Using Portable Task Trainers
to Strengthen
Undergraduate Nursing Students'
Clinical Judgment &
Psychomotor Skills

Kaitlyn Burke, MS, RN, CCRN, CNEcl

SCHOOL OF
NURSING
UNIVERSITY of ROCHESTER

1

Background

- Healthcare complexity has increased.
  - Nurses have more accountability and responsibility.

- Nursing demand has risen.

- Practice-ready graduates are needed:
  - Skill practice time and exposure are limited.
  - Enhance decision-making abilities.

10-20% nursing gap by 2025

65% errors = poor decision making

20% employers are satisfied

(Oermann, Muckler, & Morgan, 2016); (Ward, Knowlton, & Laney 2018) 2

SCHOOL OF
NURSING
UNIVERSITY of ROCHESTER

2

Purpose

To **prepare practice-ready graduates** by implementing **portable task trainers (PTTs)** with **corresponding case studies** throughout a 12-month accelerated, undergraduate curriculum.
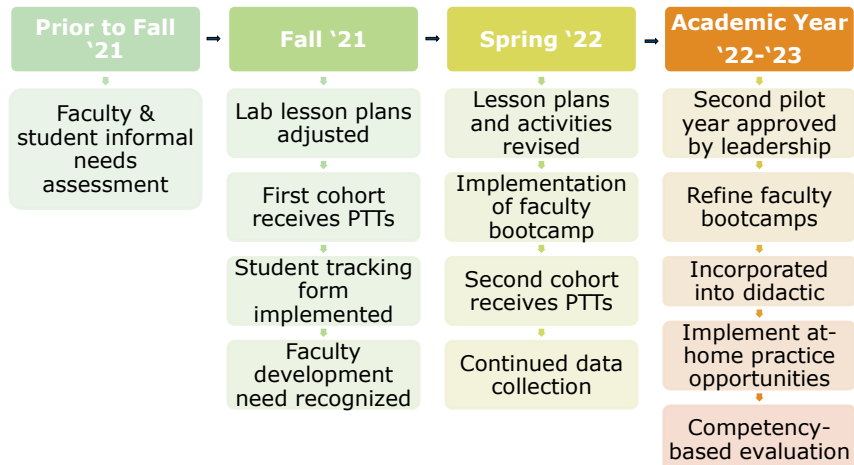
1. Repetition is essential for skill retention
2. Incorporate clinical decision-making practice in all learning environments
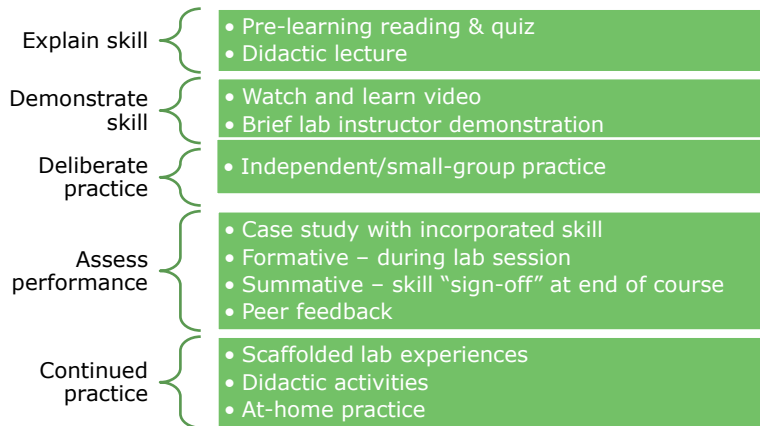3. NGN preparation

SCHOOL OF NURSING
UNIVERSITY of ROCHESTER

Methods: Timeline

Prior to Fall '21	→	Fall '21	→	Spring '22	→	Academic Year '22-'23
Faculty & student informal needs assessment		Lab lesson plans adjusted		Lesson plans and activities revised		Second pilot year approved by leadership
		First cohort receives PTTs		Implementation of faculty bootcamp		Refine faculty bootcamps
		Student tracking form implemented		Second cohort receives PTTs		Incorporated into didactic
		Faculty development need recognized		Continued data collection		Implement at-home practice opportunities
						Competency-based evaluation

