Enhancing Conceptual Learning in Nurse Education

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Learning Objectives

• Examine how deep learning is influenced by learning strategies
• Compare traditional teaching and conceptual learning
• Evaluate the principles of conceptual learning
• Apply active learning strategies to enhance conceptual learning in nurse education
The Call for Change in Nurse Education

“New approaches must be developed for evaluating curricula and presenting fundamental concepts that can be applied in many different situations rather than requiring students to memorize different lists of facts and information for each situation.”

-The Future of Nursing
(The Institute of Medicine [IOM], p. 2, 2010)
The Call for Change in Nurse Education

- Healthcare transformation
- Knowledge explosion and technological advancements
- Higher level of clinical judgement needed by graduate nurses
The Learning Brain

Integrating Sensing

Responding

Information not integrated is lost

(Giddens, Caputi, & Rodgers, 2020)
Learning in Higher Education

Traditional Learning

- Content is “covered” during lecture. Mentally stored as unconnected, separate pieces of information.
  - Rote memorization
  - Passive Learning
  - Emphases on skills and facts

Figure 1: Traditional education model. Adapted from “Concept-Based Curriculum and Instruction for the Thinking Classroom” by Erickson et al., (2017).

(Erickson, Lanning, & French, 2017)
Traditional Nursing Education Overview

- Teacher-centered instruction to transfer knowledge
- Lecture-based approach
  - Passive Learning
- Systems-based learning
- Memorization emphasized

(McGrath, 2015)

- Content saturation
- Surface Learning
- “Sacred Cows”
- Fragmentation/Repetition
Learning in Higher Education cont.

Deep Learning

- Integrating new knowledge into cognitive structure.
  - Establish meaning
  - Distinguishing principles from examples
  - Promotes transfer of knowledge to different context
  - Active Learning

(Erickson, Lanning, & French, 2017)

Figure 1: Concept based model. Adapted from “Concept-Based Curriculum and Instruction for the Thinking Classroom” by Erickson et al., (2017).
Deep Learning

- Neuronal **connections** are created during meaningful learning
  - Allows for transfer of learning from one context to the next
- Facts and topics don’t transfer independently (Ignativius, 2018)

"Non-deep" feedforward neural network

Deep neural network
Concept-Based Curriculum (CBC) Structure in Nurse Education

• Curriculum is organized with concepts which cross the lifespan
  – Not systems-based
• Domains are used to organize the concepts
• Exemplars are used to exemplify the concept
• Focus on connections instead of facts
Conceptual Curriculum Structure

**Concept:** Clotting
- A-Fib
- DVT

**Concept:** Perfusion
- Heart Failure
- Hypovolemia
- Myocardial Infarction

**Concept:** Reproduction
- Eclampsia
- Placental Abruption

- Key mental constructs
- Key examples representing the concept
- Facts and skills
Conceptual Learning

• Learner-centered
  • Students take ownership for learning
• Active Engagement
• Focuses on lesser content to allow cognitive processing & deep learning

(Giddens et al., 2020)
Conceptual Learning

- Students learn information management
- Collaborative learning
- Treating the whole person, not just the disease
- Focus on clinical judgement/reasoning

(Giddens et al., 2020)
Conceptual Teaching

- Approach that facilitates meaningful learning in which students apply patterns of knowledge to different context
  (Ignatius, 2018)

Transition from “Sage on the Stage” to “Guide on the Side”
2-Minute Activity

Write out the process of you are using to facilitate the learning of your current concept.
What are the principles of conceptual teaching?

1. Concept Presentation
2. Exploring Exemplars
3. Link teaching
4. Connect to Previous Knowledge
5. Active Learning Strategies
1. Concept Presentation

- Formal introduction of concept
- Balance teacher-led and student-centered activities
- Consistent across a course or curriculum

(Giddens et al., 2020)
2. Exploring Exemplars

- Exemplifies the concept
- Deep exploration of the exemplar
  - Connect back to the concept presentation
- Provides a link to clinical practice
  - Enhances transfer of knowledge

(Giddens et al., 2020)

<table>
<thead>
<tr>
<th>Concept</th>
<th>Exemplar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruit</td>
<td>Strawberry, Apple</td>
</tr>
<tr>
<td>Gas Exchange</td>
<td>Pneumonia, COPD</td>
</tr>
<tr>
<td>Mobility</td>
<td>MS, Hip replacement</td>
</tr>
</tbody>
</table>
3. Link Teaching

