The Art of Nursing: Inter-professional Education (IPE) to Enhance Clinical Reasoning Competencies in Nursing Students
Interprofessional Research Team

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Learning Objectives:
1. Cultivate awareness of a model of IPE that shows promise to enhance observational skills and clinical reasoning skills in health care professionals.
2. Inform attendees of the key elements and outcomes of the IPE initiative.

*No conflict-of-interest, sponsorship or commercial support was given to the author.
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Cohort 1: Traditional track baccalaureate degree students

Cohort 2: Accelerated track 2nd degree baccalaureate students
J. Kaneko, Untitled, 2007
Untitled (No. 25), 1960
Lee Bontecou (American, 1931—)
Welded steel & canvas, 72x56x20in.
The Art of Nursing

Prompts:

How did your critical engagement with works of art today connect to your development as a nurse?

How does environment impact your ability to understand and act?

Describe a discussion from the last VMFA experience that challenged you to reconsider your approach to gathering, interpreting, or communicating information, and explain why it was effective in doing so?
Participatory Action Research

Art Education Facilitators

+ Nursing Clinical Faculty (ICU, Oncology, Orthopedic, Longterm Care, etc.)

+ Beginning Baccalaureate Nursing Students
Metacognition

Buddha Watching TV (1974-1997), Nam June Paik
Stone sculpture, soil, video monitor, video camera, tripod, remote control, cable, outlet box with cord, and wood base.
Knowledge About Cognition

**Declarative**: Factual knowledge that is needed to process or use critical thinking and learner’s knowledge of their skills and abilities.

**Procedural**: Application of knowledge to complete a process or procedure.

**Conditional**: Determining under what circumstances specific processes or skills should transfer.

Regulation of Cognition

**Planning**: plan, set goals, allocate resources for learning.

**Information Management Strategies**: Skills used to process information efficiently.

**Comprehension Monitoring**: Assessing one’s learning.

**Debugging Strategies**: Strategies to correct errors.

**Evaluation**: Analysis of performance following learning episode.
KNOWLEDGE ABOUT COGNITION:

Declarative Knowledge (8 ITEMS) (Knowledge about self and strategies)
-- The factual knowledge the learner needs before being able to process or use critical thinking related to the topic
-- Knowing about, what, or that
-- Knowledge of one’s skills, intellectual resources, and abilities as a learner
-- Students can obtain knowledge through presentations, demonstrations, discussions

5. I understand my intellectual strengths and weaknesses.
1. I know what kind of information is most important to learn.
10. I am good at organizing information.
PROCEDURAL KNOWLEDGE (4 ITEMS)

-- The application of knowledge for the purposes of completing a procedure or process
-- Knowledge about *how* to implement learning procedures (e.g. strategies)
-- Requires students know the process as well as when to apply process in various situations
-- Students can obtain knowledge through discovery, cooperative learning, and problem solving

27. I am aware of what strategies I use when I study.
33. I find myself using helpful learning strategies automatically.
MAI

CONDITIONAL KNOWLEDGE (5 ITEMS)
-- The determination under what circumstances specific processes or skills should transfer
-- Knowledge about *when* and *why* to use learning procedures
-- Application of declarative and procedural knowledge with certain conditions presented
-- Students can obtain knowledge through simulation

18. I use different learning strategies depending on the situation.
26. I can motivate myself to learn when I need to.
29. I use my intellectual strengths to compensate for my weaknesses.
REGULATION OF COGNITION:
PLANNING (7 ITEMS)
--Planning, goal setting, and allocating resources prior to learning

22. I ask myself questions about the material before I begin.
23. I think of several ways to solve a problem and choose the best one.

INFORMATION MANAGEMENT STRATEGIES (10 ITEMS)
--Skills and strategy sequences used to process information more efficiently (e.g., organizing, elaborating, summarizing, selective focusing)

37. I draw pictures or diagrams to help me understand while learning.
39. I try to translate new information into my own words.
Comprehension Monitoring (7 ITEMS)
--Assessment of one’s learning or strategy use

10. I consider several alternatives to a problem before I answer.
1. I ask myself if I have considered all options when solving a problem.

Debugging Strategies (5 ITEMS)
--Strategies used to correct comprehension and performance errors

44. I re-evaluate my assumptions when I get confused.
51. I stop and go back over new information that is not clear.

Evaluation (6 ITEMS)
--Analysis of performance and strategy effectiveness after a learning episode

38. I ask myself if I have considered all options after I solve a problem.
50. I ask myself if I learned as much as I could have once I finish a task.
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## Participant Demographics

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<th>Accelerated N=160</th>
<th>Traditional N=55</th>
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<td>Mean ± std dev</td>
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<td>N (%)</td>
<td>N (%)</td>
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<td>47 (21.9%)</td>
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<td>8 (3.7%)</td>
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<td>121 (56.3%)</td>
<td>27 (12.6%)</td>
<td>148 (68.8%)</td>
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<td>other</td>
<td>39 (18.1%)</td>
<td>28 (13.0%)</td>
<td>67 (31.2%)</td>
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* Three students were missing demographic data (2 accelerated and 1 traditional)
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## Fixed Effects Results from the Linear Mixed Effects Models

### Procedural Knowledge

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<th>Source</th>
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<th>DDF</th>
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<th>Time</th>
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### Conditional Knowledge

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### Informational Management Strategies

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### Comprehension Monitoring

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### Evaluation

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* Less than Bonferroni adjusted α=0.00625

$ § Interaction p-value less than α=0.05 implies that Time must be interpreted separately by Program
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Summary of Findings

(1) Nursing students’ metacognitive awareness benefited from the IPE museum-based experience in both groups.

(2) Group Differences:
- Traditional student group increase was greater than the accelerated group increase in Declarative and Planning knowledge.
- Traditional group benefited in the area of Comprehension Monitoring.

(3) The accelerated group started higher and ended higher in metacognitive awareness and the traditional students improved more over their baseline.
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Next Steps

Example Student Reflection

This exercise demonstrates the different ways that individuals may view and interpret objective data, and reminded me to be careful about the assumptions I may have – especially in the hospital setting. Although I may get a perception of a patient based on his or her chart, the patient may have completely different needs than I assume. Additionally, the exercise reminded me that another nurse may see a situation differently from me, which will be incredibly useful when dealing with difficult cases in the hospital.
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