CLOSING THE LOOP BETWEEN SKILLS AND SIMULATION: WHAT IS DRIVING YOUR UNDERGRADUATE NURSING PROGRAM?

TERESA M. O’CONNOR, MS, RN
JOANNE WEINSCHREIDER, MS, RN

SAINT JOHN FISHER COLLEGE
SCHOOL OF NURSING
ROCHESTER, NY
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DISCLOSURES

Conflict of Interest

• Teresa M. O’Connor reports no conflict of interest
• Joanne Weinschreider reports no conflict of interest
• Julia Greenawalt (INACSL Conference Administrator & Nurse Planner) reports no conflict of interest
• Leann Horsley (INACSL Lead Nurse Planner) reports no conflict of interest

Successful Completion

• Attend 90% of session
• Complete online evaluation
OBJECTIVES

Upon completion of this presentation, participants will be able to:

1. Define and analyze the current practice of experiential learning actives in UG nursing programs.

2. Identify key steps required to transition to a data driven simulation and lab program.

3. Examine the components required to initiate and transition skill and simulation based learning activities to a data driven concept.

4. Discuss the impact of implementing a data driven experiential learning experience for nursing education
Teresa M. O’Connor MS, RN
Director of Learning Resource Labs
toconnor@sjfc.edu

Joanne Weinschreider MS, RN
Director of Nursing Simulation Center
jweinschreider@sjfc.edu
ST. JOHN FISHER COLLEGE, WEGMANS SCHOOL OF NURSING ROCHESTER, NEW YORK
# UNDERGRADUATE NURSING PROGRAM

- 350 (+) undergraduate students
- Admit twice a year, fall and spring semesters (every class is offered every semester)

<table>
<thead>
<tr>
<th>FALL</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior first semester: 106</td>
<td>Junior first semester: 67</td>
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<td>Junior second semester: 67</td>
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<tr>
<td>Senior second semester: 67</td>
<td>Senior second semester: 106</td>
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</table>
EXPERIENTIAL LEARNING LABS

5,000 square foot Simulation Center
- Five rooms
- Five control rooms
- Four debriefing rooms
- 7 high fidelity simulators, video equipment

3,000 square foot Learning Resource Center (LCR)
- Three labs
- 24 beds
- Eight mid-fidelity simulators
- 12 task trainers
CURRENT PRACTICE OF EXPERIENTIAL LEARNING
EXPERIENTIAL BASED LEARNING

CLASSROOM BASED LEARNING

Simulation Lab

Skills Lab

Clinical

Lecture
EXPERIENTIAL LEARNING ACTIVITIES

Definition: Experiential learning is the process where knowledge is created through the transformation of experience. (Kolb, 1984).

Value: Apprehension and comprehension occurs through actual experience and outside the experience. Retain 80-90% of what you do with your hands.

Examples

• Supervised skill demonstration in the lab
• Virtual, on-line patient interviewing
• Simulation
• Clinical and post-conference
Clinical based learning

Lab based learning

Simulation based learning

Lecture

**GRADUATE NURSE**

Passes the Nursing Program

Meets core QSEN competencies

Passes the NCLEX

Secures employment as an RN

Successfully completes nursing practice orientation
DO WE WORK LIKE THIS?

- Clinical based learning
- Lab based learning
- Simulation based learning
- Lecture
- Clinical based learning
Or like this?

Clinical

Lab based learning

Simulation based learning

Courses
Program Strength

- Simulation Lab
- Previous NCLEX pass rate
- Clinical
- Course
- Skills Lab
WHAT’S MISSING?

True validation/proof that skills, knowledge, and attitudes (SKAs) are being transferred and retained by the learner

How can you show this?

