

The Many Faces of Systemic Change

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Peter Senge's book *The Fifth Discipline* describes systemic thinking as the most important of five disciplines that define a learning organization.¹ Since the appearance of that book in 1990, it seems we have heard and read more and more about systemic change in education. Yet as we have looked closely at these various communications, we have found that different people use the term "systemic change" to communicate very different ideas about education and to advocate very different approaches to improving education. Because this has led to confusion and misinterpretation, this article explores the different meanings of the term "systems," describes the resulting approaches to improving education, and offers suggestions for avoiding the confusion and misunderstandings that attend much current communication on the topic.²

Definitions of Systemic Change

We have encountered four major meanings for "systemic change" in education, which we refer to as statewide, districtwide, schoolwide, and ecological systemic change. The ways that different reformers conceive of systemic change depend largely on their conceptions of what constitutes an educational system, and communication among educators is greatly impeded when they use the same term with different definitions. This section discusses these four conceptions.

Statewide Policy Systemic Change

Marshall Smith and Jennifer O'Day popularized the use of the term "systemic change" to mean statewide changes that are coordinated to support one another.³ In particular, these authors advocate that statewide tests, curricular guidelines, teacher-certification requirements, textbook adoptions, funding policies, and other statewide policies, mandates, and regulations be formulated to be consistent with one another. Thus, by integrating policy in those areas into a more consistent plan, statewide reformers hope

to improve the entire educational system, implying that the statewide body of educational policy is the system that drives change on the local level. Other authors to use this definition of systemic change include Robert Floden and Margaret Goertz in their 1995 *Kappan* article, "Capacity Building in Systemic Reform," and Susan Fuhrman in her edited work *Designing Coherent Educational Policy*.⁴

By advocating more coherent statewide goals and policies, authors such as Smith and O'Day focus on changes in educational governance. They maintain that by working on policy issues at the state level, one can create the supports necessary for local restructuring. Specifically, the governance process will become more decentralized, less bureaucratic, and increasingly based at the school level. Smith and O'Day advocate a decentralized state system in which local schools have greater control over defining goals and allocating resources. In this vision of systemic change, the state-level and district-level agencies play supportive roles for local school buildings.

Next, we will see how other groups hold very different conceptions of what a system is, with important ramifications for what systemic change means and how systemic change is instituted.

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Districtwide Systemic Change

Another use of the term systemic change in education is what we call districtwide systemic change. Districtwide system reformers conceptualize an educational system as a particular school district. Phillip Schlechty's *Schools for the Twenty-First Century* typifies this conception of the school district as the educational system.⁵ In this work, Schlechty describes how school districts often lack coherent vision and purpose, adequate supports for leadership, and effective evaluation mechanisms. To institute systemic change means to create "change mechanisms," specifically leadership, within the school district.

If the educational system is conceptualized as a school district, the key stakeholders become "the players" in the school district: administrators, teachers, teachers associations, staff, parents, and community members. Unlike conceptions of systems as statewide, districtwide conceptions of systems also consider the many support systems that fulfill the functions of schools. Transportation, food, extracurricular activities, and accounting are all examples of components of the districtwide system.

In the districtwide conception of a system, systemic change is any program implemented throughout the district. Examples of districtwide systemic change include adopting a whole-language approach in grades K-12, implementing a new technology program that includes Internet connections in every building, and using a bilingual approach to language education throughout the district's schools. These types of changes are thought of as systemic in that they occur throughout the system, and are not limited to a particular classroom or school. Districtwide reformers believe that it is not enough to implement a program in one classroom or in one grade; changes are systemic when they occur throughout the school district.

Schoolwide Systemic Change

The school building represents a third definition of what constitutes an educational system. Ted Sizer's Coalition of Essential Schools focuses on schoolwide systemic change, as do charter schools. Many other reform efforts have focused on the building level, such as that of the Saturn School of Tomorrow.⁶ From this perspective, a systemic change is change instituted schoolwide. Systemic change is tackled within the building

only. Typically, schoolwide systemic change might be thought of as school restructuring, whereby schools may change to block scheduling, move to multi-age classrooms, or change assessment procedures, usually instituting many reforms in concert with one another.

