System Thinking: An Innovative Problem-Solving Methodology for Nurse Leaders to Improve Practice and Care Outcomes

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Disclosure

Debra N. Thompson, PhD, RN, NEA-BC, FAAN has disclosed she is a member of the Board of Directors of Imagining Excellence (501c) .

This was discussed with the nurse planner. All potential conflicts have been resolved to ensure the content is evidence-based and free from commercial bias.

Session Objectives

Identify the science of system thinking to see, diagnose, design and solve problems to improve nursing practice, its environments, and care outcomes.

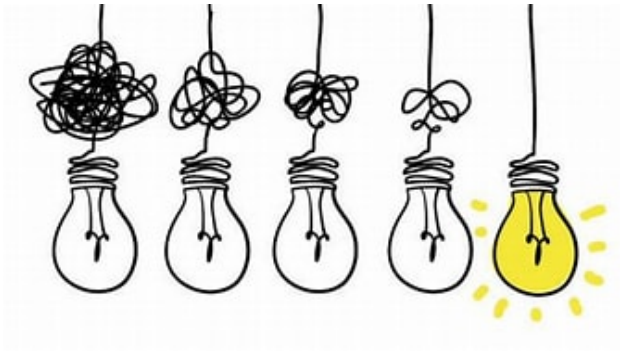
Examine the key characteristics in building a high-speed learning organization in healthcare

Nurses…

… are the bridge between science and compassion, embodying what it means to truly serve others. ❤️

anonymous

Finding Simplicity Amid Complexity



Using a *simple framework* that leverages *system thinking*

To highly engage *all caregivers and leaders* to

- **Do work well**
- **Solve problems, and**
- **Innovate**

Adaptable from the bedside to the boardroom






Eyes to See

Our mission

To spark curiosity and inspire innovation by bringing the science of human-centered system thinking to everyone.

System Thinking: Bringing to Life

Everyone agrees on the <u>GOALS</u>

<u>IDEAL</u>
On demand
Defect free
Immediately, 1X1
No waste
Safely (psychological & physically)

Alignment
throughout the entire organization to meet customer needs

Everyone agrees on the <u>WAY to DO WORK</u>

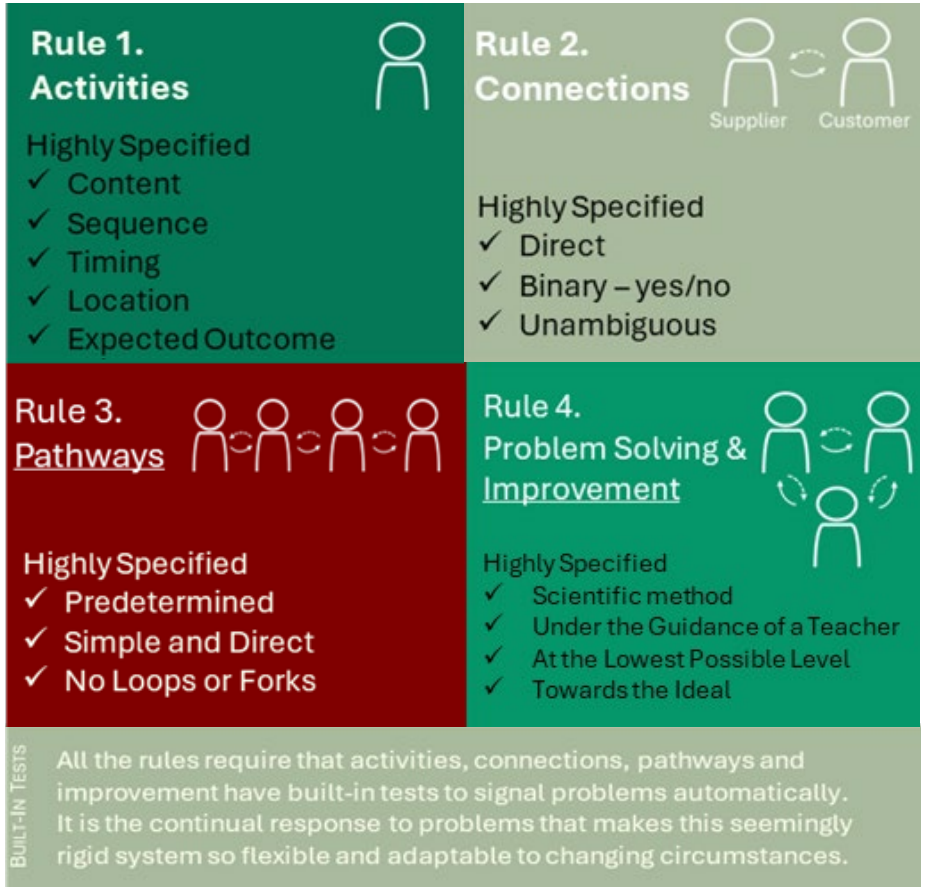
<u>Principles</u> to design, operate and improve all work

