Developing Systems Thinkers: Strategies for Effective Instructional Design

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Learning Objectives

After engaging in this session, participants will be able to:

(1) describe approaches to instructional design for systems thinking

(2) identify strategies for supporting systems thinking effectively in their own instructional context
Grounded design

Simultaneous alignment of foundations of learning environment

Psychological | Pedagogical | Technological | Pragmatic | Cultural

Backward Design

Identify Desired Results

Plan Learning Experiences

Determine Acceptable Evidence

Facets of Learning Outcomes

- **Transfer**: What complex tasks will learners be able to independently use their learning to do?
- **Meaning**: What overarching conceptual understanding do I want learners to perceive?
- **Knowledge**: What factual knowledge will learners need to make meaning of this concept?
- **Skills**: What discrete skills will learners need to be able to accomplish the complex tasks?

What is a system?

An interconnected set of elements that is coherently organized in a way that achieves something.

- Donella Meadows
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What is systems thinking?

A set of **habits of mind** that can lead to mental models of complex systems that are closer to the “real” world.
Systems thinking versus systems science

[Image: Obesity System Map]

What kind of systems thinking?

(da Costa Junior, Diehl, & Snelders, 2019)
Considerations for Instructional Design

Define learning goals related to both content and process (systems thinking)

Consider how systems thinking is used in your (inter)disciplinary context

Identify potential points of confusion and plan for how you will break them down

Scaffold systems thinking concepts along with other concepts

Incorporate use of systems language explicitly

Activities, assessments, projects, courses
Health Systems Science

Systems concepts

- Scale
- Multiple interacting subsystems
- Multiple causal factors can influence one outcome
- Dynamic systems
"An approach to problem solving that views ‘problems’ as part of a wider, dynamic system...It demands a deeper understanding of the linkages, relationships, interactions, and behaviors among the elements to characterize the entire system."

Your turn! Facilitated breakout room discussion

Goal: Work with your colleagues to identify strategies for supporting systems thinking effectively in your own instructional context.

Guidelines

- Facilitators will start things off
- Take the discussion in a direction that is generative for participants
- Make sure that everyone has a chance to share and get input
- Freedom to leave/join new group if needed

End at 12:45
Key insights from small group discussions
“being a systems-minded [practitioner/educator] requires the development of a new professional identity as much as knowledge acquisition...it also involves an expanded mindset that necessitates caring for and addressing insufficiencies in the system as obligatory aspects of the professional role.” (p. 1429)
How we are at the small scale is how we are at the large scale. The patterns of the universe repeat at scale. There is a structural echo that suggests...what we practice at a small scale can reverberate to the largest scale.

- adrienne marie brown