A team of concerned teachers and building administrators usually constitutes the key stakeholders in a schoolwide change, although students, parents, district officials, and outside experts are often brought in as well. Typically, it is this small group of change advocates whose voices lead the change process with an agreed-upon set of reforms or ideas, as in the case of the Coalition of Essential Schools, in which a group of teachers often gathers with a desire to join the coalition.

In the process of restructuring, most schoolwide systemic reforms also encourage a deeper (re)thinking of the purposes of schooling and the goals of education. Indeed, the Coalition of Essential Schools is held together by a common commitment to some fundamental beliefs about what education should be like.⁷ Schools sharing these beliefs elect to join the coalition on an individual basis. Although the coalition focuses on individual schools, it does engage in some activities that indicate a broader conception of systemic change. For example, it works with some colleges to accept portfolios and waive test scores, and the Re:Learning Program works with state-level policymakers to institute state-level supports for building-level efforts. Nevertheless, schoolwide systemic change is the focus of these efforts, and it is a widely held conception of systemic change.

Ecological Systemic Change

Educators with ecological conceptions of educational systems have yet a fourth conception. Authors taking this approach include Bela Banathy in his analysis of educational systems and systems design;⁸ Frank Betts in his description of systems thinking in education;⁹ Art Costa and Rosemarie Liebmann in their edited series calling for "process centered schools";¹⁰ Michael Fullan and Matthew Miles in their discussion of educational reforms;¹¹ Richard P. McAdams in his argument for systemic reform of education;¹² Marvin Wideen, Jolie Mayer-Smith, and Barbara Moon in their case for using ecological perspectives in educational inquiry;¹³ James J. Gibson's description of learners as ecosystems;¹⁴ and

Charles Reigeluth in his rationale and guidelines for systemic change in education.¹⁵ In this perspective, ecological systems, such as natural ecosystems and biological systems, are sometimes used as metaphors for understanding educational systems.¹⁶

To the ecological systems thinker, the educational system encompasses statewide policy, local school districts, and individual schools; an educational system is a complex social system that can be defined in a number of ways and can be understood only by being viewed from multiple perspectives.¹⁷ Ecological systems thinkers conceptualize human activity systems much as one would ecosystems. Just as an ecologist looks at a particular animal within the context of a whole forest, an ecological systems thinker examines a teacher-student relationship within the context of a classroom, which in turn is viewed within the context of a school, which is a part of a district system, which in turn is a part of a state educational system, and so on. Each is also viewed in relation to the broader community, state, country, and society in which it is located. An ecological systems thinker proceeds with an eye to the relationships between any given system and its superordinate, coordinate, and subordinate systems, for those relationships strongly influence the success of any change effort.

Ecological systems thinkers also believe that a system can be understood only by viewing it from multiple perspectives. If one is to understand a wetland community, one needs to understand all the environmental factors, inputs and outputs, that relate to global processes, the organisms in the community, and the key biological, life-cycle, and geochemical processes occurring in the community. Ecological systems thinkers in education advocate a similar process to understanding educational systems. Banathy recommends using three "lenses" to view an educational system: a bird's-eye lens, a functions-structure lens, and a process lens.¹⁸ The bird's-eye lens provides an overall picture of the system, enabling the observer to understand its relationships with its environment and the context in which it operates. The functions-structure lens enables one to understand the purposes and components of any system and the relationships they enter into with each other. Finally, the process lens allows one to develop a better understanding of how a system's purposes are attained and how its components

operate—in essence, how the system behaves over time.

This multi-faceted approach to defining a system is very different from statewide, districtwide, or schoolwide approaches to defining a system. For example, to take an ecological systems approach to understanding a state educational system, one would need to understand the different cultural values of the system stakeholders, the social and economic climate in which the state exists (the system's environment), and the important subsystems. "What environment does this system exist in?"; "What purposes does this state see the educational system serving?"; "What are the social and class relations in this state?"; and "What kinds of jobs are needed in the future in this state?" are but a few of the issues that are addressed in this process.

