

# Systems Thinking for School Leaders

## An Introduction

*How can school leaders use the skills of Systems Thinking to navigate and address the complex challenges of modern education?*

In this workshop, school leaders will explore how Systems Thinking can be applied to transform their schools and better prepare students for the complexities of the modern world. Leaders will gain insights into using Systems Thinking to navigate and address the multifaceted challenges of contemporary education, focusing on long-term transformational leadership rather than short-term management. The workshop will also emphasize strategies for balancing immediate management needs with the pursuit of transformative change, equipping leaders to foster a more responsive and dynamic educational environment.

### Presented by Dr. Steven Lyng

Dr. Lyng's career in educational leadership spans over 25 years in both public and private schools. In his work with educators and students, Dr. Lyng focuses on building a community where educators are inspired to innovate, and students are encouraged to achieve. Dr. Lyng is the founder of the [Go Fourth Learn Project](https://gofourthlearn.com), which is dedicated to redefining the landscape of education through innovative leadership and a commitment to creating relevant and engaging learning environments for today's students.

### Workshop Agenda

#### Session One - Understanding Systems Thinking in Education

Leaders will begin to view their schools as interconnected systems and consider the broader effects of their decisions.

#### Session Two - Deming's Theory of Profound Knowledge

Leaders will grasp the importance of Profound Knowledge in identifying root causes of issues rather than treating symptoms.

#### Session Three - Systems Mapping for School Improvement

Leaders will leave with practical tools for diagnosing school issues systemically and identifying points of intervention for long-term improvement.

#### Session Four - Using Causal Loops to Understand School Dynamics

Leaders will understand how small actions can have larger, unintended consequences due to feedback loops, and how to manage those loops effectively.

#### Session Five - Overcoming Barriers to Systems Thinking

Leaders will learn how to address and overcome resistance to Systems Thinking and school transformation.

#### Session Six - Building a Systems Thinking Roadmap for Transformation

Leaders leave with a customized action plan to begin applying Systems Thinking principles in their schools, driving both short-term and long-term improvements



For workshop inquiries, contact

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*We are here to learn,  
to make a difference  
and to have fun.*

*-W. Edwards Deming*

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## WORKSHOP OUTLINE

### Overarching Essential Questions

- How can school leaders apply Systems Thinking to transform their schools and prepare students for the complex, rapidly changing world?
- How can school leaders use Systems Thinking to navigate and address the complex challenges of modern education?
- How can adopting a Systems Thinking approach help school leaders meet the needs of today's high school students?
- How does understanding and applying Profound Knowledge enhance leadership and transformation in schools?

### Workshop Outcomes

- **Goal #1:** Leaders will understand and apply Systems Thinking as a tool for addressing complex school challenges.
- **Goal #2:** Leaders will develop strategies to move from short-term management tasks to long-term transformational leadership.
- **Goal #3:** Leaders will understand the foundational concepts of Systems Thinking and its relevance to modern education.
- **Goal #4:** Leaders will learn Deming's Theory of Profound Knowledge and apply its principles to their school context
- **Goal #5:** Leaders will use Systems Thinking tools (such as Causal Loops and Systems Mapping) to identify leverage points for school improvement.
- **Goal #6:** Leaders will develop strategies for balancing the immediate demands of school management with the long-term goal of transformational change.

### GFL Trained Leaders Will Know

- The traditional system of education was made to prepare students for a traditional set of jobs and careers that are rapidly ceasing to exist.
- That deep and powerful learning requires a personal interest in what is being learned.
- That deep and powerful learning is tied to emotional experiences.
- That students with access to the internet are learning more outside of school than they are learning in school.
- That traditional grading systems are counterproductive and potentially harmful.
- That students must be regular participants in the development of course content and activities. Student agency must become the norm rather than the exception
- That the higher education system across the country is responding to the same realities, and making similar transformations.