Bowen & Spear (1999)

The Simple Framework

Rules in Use (RIU)*

…to DESIGN, OPERATE, and IMPROVE ALL WORK



*Bowen & Spear (1999)

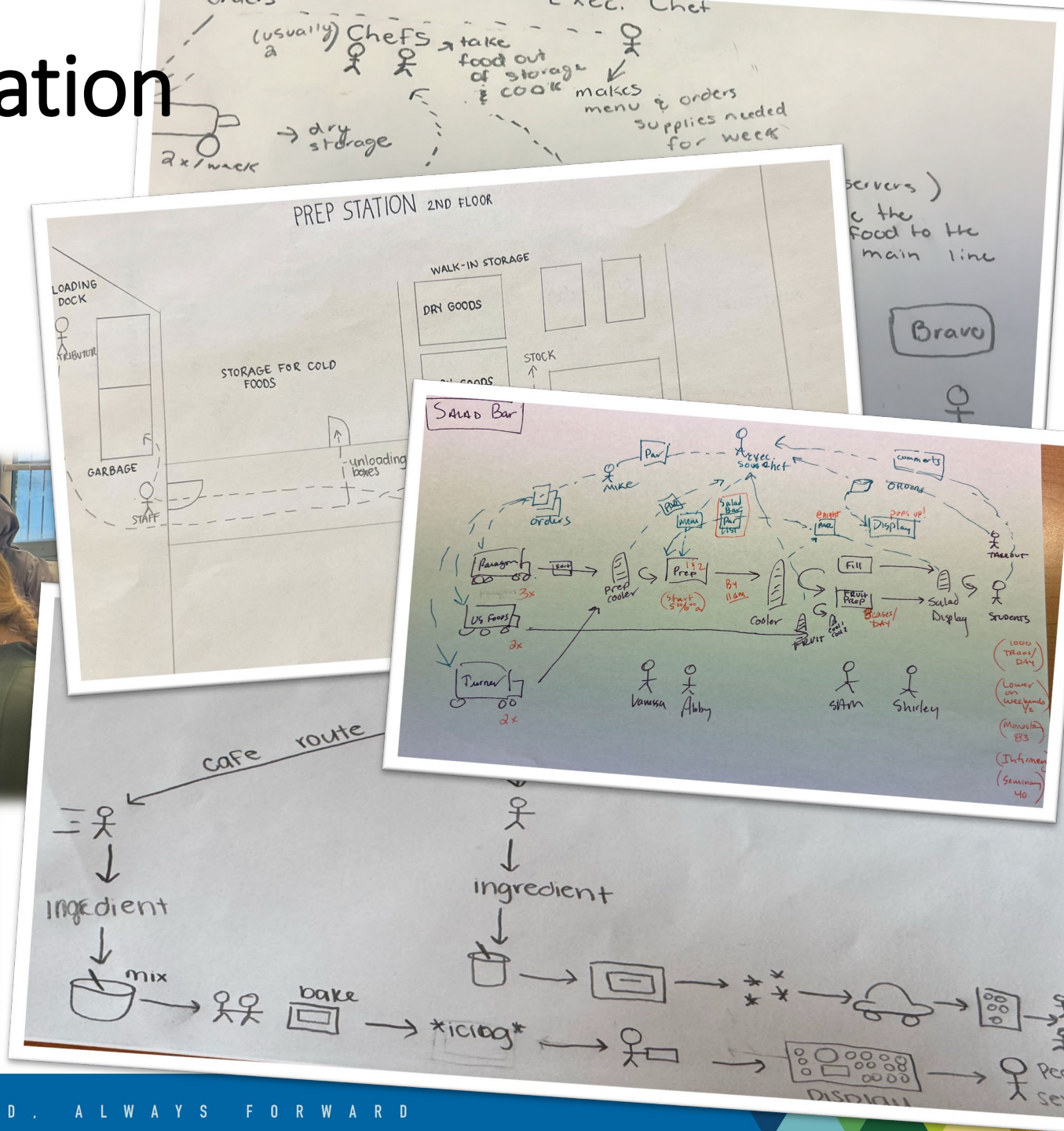
5 Questions of System Improvement

- ❑ Who is the customer, and what is their need?
- ❑ Who supplies what to whom?
- ❑ How does a customer make a request? How does each supplier respond?
- ❑ How does a supplier do their work?
- ❑ What problems exist and what problems are solved? By whom, when, where and how?