SCHOOL OF NURSING
UNIVERSITY of ROCHESTER

Methods: Lesson Plans

Framework for Teaching Psychomotor and Procedural Skills

Explain skill
- Pre-learning reading & quiz
- Didactic lecture

Demonstrate skill
- Watch and learn video
- Brief lab instructor demonstration

Deliberate practice
- Independent/small-group practice

Assess performance
- Case study with incorporated skill
- Formative – during lab session
- Summative – skill "sign-off" at end of course
- Peer feedback

Continued practice
- Scaffolded lab experiences
- Didactic activities
- At-home practice

(Oermann, Muckler, & Morgan, 2016) 5

SCHOOL OF
NURSING
UNIVERSITY of ROCHESTER
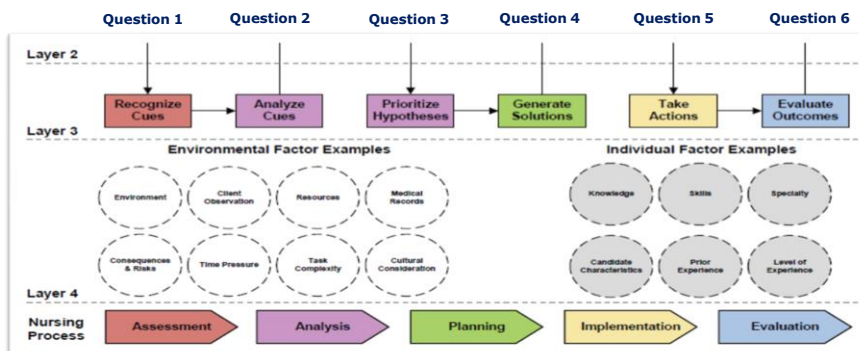

Methods: Case Study Design

1. Utilize understanding by design framework
2. Minimum of 6 questions that correlates with the Clinical Judgment Model
3. Each scenario incorporates at least one psychomotor skill.
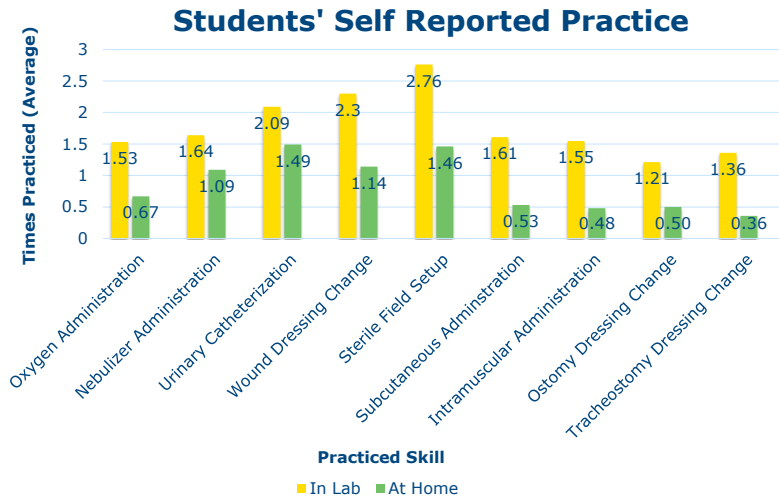   - Usually associated with question 5