### GFL Trained Leaders Will Be Able To

- Acknowledge and discuss the associated issues with transforming education in their schools to internal and external constituencies.
- Become influential thought leaders on the future of education in their school communities.
- Generate persistent and incremental change in response to growing awareness of the need to transform teaching and learning in schools.
- Take examples of successful transformation in other schools and adapt to their own school environments.
- Create experiential learning opportunities that integrate content with the "authorship learning" experiences for both students and teachers.
- Take initiative in the acquisition of a new set of skills and dispositions based on systems thinking in order to make the needed shifts in practice and pedagogy.

### Workshop Vocabulary

Actionable Insights  
 Adaptive Capacity  
 Balancing Feedback  
 Behavior Over Time  
 Behavioral Patterns  
 Causal Loop Diagram  
 Complexity  
 Constraint  
 Dynamic Equilibrium  
 Dynamic Modeling  
 Emergent Behavior  
 Feedback Loop  
 Holistic Thinking  
 Interconnectedness  
 Leverage Point  
 Mental Model  
 Motivation  
 PDSA Cycle  
 Policy Resistance  
 Profound Knowledge  
 Resilience  
 Scenario Planning  
 Stock and Flow Diagram  
 Systems Mapping  
 System  
 System Archetypes  
 Systemic Thinking  
 Theory of Action  
 Transformational Leadership  
 Variation

### Workshop Essential Questions

- How can Systems Thinking be applied to address specific complex challenges within our schools?
- What are the foundational concepts of Systems Thinking, and why are they relevant to modern education?
- In what ways can understanding and applying systems thinking help transition from short-term management tasks to long-term transformational leadership?
- How can we use Systems Thinking tools, such as Causal Loop Diagrams and Stock and Flow Diagrams, to identify and leverage points for school improvement?
- What are the core principles of Deming's Theory of Profound Knowledge, and how can they be integrated into our school context?
- How does the concept of feedback loops help us understand and manage the dynamic behaviors of school systems?
- What strategies can we employ to balance the immediate demands of school management with the need for long-term transformational change?
- How can we develop and utilize mental models to better understand and address the complexities within our schools?
- What role do constraints play in our school systems, and how can we identify and address these constraints effectively?
- How can we apply the concept of Adaptive Capacity to improve our school's resilience and ability to respond to change?
- What are some common System Archetypes we might encounter in our schools, and how can recognizing these patterns help us address recurring issues?
- How can Scenario Planning enhance our ability to anticipate and prepare for future challenges in the educational context?
- What is the relationship between Emergent Behavior and the overall effectiveness of our school systems, and how can we influence positive outcomes?
- How can the principles of Systems Thinking guide us in making more informed and cohesive decisions for school improvement?

## Potential Misunderstandings When Implementing Systems Thinking

**Systems thinking is too complex for everyday school operations.** - While systems thinking can seem complex, it involves understanding and improving the relationships between various components of the school system. Principals can integrate systems thinking into daily practices with proper training and support to enhance decision-making and problem-solving.

**Systems thinking requires a complete overhaul of existing processes.** - Systems thinking does not necessitate a total redesign of school operations. It encourages incremental improvements and better integration of existing processes, focusing on understanding how changes in one area can affect others.

**Teachers and staff will resist systems thinking because it disrupts their routines.** - Resistance may arise initially, but involving teachers and staff in the process and demonstrating the benefits of systems thinking can lead to buy-in. Engaging the whole school community in collaborative problem-solving can ease transitions and foster a more supportive environment.

**Implementing systems thinking will immediately solve all school problems.** - Systems thinking is a long-term approach that focuses on understanding underlying issues rather than offering quick fixes. It requires patience and ongoing effort to see meaningful results and improvements over time.

**Systems thinking is only useful for large-scale changes, not for daily tasks.** - Systems thinking can be applied to both large-scale strategic planning and everyday tasks. It helps principals and staff understand how small changes and interactions affect the broader school environment, leading to more effective and coherent daily operations.

