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. 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.

Definitions of Systemic Change

We have encountered four major meanings for “systemic change” in education, which we refer to as statewide, district-wide, school-wide, 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. 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*.

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. 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. 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. 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; Frank Betts in his description of systems thinking in education; Art Costa and Rosemarie Liebmann in their edited series calling for “process centered schools”; Michael Fullan and Matthew Miles in their discussion of educational reforms; Richard P. McAdams in his argument for systemic reform of education; Marvin Wiseden, Jolie Mayer-Smith, and Barbara Moon in their case for using ecological perspectives in educational inquiry; James J. Gibson’s description of learners as ecosystems; 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

\[\text{[D]ifferences in the change process are not trivial.}\]

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 recordkeeping 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 supersystems, 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
differences 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. In this section, we explore the characteristics of each major approach to change, highlighting the important similarities and differences among approaches.

**Statewide Policy Approaches to Systemic Change**

For statewide policy systemic change advocates, the essence of systemic reform lies in modifying state policies, so that they are more internally consistent. Typical reforms include integrating and coordinating statewide tests, curriculum guidelines, teacher-certification requirements, textbook adoptions, funding policies, and so forth. These reforms might be legislation, curricular reforms, or statewide mandates designed to foster better alignment among these components and to promote promising educational initiatives. Usually, a fairly small set of people representing a relatively narrow portion of educational interests is involved in this legislative process. Legislatures, task forces, teachers unions, and administrators have forceful voices in the change process, while students, parents, community members, and the disenfranchised tend to have small or nonexistent voices.

Recognizing the need for teacher involvement in the change process, some statewide systemic reformers do work with teachers on the local level. In “Capacity Building in Systemic Reform,” Floden, Goertz, and O’Day describe their work developing teachers’ capacity for systemic change. They argue that in order to teach in new ways, teachers need not only training in new teaching techniques, but also opportunities to grow as people. Teachers need to change the way they see students, learning, and ultimately, themselves. Observing that traditional professional development workshops fall far short of inspiring this kind of deep, intense growth, Floden, Goertz and O’Day provide a series of useful guidelines on how systemic reformers can build teachers’ capacity for systemic change by using teacher networks, alternative assessment strategies, and agencies that coordinate these efforts.

This approach to educational reform, sometimes referred to as expert-driven reform, involves experts at the state level informing system members on how educational systems should operate. Teachers, administrators, and students do not have much voice in the goal-setting or decision-making processes; rather, they are expected to adopt the policies generated by the statewide systemic reformers. With a strong tradition in educational policy, statewide reformers tend to focus much more heavily on change outcomes than on managing the change process at a local level. Usually, change management is limited to the formation of an agency designed to support teachers in the change process.

The leadership-driven nature of districtwide systemic changes often limits variety of perspectives.

**Districtwide Approaches to Systemic Change**

Conceptualizing the local school district as the educational “system” has important implications for what constitutes systemic change and how systemic change occurs. In districtwide approaches, systemic reform typically involves setting districtwide goals and developing curricular programs to meet those goals. Of those advocating districtwide systemic change, perhaps Philip Schlechty has developed the most comprehensive vision of how the change process might best occur.

A districtwide reform effort is usually initiated by a small, concerned group of administrators or teachers within the district. Because most school districts are hierarchical, the administration usually plays a prominent role in leading the change process, defining who is involved in the change process and what kinds of changes will be made. Building needs can begin to play a greater role in driving the change process as principals and teachers become involved. However, the leadership-driven nature of districtwide systemic changes often limits the variety of perspectives that are brought into the change process.

Most often, the change effort will initially involve key administrative officials, who take a strong leadership role in the change process. Typically, they provide a vision for the change effort and establish its goals and criteria for success. Next, people who are needed to support the change are brought into the process. Schlechty describes this as a form of marketing. Usually, teachers are among the first to be
Schoolwide Systemic Change

Schoolwide approaches to systemic change are similar to districtwide systemic change efforts. They’re focused on instituting change throughout a building. The principal, key school leaders, and other teachers play central roles in driving the change process. In some charter schools, coalition schools, and other school change efforts (see e.g., the Saturn School of Tomorrow), students have more of a voice and play important roles in the change process. Nevertheless, the typical process of implementing a change can be seen as one of marketing a change to other stakeholders.