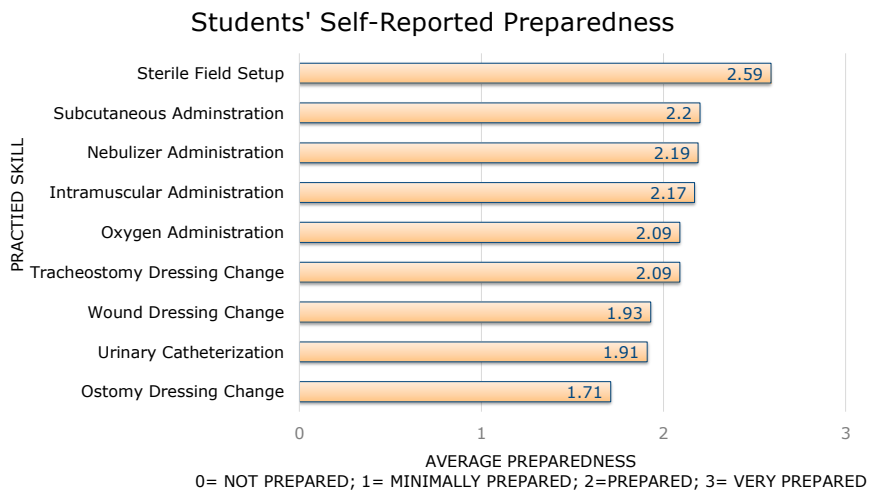*NCSBN Clinical Judgment Measurement Model.* NCSBN, www.ncsbn.org 6

SCHOOL OF
NURSING
UNIVERSITY of ROCHESTER

Methods: Student Evaluation – pilot year 1

Did you have enough supplies IN LAB to practice Ostomy Care?

○ Yes
○ No

Number of times Ostomy Care was practiced:

	0	1	2	3	4+
In lab	○	○	○	○	○
At home	○	○	○	○	○

Did you have enough supplies TO USE AT HOME to practice Ostomy Care?

○ Yes
○ No

How much time did you practice Ostomy Care at home? (in minutes)

○ 0
○ 1 - 15
○ 16 - 30
○ 31 - 45
○ 46 - 60
○ 61+

How prepared do you feel to perform Ostomy Care in a clinical setting?

| 0 | 1 | 2 | 3 |

0 = not prepared - 3 = very prepared

7

SCHOOL OF
NURSING
UNIVERSITY of ROCHESTER

7

Methods: Student Evaluation – pilot year 2

Emptying and Changing an Ostomy Application

Please indicate if you observe the skill completed, by selecting "Met." If the skill was missed select "Unmet", and if a reminder is needed, please select "Needed a reminder/Continue to practice." Record your observation of the skill with honesty. This will help with progress and improvement. You will see steps that are often overlooked emphasized. Be mindful of these, and continue to practice.

Preperation

1. **Gather equipment.**
   ○ Met — P.V.: 1
   ○ Unmet — P.V.: 0
   ○ Needed a reminder/Continue to practice — P.V.: 0
   Question Point Value: 1.00

2. **Perform proper hand hygiene and put on PPE, if indicated.**
   ○ Met — P.V.: 1
   ○ Unmet — P.V.: 0
   ○ Needed a reminder/Continue to practice — P.V.: 0
   Question Point Value: 1.00

3. **Identify the patient.** **Check the patient ID band for Name and DOB. Make sure that it matches what the patient is telling you and the EMR.**
   ○ Met — P.V.: 1
   ○ Unmet — P.V.: 0
   ○ Needed a reminder/Continue to practice — P.V.: 0
   Question Point Value: 1.00

4. **Patient privacy: Close the curtains around the bed and close the door to the room, if possible.**
   ○ Met — P.V.: 1
   ○ Unmet — P.V.: 0
   ○ Needed a reminder/Continue to practice — P.V.: 0
   Question Point Value: 1.00

8

SCHOOL OF
NURSING
UNIVERSITY of ROCHESTER

8

Qualitative Data: Student

Positive (student)

"When you only get one lab to practice a skill, coming home and continuing practicing was extremely helpful."

"It was beneficial to have these items at home to practice on my own time."

"It helped replicate a real patient in a non-invasive way."

Negative (student)

"Receiving materials prior to lab in tandem with the pre-learning videos would make for more robust pre-learning."

"Need additional ways to practice SQ and IM injections at home."

"Not beneficial at home. It did allow for simultaneous practice in lab without waiting turns."

SCHOOL OF NURSING
UNIVERSITY of ROCHESTER

Qualitative Data: Faculty

"It gives the students their own practice space and it allows multiple times to practice."

