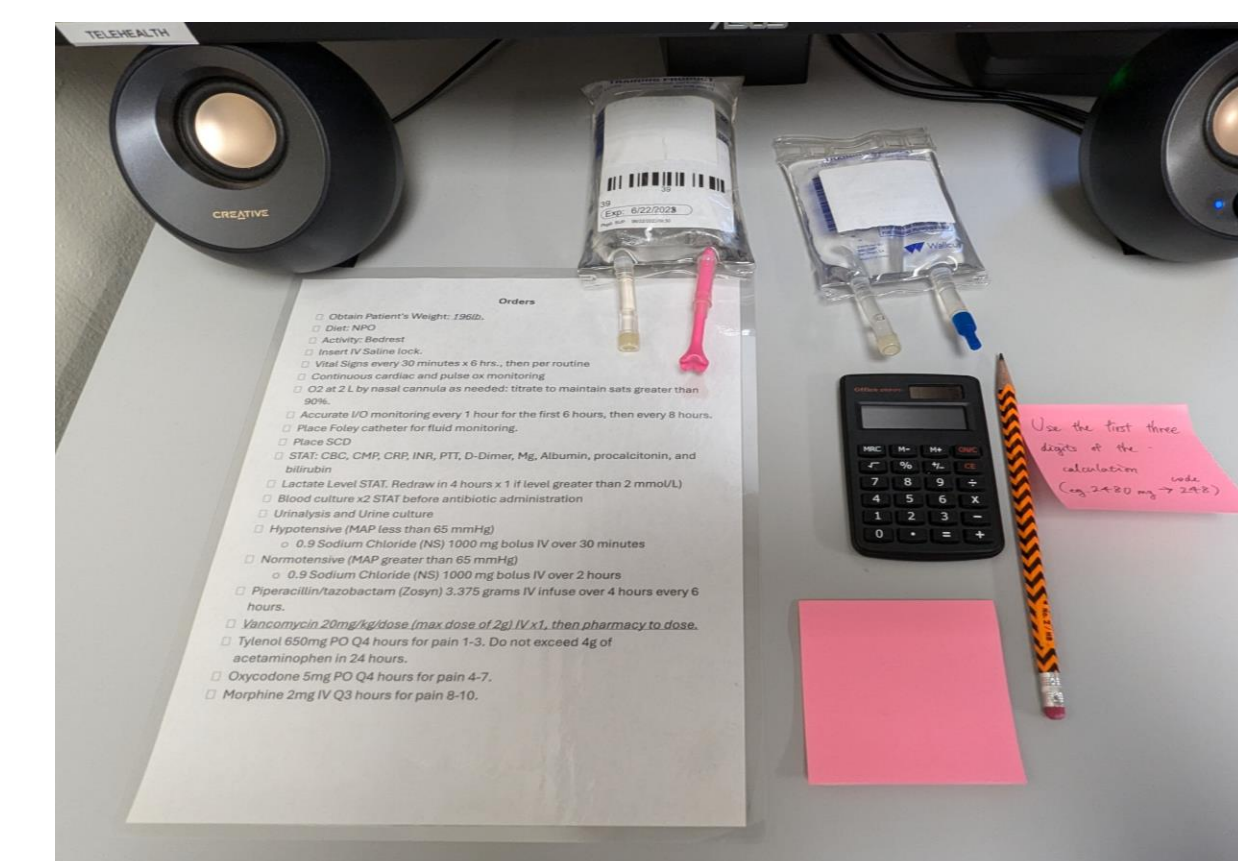

Figure 3. *Escape room riddles*

Figure 4. *Calculation station (Step 5)*

Figure 5. *Escape room lockboxes*

- Video and audio recordings were made of the students' interactions within the escape room to capture data on their problem-solving approach and communication.
- An AI-powered transcription tool was utilized to transcribe the audio and video recordings for analysis.
- An open-ended survey data collected from the students were cross-referenced with the observational data to assess the overall effectiveness of the experiential learning model and the students' perceived improvements in nursing skills and confidence.

Based on the collected data, we report **three** themes emerged from students.

1. The development of critical thinking skills
2. The importance of teamwork
3. The application of textbook knowledge in a hands-on setting

Results:

The results of this project revealed notable improvements in both student attitudes and performance following the integration of technology-fueled simulations in healthcare education. Post-trial survey data indicated that students exhibited a significant increase in engagement, confidence, and overall satisfaction with their learning experiences. Many participants expressed feeling more prepared to transition from the classroom to a clinical setting, with 100% reporting greater clarity in applying theoretical knowledge to practical, real-world scenarios.

These outcomes are closely aligned with Kolb's Experiential Learning Theory, which emphasizes learning through active participation and reflective practice. The simulation-based approach allowed students to engage directly with realistic scenarios, fostering the process of reflection and application of their knowledge. The increase in both attitudes and performance supports the idea that experiential learning—through doing and reflecting—facilitates deeper understanding and better prepares students for the demands of clinical practice.

In terms of academic performance, additional research is needed for further evaluation of the effects of the escape room. Still, these findings underscore the potential of technology-enhanced learning to bridge the gap between classroom instruction and clinical application in nursing education.

Discussion:

The results of this study align with existing research on the benefits of escape rooms in education. Previous studies have consistently highlighted how escape rooms promote critical thinking, teamwork, and engagement (Morrell et al., 2020; Reinkemeyer et al., 2022; Valdes et al., 2021), and our findings reaffirm these advantages. Our primary finding was the potential of escape rooms to prepare nursing students for their future roles. As they are not yet fully trained nurses, there is often a gap between theoretical knowledge and clinical practice. With this pilot testing, we reiterate that the escape room experience provided a simulated environment where students could practice analyzing patient information, making quick decisions, and collaborating under pressure—skills that are crucial in real-world healthcare settings.

Since this study is part of a design-based research approach, this was only the first iteration of the escape room scenario created from a researcher-practitioner collaboration. Several design improvements were identified through student feedback, including clearly assigned roles within teams, better organization of hints and clues, and modifications to the difficulty level of the third and fourth tasks. These refinements will be incorporated into the next iteration, scheduled for April.

In conclusion, the escape room proved to be an engaging and educational experience that helped bridge the gap between classroom learning and clinical practice. By refining its design, we aim to further enhance its effectiveness in preparing nursing students for the complexities of patient care.

Resources

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