Introduction to Systems Thinking for Early Childhood Leaders

CEELO Leadership Academy
New Orleans, LA
June 3, 2015

Facilitator:
Tracy Benson Ed.D.
President/CEO
Waters Foundation Systems Thinking Group
t.benson@watersfoundation.org

www.watersfoundation.org
Today’s Learning Goals

1. You will be able to identify ways ST habits and tools can **positively influence your leadership development and impact program development**.
2. You will be able to identify ways ST habits and tools apply to your **job-embedded projects and the roles you play as state level leaders**.
3. You will leave the day with concrete ways the new tools and strategies can be applied to your **leadership work**.

---

**Big Picture of the Day**

- [Image of a graph with various elements connected by arrows, indicating concepts related to leadership and development.]

---

1
Systems Thinking

Aspiration
- Personal Mastery
- Shared Vision

Reflection
- Mental Models
- Dialogue
- Collaborating

Capacity Building

Examples of Systems Thinking Tools:
- Behavior-over-time graphs
- Stock/flow maps and computer models
- Ladder of inference
- Causal loops
- Connection circles
- Iceberg
Characteristics of Complex Systems

- Boundaries
- Parts or Elements
- Interdependencies (Relationships)
- Goal or Purpose
- Dynamics

Mental Models

Mental models are deeply ingrained assumptions, generalizations, or even pictures or images that influence how we understand the world and how we take action.

Based on your understanding of complex systems, what are some of the biggest challenges you face as a leader?
Seeks to understand the big picture

Observes how elements within systems change over time, generating patterns and trends

Recognizes that a system’s structure generates its behavior

Identifies the circular nature of complex cause and effect relationships

Makes meaningful connections within and between systems

Changes perspectives to increase understanding

Surfaces and tests assumptions

Habits of a Systems Thinker

Considers an issue fully and resists the urge to come to a quick conclusion

Considers how mental models affect current reality and the future

Uses understanding of system structure to identify possible leverage actions

Considers short-term, long-term and unintended consequences of actions

Pays attention to accumulations and their rates of change

Recognizes the impact of time delays when exploring cause and effect relationships

Checks results and changes actions if needed: “successive approximation”
What connections can you make between the Habits of a Systems Thinker and your experience with Adaptive and Reflective Leadership?

Which Habits are especially important to your early childhood leadership work?
My beliefs affect what I choose to notice in the future.

I notice certain information & experiences.

I add my own meaning. (cultural & personal)

I develop beliefs based on the meaning I add.

I do something because of my beliefs.

My beliefs affect what I choose to notice in the future.

Information & experiences around me

Adapted from The Fifth Discipline Fieldbook
Systems Thinking in Schools, Waters Foundation
Practices that help you use The Ladder of Inference

- **Reflection**
  - Suspend judgment
  - Become more aware of your own thinking and broaden your observations

- **Inquiry**
  - Inquire into other’s thinking and reasoning
  - Ask open-ended questions that seek clarification

- **Advocacy**
  - Make your thinking and reasoning more visible to others by describing what influenced your thinking and your actions

Notes:
The Big Picture

Iceberg... Seeing What’s Below the Surface

Events
What happened?

Patterns of Behavior
What has been happening?
What are the trends?
What changes have occurred?

Underlying Structures
What has influenced the patterns?
(e.g. policies, laws, physical structures)
What are the relationships among the parts?

Mental Models
What assumptions, beliefs, and values do people hold about the system?

What is seen

What is generally unseen

Iceberg...
Seeing What’s Below the Surface

Learning

Leverage

perception
belief
action

The Big Picture

Events

Patterns of Behavior

Structure of the System

Mental Models

Learning

Leverage

perception
belief
action

©2015 Waters Foundation
www.watersfoundation.org
What are some mental models you may be holding (about the system, about others) that may be barriers to achieving your desired outcomes?
BOTG Basics

Using BOTGs to identify current and desired trends
Behavior-Over-Time Graphs:
What is changing over time?
How are the essential elements changing?

Some sample questions to ask when identifying parts of a system that change over time:
- What important elements have changed over time?
- How has __________ changed over time?
- During what period of time have the changes occurred?
- Where on the y-axis should the graph start and why?
- How would you label the bottom/middle/top of the y-axis?
- What evidence supports the graph being created?