- *Data collection from experiential learning experiences*
KEY STEPS TO BUILDING A DATA DRIVEN EXPERIENTIAL LEARNING PROGRAM
SEVEN KEY STEPS

1. **Map your program** to evaluate experiential learning activities
   - Recognize how and when your students are taught specific SKAs

2. **Perform a program wide GAP analysis** focusing on experiential learning
   - Identify what might be missing or what is taught out of order

3. **Share** what is learned from step 1 & 2 to make program improvements

4. **Design a simulation program that supports** the experiential mapping plan (student)
   - Capture and track data from the simulation program (need a structured way)

5. **Design lab-based experiences** (clinical & lab) that support the curriculum mapping
   - Capture and track data from the simulation program

6. **Incorporate opportunities for improvement** into courses, clinical, simulation & lab

7. **Make it cyclical and ongoing**
MAPPING EXPERIENTIAL LEARNING

1. Define the objectives of the curriculum

2. Create a list of what is taught and when, link it to:
   1. Lab/Clinical
   2. Simulation

3. Determine the teaching approach
   1. Low fidelity
   2. Mid fidelity
   3. High fidelity

4. Incorporate an evaluation component
   1. Pass/fail
   2. Confidence
   3. Value
## Mapping of Clinical Skills for LRC and Sim Lab

<table>
<thead>
<tr>
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<tr>
<td><strong>Learning Resource Center / lab days</strong></td>
<td>Lab days = 2 full days plus 4 additional half days</td>
<td>2 lab days</td>
<td>1 lab day</td>
<td>2 lab days</td>
<td>Self-learning modules</td>
<td>Peds: 1 lab day Community: none</td>
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<tr>
<td><strong>Skills competency in LRC</strong></td>
<td>Low fidelity scenario comps with skills</td>
<td>Skills competencies - 1.5 hr practice in lab before skills testing</td>
<td>n/a</td>
<td>Skills competencies - 1.5 hr practice in lab before skills testing</td>
<td>n/a</td>
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Continued mapping

<table>
<thead>
<tr>
<th>Low &amp; high fidelity sim labs</th>
<th>Low fidelity:</th>
<th>High fidelity:</th>
<th>High fidelity sim:</th>
<th>High fidelity:</th>
<th>High fidelity:</th>
<th>High fidelity:</th>
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</thead>
<tbody>
<tr>
<td>High fidelity in Sim lab</td>
<td>2. Administer oxygen via NC &amp; mask</td>
<td>OB:</td>
<td>2. Neonatal assessment</td>
<td>PO and IV medication administration</td>
<td>2. PO, topical and IV medication administration</td>
<td>Acute sim</td>
</tr>
<tr>
<td>*Mental Health sims are in mental health counseling rooms and class rooms</td>
<td>3. Instruct deep breathing, coughing, &amp; use of incentive spirometer</td>
<td>3. PO and IV medication administration</td>
<td>3. Pre-eclampsia assessment</td>
<td>3. Oxygen therapy</td>
<td>3. Oxygen therapy</td>
<td>Acute sim</td>
</tr>
<tr>
<td></td>
<td>5. Isolation precautions/PPE</td>
<td>5. IV fluid management on an alaris</td>
<td>5. IM injections</td>
<td>5. TPA administration</td>
<td>5. TPA administration</td>
<td>Acute sim</td>
</tr>
<tr>
<td></td>
<td>12. Meds via NG tube or PEG tube</td>
<td>2. Straight cath</td>
<td>2. PO, topical and IV medication administration</td>
<td>2. PO, topical and IV medication administration</td>
<td>2. PO, topical and IV medication administration</td>
<td>Acute sim</td>
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<tr>
<td></td>
<td></td>
<td>5. Check placement of NG</td>
<td>5. IM injections</td>
<td>5. TPA administration</td>
<td>5. TPA administration</td>
<td>Acute sim</td>
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<tr>
<td></td>
<td></td>
<td>7. IM injection</td>
<td>7. Oxygen therapy</td>
<td>7. IV bolus</td>
<td>7. IV bolus</td>
<td>Acute sim</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12. Meds via NG tube or PEG tube</td>
<td>12. Meds via NG tube or PEG tube</td>
<td>Acute sim</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13. Mixing 2 parenteral medications in one syringe</td>
<td>13. Mixing 2 parenteral medications in one syringe</td>
<td>Acute sim</td>
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</tbody>
</table>

PEDS:

1. Pulse oximetry
2. Nebulizers
3. Primary and secondary IV therapy
4. Oxygen therapy
5. Assessment of a 6 month old
6. Medication education
PERFORM A GAP ANALYSIS

Utilize the experiential learning map to perform a gap analysis

Ask three main questions related to outcomes for each program

• Where are we today?