Tools	
• Direct observation *"Go & See"*	• Interdisciplinary collaboration
• Video	• Microcredential
• Drawings	• Gamification Exercises

Ex: Legos: Gamification - ABC LEGO Block Company

Ex. Drawing and Collaboration



Enabling a High-Speed Learning Organization

- Everyone solving problems, improving processes, and innovating as part of daily work without disrupting the system

- Awareness of interdependencies to strengthen system design and uncover root causes more effectively

- Stronger communication, teamwork, and mutual respect across traditional silos

Assessment

- Qualitative Insights
  - Complexity of systems
  - Systems within system
  - Avoidance of quick conclusions
  - Root cause problem-solving
  - Communication importance
  - Teamwork
  - Respect for people
- Quantitative Findings
  - Reduce nurse time in “hunting & searching”
  - Reduction in hospital-acquired infections
  - Improving patient flow
- Learning Outcomes
  - Group work
  - Direct observation and assessment
  - Expanded learning

Learnings

- Micro-credential and gamification are effective teaching strategies
- Positive interactive learning experience
- Strong interprofessional and interdepartmental collaboration

- “ My biggest insight is that a person should not jump to conclusions with solving problems. It’s important to look at the big picture because all parts of the system are connected.”
- “It is better to look at the bigger picture and focus on the goal rather trying to fix little problems one at a time because it would be like trying to play “whack- a –mole.”
- “How systems work is important it can help you understand your place of work.”
- “You have to fix a problem by starting at the very root or it will keep creating new/more problems.”
- “It’s important to learn the right way to do things but also use the scientific method to problem-solve.”
- “Communication is extremely important in every type of system, because without it, the system will never have the opportunity to improve.”

Next Steps Ideas

- ***Integration*** throughout undergraduate and graduate learning
- Expand learning strategies to further teach principles and way of thinking e.g. ***Gamification***
- Create ***Continuing Education*** offerings in system thinking
- Develop a ***Certificate in Organizational Excellence*** that includes system thinking

END

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References:

Bowen, K., Spear, S. *Decoding the DNA of the Toyota Production System*. Harvard Business Review. 1999.; Sept-Oct :97-106.

Notarnicola I, Duka B, Grosha E, Gioiello G, Rocco G, Stievano A. *Exploring the Role of Nurse Leadership Through a Systems Thinking Lens: A Systematic Review of Conceptual and Empirical Evidence.* J Adv Nurs. 2026 Mar;82(3):2036-2047. doi: 10.1111/jan.70047. Epub 2025 Jul 1. PMID: 40590457.

Nylen-Eriksen, M., Stojilijkovic, M. Lillefroken, D., Lindeflaten, K., Hessevaagbakke, E., Flolo, T.N., Hovland, O.J., Svarstad Solberg, A.M, Hansen, S., Bjornnes, A.K., & Torres, C. (2025). *Game-thinking; Utilizing serious games and gamification in nursing education* -a *BMC Medical Education,* 25(140),1-37.https://doi.org/10.1186/s12909-024-06531-7.

