Facilitating Conceptual Change in Healthcare Through the Application of the Single to Double-Loop Learning Model

Josh Hille and Chinweike Eseonu, Ph.D.
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Agenda

1. Introduction to research area
2. Rationale for research
3. Overview of proposed model
4. Next steps
Lean

- Elimination of waste

- Many success stories
  90% reduction in lead time, doubled product output, 70% increase in on-time shipping (Womack & Jones, 2003)

- Fewer than 25% of lean implementation attempts are successful

Failures often occur due to organization culture issues (Mirdad, 2014; Choothian, 2014)

- Lean is a methodology based on culture (Womack & Jones, 2003)
  Largely applied as a tool-based approach (Radnor, Holweg, and Waring, 2012)
Lean in Healthcare

- Research emphasis on lean in healthcare
  ≈50% of public sector research publications focused on lean, with 35% studying healthcare (Radnor, Holweg, and Waring, 2012)

- Lean in healthcare shows promise
  50% reduction in appointment waiting times, 30% reduction in patient death rate, $500k savings in ICU, £3.1m direct savings (Radnor, Holweg, Waring, 2012)

- Challenges:
  - Lean may be too “industrial” (Young & McClean, 2009)
  - Resource allocation is different in healthcare and manufacturing
  - Healthcare is capacity-driven and demand is difficult to influence (Radnor, Holweg, & Waring, 2012)

- Cultural and attitudinal barriers to improvement (Mazur et al., 2012)
Rationale

- Triple Aim: experience, outcomes, and cost
- U.S. health care system continues to lag behind other countries

Last in access, efficiency, equity, and healthy lives (Davis, Stremikis, Squires, & Schoen, 2014)

- U.S. has lagged behind for many years, but little has improved

2003 → 2014: LAST in overall health care compared to other developed countries (The Commonwealth Fund, 2003; Davis et al., 2014)

- Perceived failures adversely impact patient experience
  ≈ 50,000 deaths per year due to preventable errors (Naveh, Katz-Navon, & Stern, 2005)
Comparing Single and Double-Loop Learners

*Argyris, 1976*

**Single-Loop Learners**
- Behavior based on protecting oneself
- Defensiveness
- Minimal feedback
- Quick-fixes
- Reduced problem solving effectiveness

**Double-Loop Learners**
- Equalization of power
- Focus on positive teamwork
- Open communication
- Root cause investigation
- Commitment to problem solving
Single to Double-Loop Transition

(Mazur, McCreery, and Chen, 2012)

1. Motivation
2. Psychologically safe
3. Active involvement of direct managers
4. Constructive feedback
5. Job-related autonomy
6. Double-loop behavior
Theory of Conceptual Change
(Posner, Strike, Hewson, and Gertzog, 1982)

- **Dissatisfaction**
  Current concept is inadequate

- **Intelligibility**
  Concept can be understood

- **Plausibility**
  Concept is reasonable

- **Fruitfulness**
  Concept has potential to solve future problems
Focus on conceptual change
Concept of force in physics, homogeneous solutions in chemistry, etc.

REACT Strategy to achieve Theory of Conceptual Change steps

Effective transition from alternative conception
Students were highly motivated. Strategy is effective for larger groups.
Transition to Healthcare and Lean

REACT Strategy

Conceptual Change Text
Answer conceptual question to determine single or double-loop learning

Relating
Group discussion of answers to CCT and reaction to common errors

Theory of Conceptual Change

Dissatisfaction

Dissatisfaction
Discuss simple examples from healthcare (e.g. 5S results, visual workplace)

Applying Kaizen event in department

Cooperating Discuss/highlight impact on other areas

Transferring
• Application in day-to-day job
• Identify team members/ambassadors to contribute to projects in other departments
Conceptual Change Model

To facilitate the process, we must consider:
1. variables related to learner
2. variables related to social context
3. variables related to the teacher

Strategy:
- Preparation
- Generate a meaningful conflict
- Introduction
- Validation
- Initial Assessment
- Transfer
- Final assessment

Condition:
- Dissatisfaction
- Intelligible
- Plausible
- Fruitful

Initial/Final assessment:
- Unadapted
  - Does not realize conflict
    - \(\alpha\) – “Ignore”
    - \(\beta\) – “Partial Modification”
    - \(\gamma\) – “Accept Change”

Double Loop Learning
Next Steps

- Identify prospective health care organizations interested in conceptualization research in:
  - OR “timeout” checklist compliance
  - Technology adoption
  - Lean, CUSP, or other culture change initiatives

- Engage in light-footprint investigation to identify “best practices”

- Disseminate preliminary best practices and partner with participating organizations for further continuous improvement funds
Questions?

Josh Hille: (503) 407-4788  
Chinweike Eseonu, Ph.D.: (541) 737-0024  
hillej@onid.oregonstate.edu  
Chinweike.Eseonu@oregonstate.edu  
research.engr.oregonstate.edu/pigroup/
References