- Case Studies
- Simulations
- Standardized Virtual Patients
- Placing knowledge into different context
- Clinical Assignments

(Giddens et al., 2020)
Link Teaching in the Clinical Environment

**Total Patient Care Activities (TPCA)**

- Planning, implementing, evaluating nursing care
- Ex. Clinical assignments

**Focused Clinical Learning Activities (FCLA)**

- Focus on one or more concepts during clinicals
- Ex. Compare/contrast perfusion between 5 patients

Can mix TPCA and FCLA depending on patient availability

(Giddens et al., 2020)
4. Connect to Previous Knowledge

- Assess previous knowledge on concept
- Build new knowledge on previous knowledge
- Pre-class worksheet/guided questions

(Giddens et al., 2020)
5. Active Learning Strategies

- Active application of concepts to nursing practice
- Collaboration is key!!!
- Transforming class into a learning experience

(Giddens et al., 2020)
Conceptual Based Implementation Challenges

- Faculty Resistance
- Student Resistance
- Implementation Struggles
- Knowledge Deficit
Active Learning

- Start Slow!
- Get messy!
- Explore and explain expectations of the class in the beginning of the course
- Pre-class work: 1:3 or 1:2 pre-class work/in class ratio
Active Learning cont.

- Create accountability with students
  - Ticket-to ride
  - Quizzes over reading

- Activities high-level Bloom’s taxonomy (application, analysis, evaluation)
  - Activities usually go longer than expected

- Match activities with objectives
Active Learning

- It is okay to lecture
  - Short, focused
- Explain how the activity contributes to learning
- Promote a calm environment
Active Learning Resources

• UND Teaching Transformation and Development Academy (TTaDA)- https://und.edu/academics/ttada/active-learning.html#d16e138-2

• Stanford Teaching Commons- https://teachingcommons.stanford.edu/resources/learning/activities-boost-student-engagement

• NurseTim

• Vanderbilt Center for Teaching https://cft.vanderbilt.edu/guides-sub-pages/active-learning/
1-Minute Activity

Based on what we just discussed, is there anything you can do to enhance the learning of your concept?
Next Generation NCLEX

“New item types being tested are designed to “expand or enhance the measurement of entry-level nursing competence, including clinical judgement.”

– NCSBN
New Items Currently Being Tested

• Based on Clinical Judgement model
• Items to measure clinical judgement
  – Whole process of problem-solving, decision-making, and critical thinking

• Drag and Drop
• Highlight
• Multiple Selection
• Matrix
• Cloze (Drop Down)
The nurse is assessing the client after performing intrauterine resuscitation.

For each finding, click to specify whether the finding indicates the intervention was effective, ineffective or unrelated:

<table>
<thead>
<tr>
<th>Assessment Finding</th>
<th>Effective</th>
<th>Ineffective</th>
<th>Unrelated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal temperature of 100.4°F (38.0°C)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FHR of 145</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absent fetal variability</td>
<td></td>
<td></td>
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<tr>
<td>Increase in bloody show</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Early decelerations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal HR of 76</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
New Test Items

Drag the potential steps the nurse should take to perform intrauterine resuscitation to the box on the right. Choose only the steps that are appropriate:

<table>
<thead>
<tr>
<th>Potential Steps</th>
<th>Appropriate Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place the client in the left lateral position.</td>
<td></td>
</tr>
<tr>
<td>Increase the infusion of titrated intravenous oxytocin.</td>
<td></td>
</tr>
<tr>
<td>Administer 10 L of oxygen via nonrebreather mask.</td>
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</tr>
<tr>
<td>Request that the obstetrician artificially rupture the client’s membranes.</td>
<td></td>
</tr>
<tr>
<td>Check the client’s cervix for changes in dilatation.</td>
<td></td>
</tr>
<tr>
<td>Increase the maintenance intravenous infusion.</td>
<td></td>
</tr>
</tbody>
</table>
Next Generation NCLEX

Currently conducting item analysis
Final decision to be announced Fall 2019
Earliest release would be 2022!

How do we prepare our students?
Conclusion

• Learning is a dynamic process which requires integration of information in order to transfer knowledge to different context
• Conceptual learning promotes this integration process to create deeper learning experiences
• The principles of CBC enhance conceptual learning in the classroom and clinical environment
• Active learning is an essential tool to prepare nurses for the trends in evaluating graduate nurses
Thank you for participating!
Please turn in your surveys at the front
