

Introduction to Systemic Improvement

SYSTEMS THINKING

Most of us can recall learning about icebergs at some point in our elementary school science classes. Perhaps the most fascinating fact we remember is that approximately 90% of an iceberg's mass lies below the surface of the water, with only a small portion of the iceberg visible above the surface. Thus, the expression "tip of the iceberg" often refers to how a problem manifests itself at a superficial level. The real causes for the problem lie deep below the surface.

One might ask, "What do icebergs have to do with systemic change?" Senge et al. (2000) use an iceberg analogy to illustrate the necessity of looking below surface events in order to truly understand and then solve school problems. Rather than addressing only the visible aspects of a problem, Senge et al. suggest probing deeper to identify *trends and patterns* in the behavior of an organization (e.g., a school system) to begin revealing the actual source of the problem. However, while identification of these trends and patterns over time is important in analyzing problems, Senge cautions that this information is still inadequate to understand and then address the underlying cause of the problem.

For deeper understanding, Senge and his colleagues suggest delving into *systemic structures* to reveal underlying forces (and interactions among these forces) that contribute to the trends and patterns in organizational behavior. By exploring this deeper level, one can discover fundamental aspects of the system that allow the problem to continue.

Yet, Senge et al. (2000) advocate looking even deeper to consider *mental models* existing within the organization that perpetuate undesirable systemic structures. Such mental models, which are shaped by the values, beliefs, and attitudes of those within the organization, influence both individual and collective views of how the district or school should work. Senge and colleagues propose that systemic thinkers go beyond merely recognizing such models and, instead, honestly question their validity. Challenging these mental models often helps get to the underlying cause of the problem and set the organization on the path toward systemic change.

Systems Thinking in Education

What, then, does systemic thinking have to do with district and school improvement? In 2004, Dennis Sparks, former executive director of the National Staff Development Council (now Learning Forward), noted,

Every system is specifically designed to produce the results it is getting. The interconnectedness of all parts of the educational enterprise means classrooms, schools, and school districts are tied together in a web of relationships in which decisions and actions in any one part affect the other parts and the system as a whole. (p. 245)

Real change within a local educational system thus requires us to see the connections and “give attention to the interrelationships among multiple aspects of the system so that each is supportive of the others” (Cowan, 2006, p. 597).

Sashkin and Egermeier (1993) describe three traditional approaches to improvement that have shaped school reform efforts during the past half century:

- A “fix the parts” approach that focused only on strengthening key components of the education system, such as curriculum, instruction, and assessment
- A “fix the people” approach that promoted improvement only through staff training and professional development
- A “fix the school” approach that highlighted using only an organizational development perspective to improve individual schools

The authors propose that the lack of success of many educational reform efforts is attributable to exclusive emphasis on only one of these traditional approaches without the others. It is only when these three approaches are integrated and coordinated that significant and sustainable change can be expected.

SEDL'S WORKING SYSTEMICALLY: A PROCESS GROUNDED IN RESEARCH

In December 2000, the U.S. Department of Education awarded SEDL (formerly Southwest Educational Development Laboratory) a five-year contract to test a systemic approach designed to improve student achievement in reading or mathematics in low-performing districts and schools. The SEDL team drew upon more than two decades of school reform research and theory (e.g., Bossert, 1985; Hallinger & Murphy, 1986; Jenlink, Reigeluth, Carr, & Nelson, 1998; Stringfield, 1995; Teddlie & Stringfield, 1993) to identify the levels, components, and competencies of a systemic approach.

SEDL staff also investigated existing reform models that used a rational process to identify the gaps between effective and low-performing schools (Blum & Landis, 1998; Edmonds, 1979; Lezotte & Jacoby, 1992). However, it soon became apparent that many of these processes addressed only one particular

gap, or problem, as it manifested itself at only one level of the system—most often at the building or classroom level. A common strategy used at that time was to find a program to fix one problem, then identify another problem and turn to another program to fix that one.

Additionally, because the underlying causes for gaps and problems were not always explored, schools typically focused on tackling the more apparent “symptoms” of their problems and failed to recognize a fundamental malfunction in the local system. As a result, the underlying problems never got “fixed” and continued to have a negative impact on schools and classrooms. This approach is like seeing water rise in a sinking boat (symptom of a problem) and merely bailing the water out (addressing the symptom) rather than trying to fix the leak (the real problem).

Testing and Refining the Working Systemically Approach

Under its contract with the U.S. Department of Education, SEDL staff worked in 23 districts and 49 schools across its five-state region—Arkansas, Louisiana, New Mexico, Oklahoma, and Texas—to test and refine the Working Systemically approach. Each of the sites in the study included the school district office and at least one school. Some of the sites were rural, some suburban, some urban. All were low performing.

In testing the Working Systemically approach, SEDL staff collected and analyzed data to design, evaluate, and refine specific steps and resources for systemic improvement (Huie, Buttram, Deviney, Murphy, & Ramos, 2004). Student achievement data were collected from partner districts and schools throughout the project. The team used a quasi-experimental design to measure student achievement gains and matched each school in the study to a composite school that represented an aggregate of similar schools in that state.

When viewed across all sites, the achievement gains were mixed, but there were encouraging results. Analyses correlating measures of systemic work and student outcomes across sites showed a statistically significant relationship between increased capacity to work systemically and student achievement in 2003 and 2004.

Results also indicated that activities related to improved alignment of curriculum, instruction, and assessment were most closely related to student achievement. Questions, therefore, began to be raised about the role of the school district in the improvement process and the need to consider the inter-related roles of individuals at multiple levels of the local system as proposed by recent studies (Murphy & Meyers, 2008; Rorrer, Skrla, & Scheurich, 2008; Thornton, Shepperson, & Canavero, 2007).

Overall, three key findings emerged from SEDL’s testing of the Working Systemically approach that serve as a foundation for guiding others in the process:

- Districts and schools should stop trying to address every problem with a unique solution and focus their improvement plans on systemic

strategies that are small enough to be manageable but large enough to make a difference in student achievement.

- To increase the probability of successfully improving student achievement in low-performing systems, the district needs first to concentrate its efforts on aligning curriculum, instruction, and assessment to state standards.
- Leaders at all levels of the system (including teacher leaders) need to support the selected focus for improvement so that the resources of time, personnel, and energy are targeted on that focal point.

SUMMARY

This introduction is intended as an overview of a systemic approach to district and school improvement that holds an increase in student learning as its ultimate goal. The approach is not another quick fix that addresses only a single aspect of the educational system. Rather, it provides a process for promoting a culture of continuous inquiry, networking, and collaboration, as well as structures and leadership roles that support and sustain both student and staff learning. The Working Systemically approach serves as the foundation for the systemic improvement process detailed in *Getting Serious About the System*. This guide is designed to introduce the process to teachers and other stakeholders to help them gain a basic understanding of the process and to provide an indication of what it will require on the part of district and school leaders, the entire staff, and all stakeholders to achieve this goal.