USE OF THEORY IN SIMULATION
Carol Persoon Reid, PhD, MS, RN, CNE, CHSE

OBJECTIVES
1. Identify two theories to guide simulation work.
2. Compare theory use for specific simulations and simulation programs.
3. Apply a theoretical framework to simulation design, facilitation and debriefing.

WHAT IS A THEORY?
Worldview = knowledge + environment + practice
POLL – DO YOU CURRENTLY USE THEORY?

- Do you currently use a theory as a framework for simulation program?
- Do you currently use theory for specific simulation scenarios or activities?

WHY IS THIS AN IMPORTANT CONVERSATION?

- Lack of evidence that theoretical framework is used in simulation, research, education, etc.
  - Kaakinen & Arwood, 2009; Pusic, Boutis & McGaghie, 2018
- Variety of theories from several disciplines may be used
  - Pusic, Boutis & McGaghie, 2018
- Challenges abound when considering theory
  - Program/Activity
  - Personal preference
  - Knowledge
  - Feasibility
  - Adamson, 2015

WHAT THEORIES ARE YOU USING?
SELECT THEORIES RELEVANT TO SIMULATION

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Cognitive</th>
<th>Constructive</th>
<th>Simulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classical conditioning</td>
<td>Conditions of Learning</td>
<td>Adult Learning</td>
<td>NLN - Jeffries</td>
</tr>
<tr>
<td>(Pavlov, Skinner)</td>
<td>(Gagne)</td>
<td>(Knowles)</td>
<td></td>
</tr>
<tr>
<td>Learning Curve</td>
<td>Novice to Expert</td>
<td>Social Constructivism</td>
<td>CPS (Khalil)</td>
</tr>
<tr>
<td>(Thurstone)</td>
<td>(Benner)</td>
<td>(Vygotsky, Bandura)</td>
<td></td>
</tr>
<tr>
<td>Forgetting Curve</td>
<td>Deliberative Practice</td>
<td>Reflective Practice</td>
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<td>(Ebbinghaus)</td>
<td>(Ericsson)</td>
<td>(Schön)</td>
<td></td>
</tr>
<tr>
<td>Cognitive Load</td>
<td>Clinical Judgment Model</td>
<td>Experiential Learning</td>
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<td>(Sweller)</td>
<td>(Tanner)</td>
<td>(Kolb)</td>
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<td>Social Learning</td>
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<td>(Bandura)</td>
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<td>Skill Acquisition</td>
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<td>(Dreyfus)</td>
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LEARNING AND FORGETTING

Learning Curve Theory (Thurstone)

- Logistic shaped pattern with increasing time spent practicing results in improved performance
- For example, operation time decreases as skill increases. Continued practice improves performance.

Forgetting Curve Theory (Ebbinghaus)

- Nonlinear pattern with rapid initial decay
- For example, clinicians lose CPR skills at an exponential rate. Repeated instruction is critical!
CLASSIC BEHAVIORISM
Pavlov and Skinner

CONSTRUCTIVISM
Piaget; Dewey; Bruner

ADULT LEARNING THEORY
• Learners are autonomous & self-directed
• Educators are facilitators
• Learning for change
  • skill
  • behavior
  • knowledge
  • attitude
Knowles; Whitmone-Price & Price, 2015
Levels of competence in skill acquisition

Modified perception of situation

Paradigm shift

Role change

Clinical Judgment Model (Tanner)

REFLECTIVE PRACTICE (SCHÖN)

- Important human activity in which people recapture an experience, think about it, mull it over and evaluate it (Boud, Keogh, & Walker, 1985)
- Technique that encourages critical thought, either with self or another individual or group (Whittmann-Price, Rockstraw, & Kirk, 2015)
- Specific process (Scansion & Chernomas, 1997; Riley-Doucet & Wilson, 1997)
  - Awareness
  - Critical analysis/appraisal
  - Discussion
  - Self-awareness

SITUATED LEARNING (LAVEE & WENGER)

Observe | Simulate
---|---
Learn
Do | Teach

CONDITIONS OF LEARNING (GAGNE)

- Enhance interest/anchor
- Make performance
- Provide feedback
- Reinforce
- Provide cues (hints)
- Model
- Reinforce
- Identify并对
- Gain attention
- Present stimulus (teaching)
COGNITIVE LOAD THEORY (SWELLER)

Deliberately apportioned to learner

Key concepts:
- Visual
- Auditory
- Data

EXPERIENTIAL LEARNING (KOLB)

- Knowledge is created through the transformation of experience
  - Concrete experience
  - Abstract conceptualization
  - Reflective observation
  - Active experimentation

- Experiential learning components
  - Providing an experience
  - Thinking about the experience
  - Identifying improvements
  - Planning the learning needed
  - Putting the learning into practice

DELIBERATIVE PRACTICE (ERICSSON)

Superior Performance

Safe Patient Care

- Repetition
- Feedback
- Learning
SOCIAL CONSTRUCTIVISM (VYGOTSKY, BANDURA)

- Often called “scaffolding”
- Knowledge of the world is constructed through social interactions
- Responses to client situations vary based on this knowledge

SIMULATION SPECIFIC THEORIES

NLN/JEFFRIES SIMULATION FRAMEWORK
CSP KEY STRATEGIES AND ASSOCIATED IMPACT

- Providing a non-judgmental and nonthreatening learning environment
- Applying experiential learning along with critical reflection
- Employing scenarios with some degree of fluidity and flexibility
- Replicating the reality of the workplace: a true-to-life simulated clinical setting
- Using interactive, inclusive, interprofessional patient-centered simulated practice
USING THEORY IN YOUR SIMULATION PROGRAM

• Break into groups
• Pick one theory
  • Work as a group to identify how you can incorporate a theory into your simulation program

CHOOSING THE THEORY FOR YOUR SIMULATION PROGRAM

• Single theory approach
• Multi-theory approach
  • Incorporate aspects of different theories to create your own
  • Choose different theories depending on situation (participants, type of simulation)
• Advantages & Disadvantages of
  • Using one theory versus several
  • Simulation specific theory versus education or other theories

REFERENCES

Grant & Marden. (1992)
Sutlow, M. & James & Barthe.
REFERENCES


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