

Self Paced Learning in a Critical Care Skills Lab

An Innovative Approach to Increase Student Learning and Clinical Preparation
During COVID-19 Using In-Person Skills Stations

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Background

- Apple Distinguished School (all RN students receive a iPad for the duration of the nursing program)
- Team teach, 3 faculty for 100-130 students/ cohort
- 7-week course with limited time for lab
- Skills lab is prior to starting clinical so students can recognize and feel comfortable with equipment before going into clinicals
- All labs are in Health Education Center, which is shared with other schools
- RT students are invited for IPE initiative

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Purpose

- Give students an opportunity to focus on their weaknesses
- Give students time to critically think independently
- Meets a variety of learning styles
- Help connect lab, clinical, and lecture (especially for tactile learners)
- Incorporate the iPad
- Allow students to reference information later

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- Through innovations of new technologies, smartphones and tablet PCs have become a popular presentation medium for student learning (Chuang et al., 2018).
- One aspect of self-paced learning is determining how to allot learning time across required elements. Learners typically allocate more time to elements they decide to be more difficult (Tullis & Benjamin, 2011).
- Gen Z students rely on information technology and favor independent learning and self paced work (DiMattio & Hudacek, 2020).

Literature Review

Key Points

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This activity was designed with an hands-on museum audio tour in mind.

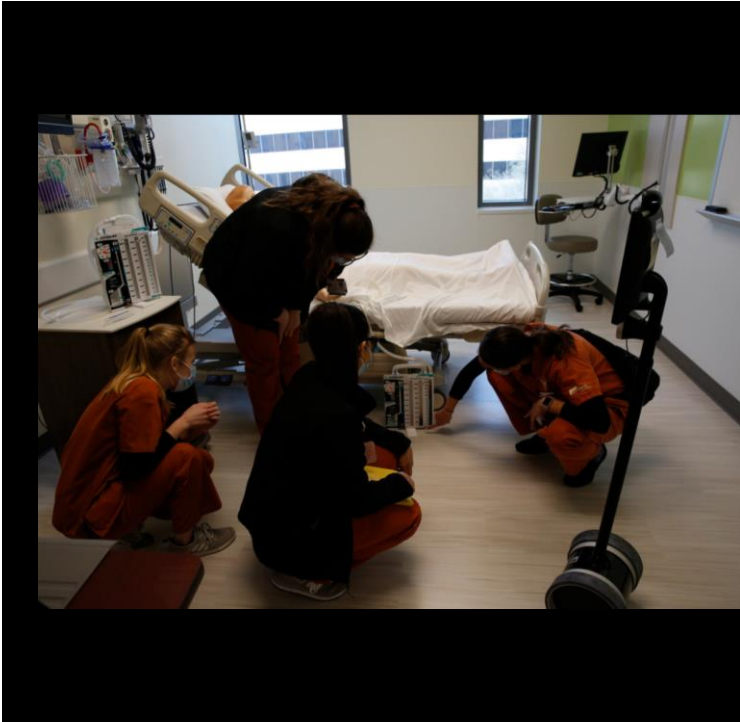
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Prep-Work

- Students are given Keynotes (Apple version of PPT) via Blackboard in advance
- Keynotes have voice over capabilities allowing students to view and listen
- Students are given lab time for reviewing Keynotes in advance
- Faculty create and modify Keynotes as needed



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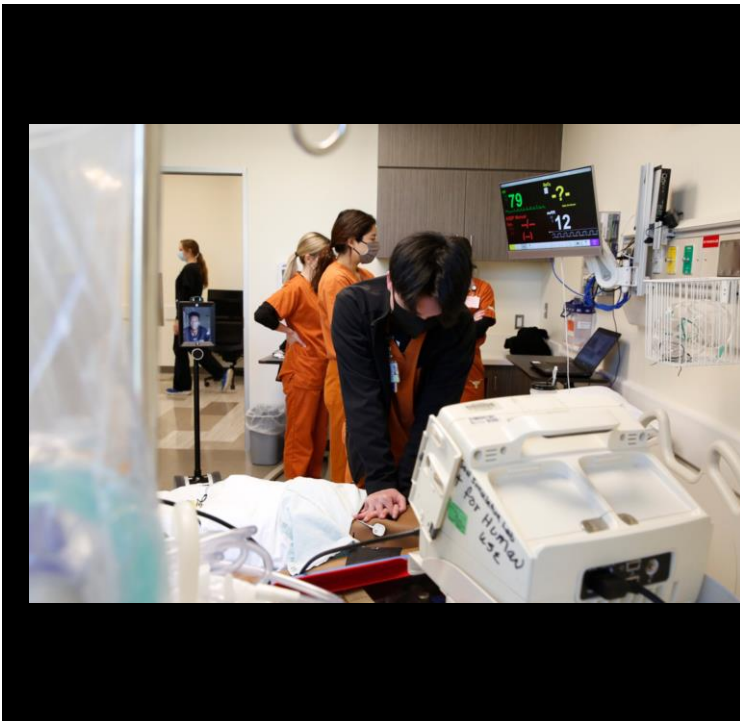


Students are able to use Keynotes during lab to move through stations at their own pace

Students are assigned times. We used 2-hour time slots with 30 minutes after to take the lab quiz.

Students are given a pass/fail quiz to verify attendance and demonstrate understanding.

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Station Set-Up

Each Keynote is linked to a QR code that is posted at each station

Objectives are included at each station and in each correlating Keynote

Students are encouraged to review critical thinking questions at each station.

Monitors are on if appropriate with waveforms and vitals demonstrated

Mannequins with equipment designed for learning

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Station Content

- Arterial lines
- Central venous pressure
- Chest Tubes
- Code Skills (Compressions and using bag mask valve)
- Dobhoff and nasogastric tubes
- Heart and lung assessment (no Keynote)
- Log roll and spinal precautions
- Pulmonary artery catheters
- Temporary dialysis catheters
- Ventriculostomy



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Results/Feedback

- 88% (n=34, range = 79-91%, median = 91%) of students felt the skills lab helped them better recognize and understand equipment they may see in the clinical setting
- 15 % (n=34) of students explained why they disagreed or strongly disagreed with a question
- 97% (n=34) of students stated they would recommend providing the lab in the future
- 32% (n=34) of students gave suggestions for changes

*Data as of 9/26/2021.

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Future changes

- Increase 2 hour time window
- To avoid disrupting other students, require students to bring headphones
- Modify stations to mimic case scenarios that incorporate skills and equipment discussed
- Identify bottleneck station and create 2 identical stations
- Give students a station checklist

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Limitations

- Limited lab space
- Lab equipment limitations
- Homogenous, small sample
- Inability to access cloud service prohibits downloading from QR codes
- Failure to charge and update iPads results in poor technology performance
- RT students are not issued iPads

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Thank you!

Questions?

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QR Code for Code Skills in Keynote



QR Code for Code Skills in PowerPoint (Converted from Keynote)



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References

Chuang, Y., Lai, F., Chang, C. & Wan, H. (2018). Effects of a skill demonstration video delivered by smartphone on facilitating nursing students' skill competencies and self-confidence: A randomized controlled trial study. *Nurse Education Today*. 66, 63-68.

DiMattio, M.J.K. and Hudacek, S.S. (2020). Educating generation Z: Psychosocial dimensions of the clinical learning environment that predict student satisfaction. *Nurse Education in Practice*. 49, 1-6.

Tullis, J.G. and Benjamin, A.S. (2011). On the effectiveness of self-paced learning. *Journal of Memory and Language*. 64, 109-118.

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