Using the bird's-eye lens entails understanding the relationships between a system and its environment, which includes related suprasystems and peer systems.¹⁹ Suprasystems are larger systems of which the system under analysis is a part, and peer systems are systems subordinate to the same system. Just as a forest is a suprasystem for a tree, the national educational system and the statewide policy system are two suprasystems of which any district system is a part. The state teachers associations, the state department of education, and the state association for district boards of education are all systems that are peers with each other, just as an oak tree is a peer to a maple tree in a forest.

Included in the relationships between a system and its environment are all the inputs available to the system and the outputs expected from and produced by the system. These are also identified through the bird's-eye lens. For example, for statewide educational systems, we need to understand what types of outputs they are expected to generate (democratic citizens, social and economic balance, curriculum guidelines, standards, student test scores?) and what types of inputs are available (community resources, financial resources, human resources?). The goal of this extensive process is to gain a holistic view of the system, to gain a deep affinity with the full range of a system's external relationships.

Mapping out a system's environment is a difficult endeavor, and complex systems, such as educational systems, have many important relationships with other systems, all of which may influence the success of a change effort. Thus, it

is common for ecological systems thinkers to involve multiple perspectives and a variety of stakeholders in the change process.

Lens two, the functions-structure lens, enables one to understand the goals of a system, the key functions that are used to attain those goals, and the specific subsystems (or components) that are used to carry out those functions. Ecological systemic thinkers also try to understand all the interrelationships that exist among those functions and subsystems, so that they can better understand how changes in one of them will likely be supported or impeded by each of the others. In our forest example, cutting down a tree that provides shade will cause alterations in plant and animal life along the forest floor. Ecological system thinkers in education believe that it is also important to identify such interdependencies in educational systems.

Ecological systems thinkers realize that what one thinks a system's purposes are depends largely on the perspective from which one views a system. As designed human systems, educational systems serve many goals, such as the preparation of a citizenry capable of participating in a democracy, the emotional and spiritual development of students, and the development of students' basic skills. Ecological systems thinkers advocate inquiry into the full range of purposes and goals of a system, valuing a diversity of perspectives over any particular interpretation of a system. Returning to the forest example, one cannot fully understand the purposes of a swamp through the eyes of a frog; only by actively seeking a diversity of perspectives can a system be understood. As a result, ecological system thinkers typically advocate ensuring that all voices are a part of defining a system, including those voices that traditionally have been marginalized.²⁰

... [D]ifferences in the change process are not trivial.

How stakeholders are brought into the change process, how the vision for change is developed, and who directs a change effort all have important ramifications for the outcomes of the effort.

Ecologists understand that any organism affected by an ecological community is to some degree a member of that community. Similarly,

ecological system thinkers believe that a broad understanding of what parts constitute an educational system (the system's components) is necessary. School districts, for example, have many subsystems that are often overlooked by educational reformers, including the custodial system, the transportation system, the clerical and record-keeping system, and the food-service system. Ecological systemic reformers realize that overlooking any of these subsystems can be deadly to a change process. The many purposes of systems need to be considered, and the existing subsystems and their interrelationships and interdependencies need to be understood clearly for a fundamental change effort to have any chance of success.

Last, lens three, the process lens, allows one to understand how these functions are carried out through time. To understand a school system, one needs to understand how it carries out its many functions, including the instructional process, the funding process, the assessment process, administrative processes, custodial processes, and professional development processes. Other, less formalized processes can be equally important and are essential to understand as well. How do system members learn about their environment? How do teachers communicate with parents? How does the school communicate with community members and business leaders? These questions are all indicators of processes that are important for educational systems to perform, and an understanding of them and their interrelationships is essential to the success of any fundamental change effort.

Ecological systems thinkers share with statewide policy systemic reformers an interest in aligning statewide policy, and, like districtwide reformers, they appreciate the unique nature of any educational system. However, ecological systems thinkers differ from these other perspectives in that they view an educational system as having a wider variety of complex interrelationships—with its environment and suprasystems, with its peer systems, and within itself among its various subsystems. And these reformers believe that an understanding of these interrelationships is essential for designing successful educational changes.

Approaches to Systemic Change

The differences in how groups conceptualize systems and systemic change lead to different approaches to achieving systemic change. These

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