Questions to consider once BOTGs have been created:
- What caused any changes in direction or slope?
- How are interpretations of a graphed element the same or different?
- What changes may happen in the future based on what has been happening?
- Do you see any connections (interdependencies or causal relationships) between/among graphs?
Causal Loop Archetypes

Archetypes capture “common stories” that occur repeatedly in diverse settings.

What do they look like?

They are drawings with multiple, interconnected feedback loops.
Causal Loop Archetypes help you see and understand systems.

Archetypes are lenses or perspectives from which to see causal connections that create system behavior.

And, they help you anticipate possible problems before they occur.

Archetypes help you visually describe a complex situation or system.

Archetypes are shorthand for diagramming complex cause-effect relationships.

There are many archetype stories.

- **Fixes that Backfire**
- **Shifting the Burden**
  - Drifting Goals
  - Success to the Successful
  - Escalation
  - Accidental Adversaries
  - Tragedy of the Commons
  - Growth and Underinvestment
  - Limits to Success
  - Revolution
  - Story Structure
Fixes that Backfire Questions

Has the need to respond quickly to a problem been greater than the importance of investigating potential unintended consequences?

Did the response help to reduce the problem in the beginning, but overtime, did consequences actually contribute to the original problem?
Fixes-that-Backfire

Problem
Symptom

Fix

Unintended
Consequences

B

R

Shifting the Burden Questions

How can we address problems that continually pop up no matter what we do to try and solve them?

What happens when we develop dependencies on short-term, quick-fix solutions to problems?

How can we focus on more long-term fundamental solutions?
Shifting the Burden

Symptomatic Solution

Problem Symptom

Fundamental Solution

Side Effect Dependency

Causal Loop Diagrams (CLDs) aka Feedback Loops

**Feedback:** As different parts of a system affect each other, causes become effects which in turn become causes.

Causal Loop Diagrams (CLDs) show circular causal relationships (feedback) within a system. CLDs can show “how” and “why” a system operates the way it does.

There are 2 types of feedback loops:
- Reinforcing Loops
- Balancing Loops.
Reinforcing Feedback

- "Things are getting out of control!"
- "I can’t keep up!"
- "We are really on a roll now!"
- "It’s spreading like wild fire!"

Reinforcing Feedback

- Creates a reinforcing or compounding effect
- Examples of reinforcing feedback:
  - Rumors: “I told only one person, but soon everyone knew!”
  - Virus: “Only few had the virus at first, but soon it became an epidemic.”
  - Fads: “That fashion fad caught on quickly because soon everyone had to have it.”
Reinforcing Feedback
Causal Loop Diagram

Core Theory of Success
Reinforcing Feedback

Reinforcing Efficacy

Personal Efficacy
“I have skills that help me believe I can succeed.”

Achievement
“I have proof of my success.”

Effort
“I try my hardest because I believe I can succeed.”

Another look at reinforcing efficacy

Personal Efficacy
“I lack skills and feel like a failure.”

Achievement
“See, I told you I can’t do it.”

Effort
“Why bother trying. What’s the use?”
Balancing Feedback

- “We are experiencing some subtle ups and downs.”
- “I can sense that things are beginning to settle down.”
- “We seem to be achieving balance and stability.”
- “Our system is close to reaching our goals.”

Balancing Feedback

- Creates an equalizing or oscillating effect
- Examples of balancing feedback:
  - Room temperature: “When the thermostat is working, the room temperature tends to be constant when it is hot outside.”
  - Exercise: “When I play basketball, my cardiovascular system and muscles are working very hard. I appreciate timeouts that give me short rest, and then I am able to get back in the game and play hard again.”
  - Supply and demand: “When fewer items are available, the price can be high, but when many are available, they tend to go on sale.”
  - Television volume: “Sometimes I have to turn the volume down during commercials to keep the volume at a constant level.”
Intervention Strategies = +

Actual State of the System

Goal or Desired State of the System

Gap

Actual State of the System

Intervention Strategies

Actual State of the System

Goal or Desired State of the System

Gap

Actual State of the System

Intervention Strategies

Actual State of the System

Goal or Desired State of the System

Gap

Actual State of the System

Intervention Strategies
What are ways that you manage creative tension in your work setting?

What are the indicators that tell you the gap is too small or too big among your colleagues and others with whom you work?
Reflecting on your iceberg, what might you see as leverage actions that you may not have considered before?
Habits of a Systems Thinker

You know you’re a SYSTEMS THINKER if you pay attention to...
What new learning, insights and/or new approaches to leadership have you developed today? How will your systems thinking learning impact you and your work?