## Systems Thinking for School Leaders - An Introduction - Workshop Sessions

Session One - Understanding Systems Thinking in Education	Session Two - Deming's Theory of Profound Knowledge
<p><b>Goal:</b> Introduce Systems Thinking and its importance in modern school leadership.</p> <p><b>Theory:</b> Explore the idea that a school is a system with interconnected parts, and that changes in one part of the system can lead to unintended consequences in another.</p> <p><b>Activity:</b> Participants work in small groups to map their schools as systems, identifying key parts (e.g., students, teachers, parents, curriculum) and their interdependencies.</p> <p><b>Outcome:</b> Leaders will begin to view their schools as interconnected systems and consider the broader effects of their decisions.</p>	<p><b>Goal:</b> Understand and apply the four components of Deming's Profound Knowledge to school leadership.</p> <p><b>Theory:</b> Review the four components: <u>Appreciation for a System</u>: Understand the school as a whole, rather than isolated parts. <u>Knowledge about Variation</u>: Recognize and manage variation in student outcomes, teaching methods, and school operations. <u>Theory of Action</u>: Reflect on the assumptions that underpin practices and operations in the school. <u>Understanding Human Psychology</u>: Understand what motivates students, teachers, and parents to engage in or resist change.</p> <p><b>Activity:</b> Principals break into groups, discussing specific challenges in their schools and applying the four elements of Profound Knowledge to explore potential solutions.</p> <p><b>Outcome:</b> Leaders will grasp the importance of Profound Knowledge in identifying root causes of issues, rather than treating symptoms.</p>
Session Three - Systems Mapping for School Improvement	Session Four - Using Causal Loops to Understand School Dynamics
<p><b>Goal:</b> Learn how to map the dynamics of a school system and identify leverage points for change.</p> <p><b>Theory:</b> Explore the use of Systems Mapping to visualize the relationships between different elements in a school and to spot feedback loops.</p> <p><b>Activity:</b> Principals choose one current issue in their school (e.g., low student engagement, staff burnout) and create a Systems Map that includes feedback loops and potential leverage points. They then identify small changes that could create significant positive outcomes.</p> <p><b>Outcome:</b> Leaders will leave with practical tools for diagnosing school issues systemically and identifying points of intervention for long-term improvement.</p>	<p><b>Goal:</b> Understand how feedback loops influence school dynamics and outcomes.</p> <p><b>Theory:</b> Introduce the concept of Causal Loops, including reinforcing loops (which amplify changes) and balancing loops (which stabilize systems).</p> <p><b>Activity:</b> In pairs, participants draw Causal Loops for a real-world problem in their school, such as student disengagement or teacher turnover. They analyze how reinforcing or balancing loops might be perpetuating the problem.</p> <p><b>Outcome:</b> Leaders will understand how small actions can have larger, unintended consequences due to feedback loops, and how to manage those loops effectively.</p>
Session Five - Overcoming Barriers to Systems Thinking	Session Six - Building a Systems Thinking Roadmap for Transformation
<p><b>Goal:</b> Address common barriers and misconceptions about Systems Thinking in school leadership.</p> <p><b>Theory:</b> Review typical roadblocks such as "We already do this," "Technology will solve the problem," and "Parents don't want this." Connect these roadblocks to the fixed mindsets that limit school transformation.</p> <p><b>Activity:</b> Participants engage in a role-playing exercise where they engage various stakeholders (e.g., parents, teachers, district officials) resistant to change. Using Systems Thinking principles, they practice reframing conversations to move toward systemic solutions.</p> <p><b>Outcome:</b> Leaders will learn how to address and overcome resistance to Systems Thinking and school transformation.</p>	<p><b>Goal:</b> Develop a plan to integrate Systems Thinking into daily school leadership and long-term transformation.</p> <p><b>Theory:</b> Focus on creating a balance between short-term management tasks and long-term systemic change.</p> <p><b>Activity:</b> Each participant drafts a "Systems Thinking Roadmap" for their school, identifying:</p> <ul style="list-style-type: none"> <li>Immediate actions (e.g., gathering data on system performance, starting Systems Mapping with staff).</li> <li>Long-term goals (e.g., embedding Systems Thinking into school culture, professional development, and decision-making).</li> <li>Key leverage points to focus on for maximum impact.</li> </ul> <p><b>Outcome:</b> Leaders leave with a customized action plan to begin applying Systems Thinking principles in their schools, driving both short-term and long-term improvements.</p>