• Where do we NEED to be?

• Where would we LIKE to be?

• What is missing and how can we fix it?

Utilize data (if you have it)
EXAMPLE: GAP ANALYSIS

Opportunities for improvement

PENDING IRB approval
UTILIZE SIMULATION-BASED LEARNING TO PROMOTE STUDENT LEARNING

1. Utilize the experiential learning map to develop simulations that are aligned with the learning map & student outcomes
2. Vet the simulations with course coordinators and lab staff
3. Track data points on EVERY simulation
   - What the students do well
   - Opportunities for improvement (remediation rates)
   - Evaluations, specifically what students are learning in each simulation
4. Share the information
5. Make program wide improvements with data
   1. Simulation
   2. Clinical
   3. Course
   4. Lab
## DEBRIEFING TOOL EXAMPLE

### Students:  
Sim: J2 acute sim – COPD  
Expected skills/pathophysiology:

1. COPD – Pathophysiology & Treatment  
2. Hospital assessment (head to toe)  
3. Medication administration (PO, neb, IV)  
4. Alaris pump – primary IV change  
5. Oxygen therapy for COPD patient  
6. Communication (SBAR, closed loop)  

### Facilitator:

### Phone Calls

<table>
<thead>
<tr>
<th>#1</th>
<th>S</th>
<th>B</th>
<th>A</th>
<th>R</th>
</tr>
</thead>
</table>

| #2 | S | B | A | R |

### Did well:

### Opportunities for improvement:

### Remediation

- YES
- NO

- IV Fluids and Medications
- Safe Medication Administration
- Foley Catheter Placement
- Oxygen Therapy
EVALUATION TOOL

question 1
please check one: please identify which simulation session you attended.

question 2
the overall learning environment in the simulation center was positive.

question 3
the simulated experience was conducive to my learning.

question 4
identify opportunities for improvement in the simulation environment.

question 5
helpful and practical experiences prepared me for the simulated scenario.

question 6
list 3 things you learned during your simulated learning experience.

question 7
the amount of time in simulation is adequate.

question 8
what I learned in simulation will be applied to the clinical setting.

question 9
please identify one of your facilitators and then rate them on a scale from 1-4. one being not that helpful and 4 being very helpful.

question 11
identify what was most beneficial to your learning in the simulation environment.

submit
HOW TO USE THE DATA AT FIRST GLANCE

1. Create a sense of urgency (if needed)
   • Share the data with all stakeholders, course coordinators, clinical instructors and lab staff
2. Make changes each semester
   • Class, clinical, lab and simulation
3. Continue to track data
4. Share, share, share
5. Change the culture related to how experiential learning is used
   • Gain buy in
   • Grow the simulation program
   • Grow the utilization of the learning lab
EXAMPLE: MATH IN THE UG PROGRAM

1. J2, S1 & S2 complete simulations with math questions tiered to their course level

2. Data –% that could not successfully pass the math portion of sim
   - J2 pending IRB approval
   - S1 pending IRB approval
   - S2 pending IRB approval

3. Program changes
   - Added math competencies to J2 and S1 pharmacy courses with a test to competency component.
   - All course coordinators added 1-3 math questions to each exam
   - Added specific math questions to each simulation and sim competency
   - Continue to track math competency through sim data
THE IMPACT OF A DATA
DRIVEN EXPERIENTIAL
PROGRAM
In the Spring of 2012, the sim program changed from “teach and rescue” to a safe learning environment that keeps students accountable for SKAs that have been taught in the program based off of what the data was telling us.