Why System Thinking

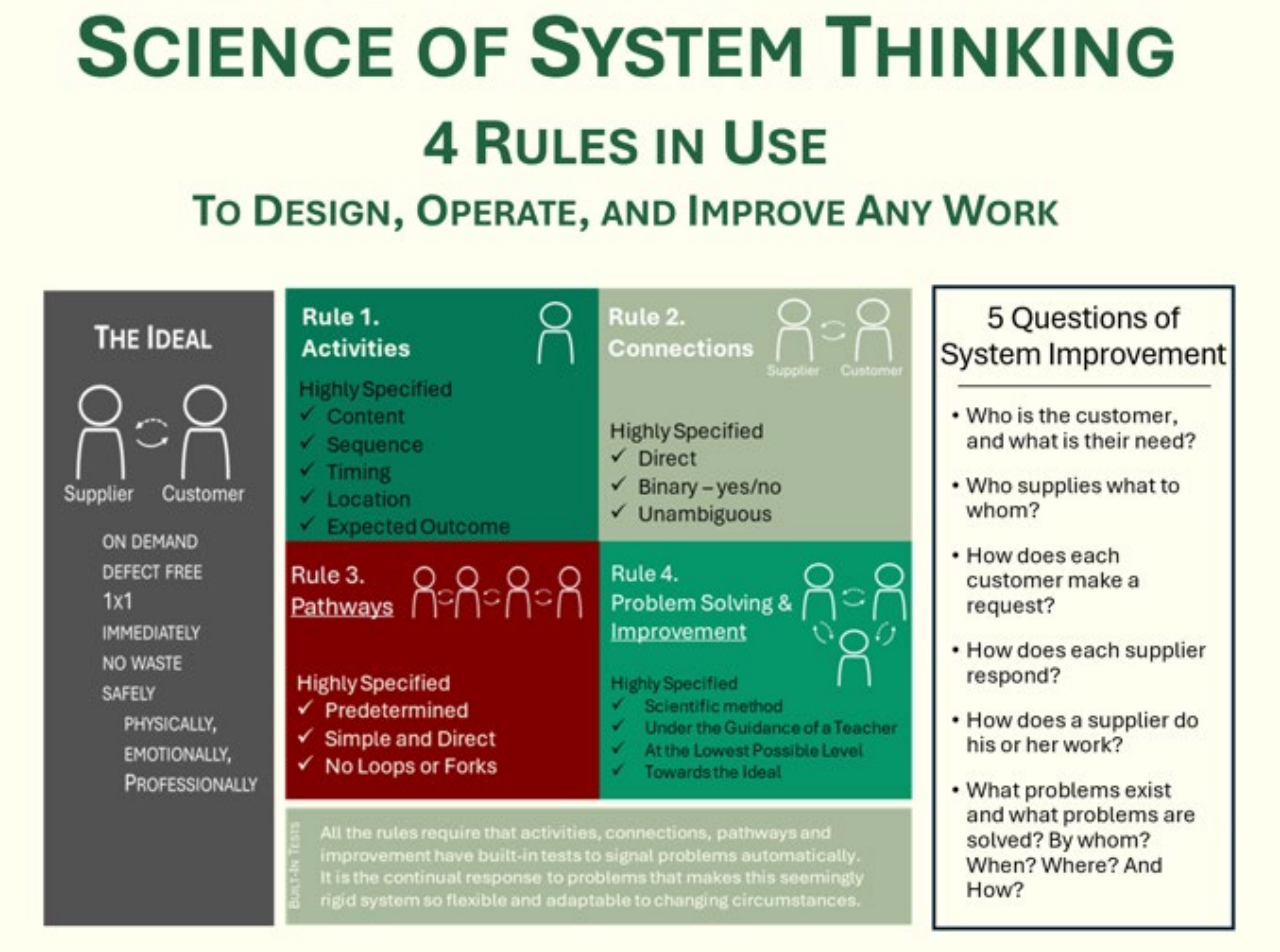
Problem-solving is an essential component of nursing practice

Nurse leaders need a problem-solving methodology **adaptable** from the bedside to the board room

System thinking provides an **effective** approach to healthcare complexity

Nurses lack **system thinking** application in practice

Science of System Thinking



SYSTEM THINKING VS. TRADITIONAL IMPROVEMENT

Aspect	Traditional	System Thinking
Focus	Prioritizes business efficiency	Focuses on customer or patient needs
Understanding	Conducted in classrooms or meeting rooms	Gained through direct observation at the workplace
Perspective	Works around the problem	Fixes the problem when it occurs
Problems	Viewed as isolated and people-centered	Seen as interconnected and rooted in the process design
Problem Solving	Skips directly from problem definition to solutions	Uses root cause analysis (5-Why) and evaluates Problem, Cause, Solution, Action, and Measure (PCSAM)
Improvement	Led by specialists, managers, or quality control teams	Driven by frontline team members
Engagement	Limited to a few individuals	Actively involves everyone
Quality	Relies on inspecting and removing defects	Builds quality into processes by empowering employees to prevent defects and not pass them on

Micro-credential Four Class Design

- Introduction of Framework
- Case Study
- Firsthand Observation
- Drawing and Collaboration

Science of System Thinking