The Coalition of Essential Schools offers its schools very little guidance in how to manage the change process. The coalition hopes that each school will find the process that is appropriate for that school. The coalition does offer workshops for school change agents and leaders, summer retreats for groups involved in change efforts, and resources for coalition schools. However, these resources and supports are geared more toward generating energy and enthusiasm for the change efforts than toward offering guidance on the process of change.

Ecological Approaches to Systemic Change

Ecological systemic thinkers view systems as complex, multi-dimensional organizations whose various components have powerful relationships with other components, both within and outside the system of interest. Therefore, they advocate a comprehensive approach to systemic change, one that considers the redesign of all aspects of the system, holding nothing as beyond consideration for change. An ecological systemic change effort could focus on a school, district, or statewide system, but the intention is to change not only the “system-in-focus,” but also the related suprasystems and peer systems in ways that support the changes in the system-in-focus. Ecological systemic change agents believe that the key to real, lasting change lies not in any particular program, but in the changes in stakeholders’ mindsets that arise from continuing dialogue and self-examination.

Ecological systemic change agents value broad-based, democratic participation in the change process. From an ethical point of view, most ecological systemic thinkers believe that all those impacted by a system should be involved in
deciding what that system should be like. Given the variety of purposes that educational systems serve, involving all system stakeholders is critical, albeit difficult. Furthermore, given the complexity of an educational system, it is important to include people with a variety of perspectives, experiences, and understandings of the educational system. Therefore, ecological systemic reformers include a much broader range of stakeholders in the change process compared to the other types of systemic reformers. Stakeholder groups involved in the design process range from students, teachers, administrators, and support staff to community leaders, parents, and employers.

This broad involvement of stakeholders is often called the user-designer approach. In this approach, process experts are typically brought in to support the design process, as facilitators who help user-designers refine and develop their vision of the new system. In other words, experts are brought in to support the design process, but not to shape the product of design. Some ecological systemic thinkers have offered visions of what an educational system might be like, but they do so in the spirit of helping the stakeholders to think “outside the box” by offering possible visions of educational systems, not to dictate what a particular system should be like. This user-designer approach contrasts with the expert approach, which tends to characterize the other three conceptions of systemic change. Ecological processes involve stakeholders from the beginning of the change process to help design the changes, rather than bringing them in for compliance or “buy-in” late in the process (if at all). Therefore, the change process is driven from all directions in the system, not purely from the top down or bottom up.

Among those with ecological conceptions of educational systems, there are at least three approaches to the change process: design, evolutionary change, and a hybrid of the two. Additional approaches and variations of these approaches are also possible.

The design approach

The design approach, which has been articulated by Bela Banathy in *The Systems Design of Education*, and by Patrick Jenlink, Charles Reigeluth, Allison Carr, and Laurie Nelson in *Guidelines for Facilitating Systemic Change in School Districts*, is one in which stakeholders of the existing system plan and develop a new, ideal system while they are still in the old, functioning system. Once the design of the new system has been articulated fully, the system stakeholders “jump over” to the new system, with the option of both systems operating in parallel for a number of years as, gradually, more and more teachers and parents opt for the new system and “retooling” costs are spread out over time. This approach can also be used to design a new system where none already exists.

The conversation represents a new form of democratic process that replaces voting as a decision-making process.

The design process begins with a visioning phase in which all stakeholders come to a shared vision of what an ideal system would be like for their community. This lengthy process is the heart of systems design. If system stakeholders can come to a shared vision, the rest of the process is relatively straightforward. Because people enter this design “conversation” with different values and beliefs about education, ecological system thinkers see the first stage of this design process as chiefly one of discourse toward reaching shared understandings about the purpose and nature of education. It is important that all members of the conversation try to understand why others hold the beliefs they do. In so doing, they open the door to arriving collectively at a deeper understanding and a set of shared beliefs about education that are superior to those held by any one person at the outset of the process.

The conversation represents a new form of democratic process that replaces voting as a decision-making process. In voting, we use our current, limited perspectives and understandings to make decisions about education. In contrast, the conversation is a knowledge-building and consensus-building process that deepens our understanding of complex issues and helps us to evolve our thinking toward shared beliefs and vision. With our current mindsets about education predicated on an outdated factory model of education, it is a real challenge to free our minds to imagine new possibilities for our local educational system. And facing this challenge is a key function of the visioning phase of systems design.

Once a shared “fuzzy” vision for the system has been created, the design team begins a series
of recursive design cycles whereby it gradually creates progressively more detailed, realized descriptions of the initial vision. Throughout this design process, team members continuously share and refine the system design according to stakeholders’ beliefs and needs. The cyclical idealized design process continues until the design plan is rich enough to be tested.