Simulation Program, 2012 - today:

1. Standardized all pre-work
   - Concept map development
   - List of skills
   - List of medications
   - Links to all skill rubrics
2. Sim facilitators capture debriefing data and trends on all sims using the debriefing tools
3. Remediation for all students that have an OFI with skills and concepts within their sim
4. Students evaluate all simulations
5. Students complete a scripted video self-reflection following each sim
WHAT'S THE VALUE

DATA, DATA AND MORE DATA ABOUT OUR STUDENTS AND WHAT ARE STUDENTS ARE TRULY LEARNING!!
<table>
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<tr>
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<th>Status</th>
<th>Score</th>
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<tr>
<td>Prep Work Instructions - Please Read First</td>
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<td>Prep work - ATI Med Card Template</td>
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<td>Monitoring for Adverse Reactions of a Blood Transfusion Performance Checklist</td>
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<tr>
<td>Estrogen Patch and Nitroglycerin Ointment Application Performance Checklist</td>
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<tr>
<td>Administering Intramuscular Injections Performance Checklist</td>
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<td>Intravenous Fluid Therapy, Using an Infusion Pump Performance Checklist</td>
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<tr>
<td>Administering IV Medications by Piggyback Performance Checklist</td>
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<td>Applying a Nasal Cannula or Face Mask Performance Checklist</td>
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<td>Setting Oxygen Flow Rates Performance Checklist</td>
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<td>Inserting an Indwelling Urinary Catheter in a Female Patient Performance Checklist</td>
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<td>Inserting an Indwelling Urinary Catheter in a Male Patient Performance Checklist</td>
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<td>Simulation Evaluation</td>
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<td>Post Work Instructions</td>
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<tr>
<td>Video Reflection: Question &amp; Answer</td>
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<tr>
<td>S2 m/s Simulation Certificate</td>
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</table>
Assessment:
- Checked patient ID
- Completed VS
  - Missed
- Educated patient on POC for the day
- Lung sounds
- Low O2 sat noted
- Ulcer on sacrum area
- Asks about when the pt will eat breakfast

Diagnosis/ priority problem:

Implementation:
- Fluid bolus
- Dressing change
- Give AM meds if not already done

Evaluation:
- Respiratory status
- Pain scale
- Urinary output

*** students can write a SOAP note if they finish early ****

Opportunities for improvement:
- Assessment
  - 
  - 
- Plan
  - 
  - 
- Implementation/skills
  - 
  - 

- SQ injection
  - 

- Suction
  - 

- Dressing change
  - 

- Alaris – primary IV
  - 

- Math with bolus
  - 

- Safe Medication admin
  - 

- Hand Hygiene
  - 

-
EVALUATION TOOL
COURSE COMPLETION SUMMARY

<table>
<thead>
<tr>
<th>COMPLETIONS BY DEPARTMENT</th>
<th>UNIQUE STUDENTS SELECTED</th>
<th>COMPLETED STUDENTS</th>
<th>TOTAL COMPLETIONS</th>
<th>COMPLETE</th>
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<tbody>
<tr>
<td>WSON</td>
<td></td>
<td>116</td>
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</table>

- All other Sim comp remediation
- Remediation for ADMINISTERING ORAL MEDICATIONS
- Remediation for ALARIS - PRIMARY
- Remediation for ALARIS - SECONDARY INFUSIONS
- Remediation for Alaris (IV medications)
- Remediation for ASSESSMENT
- Remediation for BLOOD ADMINISTRATION
- Remediation for BLOOD TRANSFUSION, INITIATING
- Remediation for BLOOD TRANSFUSION, MONITORING FOR ADVERSE REACTIONS
- Remediation for BLOOD TRANSFUSION, PREPARING FOR
- Remediation for CHANGING A DRESSING
- Remediation for FEMALE FOLEY
- Remediation for FOLEY
- Remediation for INSULIN, PREPARING AND ADMINISTERING
- Remediation for INTRAMUSCULAR INJECTIONS
- Remediation for MALE FOLEY
- Remediation for MEDICATION CALCULATIONS