"I LOVE THEM! I think the students appreciated being able to have "hands on" experience at each step of the case study."

"Having students being able to practice the skills together allowed them to work collaboratively and problem solve/discuss the skill together."

"I enjoyed using the case study. I think it helped the students, especially those without any clinical experience, conceptualize how we would use different oxygen delivery systems in the clinical setting."

SCHOOL OF NURSING
UNIVERSITY of ROCHESTER

Limitations

- PTTs & evaluation software
- Additional practice supplies

- Case study/activity creation
- Lab Faculty bootcamps

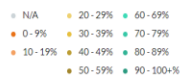- Informal needs assessment
- Inconsistent student responses

13

SCHOOL OF NURSING
UNIVERSITY of ROCHESTER

Future Evaluation

Average Performance

Avg. Score
91.97%
Standard Deviation
7.69%

- N/A
- 0 - 9%
- 10 - 19%
- 20 - 29%
- 30 - 39%
- 40 - 49%
- 50 - 59%
- 60 - 69%
- 70 - 79%
- 80 - 89%
- 90 - 100+%

SCENARIOS	AVG. SCORE
Catherization	91.59%
Im Injection	N/A
Sterile NS Wet to Dry Dressing Change	94.98%
Practice for SimCapture Peer to Peer	88.57%

14

SCHOOL OF NURSING
UNIVERSITY of ROCHESTER

Future Evaluation

Learner: Learner A

TOTAL SCORE

92.86%
52/56

QUICK STATS

Class Mean	Class STDDEV	Class High	Class Low	Passing score
91.98%	7.70%	100%	66.67%	0%

SCORE DETAILS

Evaluation / Question Category	Catherization	Im Injection	Sterile NS Wet to Dry Dressing Change	Practice for SimCapture Peer to Peer	Question Category TOTAL	Passing Requirement	>
None	89.74% 35/39	–	100% 17/17	–	92.86% 52/56	0%	
Curriculum TOTAL	89.74% 35/39	–	100% 17/17	–			
Curriculum Mean	91.59%	–	94.98%	88.57%			
Curriculum STDDEV	9.65%	–	8.65%	23.56%			
Curriculum High	100%	–	100%	100%			
Curriculum Low	65.38%	–	64.71%	0%			

∧ Hide Class Data

15

SCHOOL OF
NURSING
UNIVERSITY of ROCHESTER

Implications

Team-approach assists with bandwidth

Once created, bandwidth is significantly reduced

Transferability
- Can use shell and change content
- Leverage technology – learning can happen anywhere

Competency-Based Evaluation

Decrease educator workload
- Peer evaluation
- Self-paced/directed learning activities

16

SCHOOL OF
NURSING
UNIVERSITY of ROCHESTER

Conclusion

1. Repetitive psychomotor skill practice time is necessary.

2. Learning can be flexible (and anywhere!) by implementing PTTs and corresponding activities.
   - Learners want the flexibility to practice on their own time.

3. Case studies can easily be created/revised once the template is complete.

4. Evaluation platform will assist in tracking student outcomes over time (formative and summative feedback).

ULTIMATELY

Portable task trainers can be used to **increase psychomotor skill practice time (increased retention)** and can be leveraged to create clinical scenarios to **build clinical judgment**.

17

SCHOOL OF
NURSING
UNIVERSITY of ROCHESTER

References

NCSBN Clinical Judgment Measurement Model. NCSBN. (n.d.). Retrieved November 20, 2022, from https://ncsbn.org/clinical-judgment-measurement-model

Oermann, M.H., Muckler, V.C., & Morgan, B. 2016. Framework for Teaching Psychomotor and Procedural Skills in Nursing. *The Journal of Continuing Education in Nursing, 47*(6). 278-282.

Ward, M., Knowlton, M.C., & Laney, C.W. 2018. The flip side of traditional nursing education: A literature review. *Nurse Education in Practice, 29.* 163-171.

18

SCHOOL OF
NURSING
UNIVERSITY of ROCHESTER

19