Data pending IRB approval
Simulation Experience

Evaluations and video reflections

Simulation Program

Facilitator trends /OFI from simulation

Remediation Assigned

Rates are tracked/utilized for program improvements

Skills completed in the lab

Data:
- Remediation rates
- Trends in student critical thinking
- Student reflection trends

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REMEDICATION RATES & SIM COMPETENCY DATA

~ SIMULATIONS
J1 MED/SURG
J2 MED/SURG
OB
J2 MED/SURG SIM COMPETENCY
S1 MED/SURG
Peds
S2 MED/SURG
COMMUNITY
SIM COMPETENCY RATES

** PENDING IRB APPROVAL***
THE PROCESS OF TYING CLASS, CLINICAL, LAB AND SIM

Learn and test skills in lab

Reinforce and prove competency of skills in clinical & lab

Prove competency of skills in simulation

Remediation of skills and retesting in lab
COLLABORATING WITH A DATA Driven SIM PROGRAM

• LEARNING RESOURCE LAB, 2013- TODAY

  - DEVELOPMENT OF A CORE SET OF REMEDIATION COURSES (10 COURSES)

  - TEACHING ADJUNCTS HOW TO REMEDIATE STUDENTS IN A STRUCTURED FASHION

  - TRACKING HOURS STUDENTS SPEND IN THE LAB = ROI IN LAB SUPPLIES & STAFFING

  - DEVELOPING REMEDIATION COURSES IN CONJUNCTION WITH SIMULATION DATA
<table>
<thead>
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<th>Name</th>
<th>Owner: SJFC - St John Fisher College</th>
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<tr>
<td>Remediation for ADMINISTERING ORAL MEDICATIONS</td>
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<td>Remediation for CHANGING A DRESSING</td>
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<td>Remediation for INSULIN, PREPARING AND ADMINISTERING</td>
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<td>Remediation for INTERMITTENT STRAIGHT CATHETERIZATION</td>
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<td>Remediation for INTRAMUSCULAR INJECTIONS</td>
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<td>Remediation for MALE FOLEY</td>
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<td>Remediation for MEDICATION CALCULATIONS</td>
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<td>Remediation for NASOGASTRIC TUBE, INSERTING</td>
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<td>Remediation for REMEDICATION</td>
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Remediation for INTRAMUSCULAR INJECTIONS

Estimated Course Length: 72 minutes

Course Learning Activities

You are enrolled in this course. Click the "Course Overview" link above to review the course description, learning objectives, and all available CE credit prior to beginning the learning activities below. (For CE Credit Information, scroll down.)

<table>
<thead>
<tr>
<th>Learning Activity</th>
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<td>Directions for remediation*</td>
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<td>Performance Checklist for Administering Intramuscular Injections*</td>
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<td>Remediation Attestation*</td>
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<td>Instructor*</td>
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Course Continuing Education Credit

Credits are based on State and License Discipline information. Please read through all credit information before clicking the Enroll In this Course button.

Course Certification
1. Schedule a mandatory one hour remediation session for your remediation. This remediation session will be in the Learning Resource Lab.
2. Report to the Learning Resource Lab at the scheduled date and time.
3. In the Learning Resource Lab, you will be required to log into the Mosby’s skill videos in your Evolve account so please have your log in name and password with you.
4. Watch the Mosby’s video for the skill you are required to remediate. You will be provided a performance checklist for that skill.
5. Practice the skill completely from beginning to the end of the skills checklist a minimum of 5 times.
6. When you are comfortable, the lab instructor will test you off on the skill using the performance checklist.
7. If you have any questions, please contact.

***** You have two weeks to complete the remediation *****
UG nursing curriculum

- Simulation Data
- Lab Data
- ATI Results
- Course data
- NCLEX data trends

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PROGRAM OUTCOMES

NCLEX First Time Pass Rate
Employment statistics
Transition into practice feedback from employers

Pending IRB approval
QUESTIONS OR COMMENTS?

THANK YOU

TERESA  TOCONNOR@SJFC.EDU
JOANNE  JWEINSCHREIDER@SJFC.EDU
REFERENCES