In contrast to other systemic approaches, the design phase takes considerably more time and energy, with the implementation phase being more straightforward. Involving all stakeholder groups and thoroughly articulating a vision of a complete system is a lengthy process, demanding a large amount of time, resources, and energy. The assumption is that the most important outcome of any fundamental change process must be a change in the stakeholders’ mindsets and beliefs about education. Without changes in the users’ mindsets, no fundamental change is likely to succeed. As stakeholders share their beliefs and values about education, their thinking evolves and enough shared vision and ownership are achieved for implementation to be a much easier process. Good systems design also incorporates into the new system’s regular processes the capacity to continue to evolve as the educational needs of its community evolve.

The evolutionary change approach

In contrast to the design approach to ecological systemic change, an evolutionary change approach presupposes that systemic change is so nonlinear, complex, chaotic, and multi-faceted that to “orchestrate the coherence of a system” deliberately is unfeasible. Evolutionary design might be thought of as design for the foreseeable future, in the sense that one plans as far as one can see, such that the plans (designs) are continuously extended in an evolutionary way.

In “Turning Systemic Thinking on Its Head,” Michael Fullan explores this kind of alternative approach to facilitating ecological systemic change. He argues that systemic reformers ought to focus on how changes typically occur in organizations. He sees this naturally occurring change process as fundamentally evolutionary. To Fullan, the greatest potential for systemic change lies in creating change support networks and evolving notions of teaching and learning through reculturing and restructuring the educational system. Support networks include multi-level staff development projects, the integration of state policies (much like that advocated by statewide systemic change groups), and a focus on assessment and evaluation. Reculturing is “the process of developing new values, beliefs and norms,” and restructuring is the development of “roles, structures, and mechanisms that enable new cultures to thrive.”

A hybrid approach

A third approach to ecological systemic change is essentially a hybrid of the two approaches just described. In Opportunity Initiated Systemic Design (OISD), systems identify and use change opportunities that naturally occur within the system as the catalyst for systemic change. The OISD approach, which is still in early stages of development, attempts to retain many of the essential characteristics of systems design: a commitment to idealized design, full stakeholder participation, and an orientation toward the systemic change of peer systems. But OISD also allows for a less-daunting design process by capitalizing on “small wins” and positive feedback loops. A relatively small group of system stakeholders initiates the design process, making the consensus-building process easier, but also potentially limiting the depth at which the design group comes to understand the system.

Much like Banathy’s idealized system design model, in OISD, system stakeholders conduct a “three lens” analysis of the current system and develop an idealized model of the system. Stakeholders then develop opportunities that can exploit potential energy for change, as identified in the analysis stage. Unlike more traditional approaches to reform, OISD change activities are designed explicitly to affect multiple components of the system and multiple peer systems. It is hoped that as the opportunity grows, it will affect multiple levels of the system. Thus, the system will evolve toward an idealized system. As the opportunity spreads throughout the system, it is hoped that it too will evolve, to greater reflect the values and vision of everyone involved in the system.

The three approaches to ecological change that we have described attempt to foster change by combining “top-down” and “bottom-up” approaches to systemic change. Ecological systemic change both restructures and recultures the system at hand, and should also spur change in related systems. An important part of ecological systemic thinking is the notion that not only are educational systems connected, but they also
are inextricably linked to political, economic, and environmental systems on local, regional, national, and global levels. By combining structural reforms with grassroots changes in beliefs about learning and education, it is hoped that lasting, fundamental change might occur, making an impact beyond the walls of any one classroom.

Conclusion

We began this article by highlighting the confusion engendered by different meanings of "systemic change." Subsequently, we discussed four distinct conceptions of systemic change: statewide, districtwide, schoolwide, and ecological. Statewide reformers focus on synchronizing and integrating the components of state policy systems and providing support agencies for schools. Districtwide change agents view their school district as the educational system and focus on developing leadership and implementing changes throughout the district. Similarly, schoolwide systemic change agents think of the system as the school and tackle systemic reform at the building level. Ecological systemic reformers see educational systems as complex, multi-level entities, and they advocate a comprehensive, user-designer approach, emphasizing the many purposes and functions of educational systems.

These four conceptions share a common value for the interrelatedness of educational components and functions, but they clearly hold different values about educational change. The statewide and districtwide change approaches outlined here tend to value expert opinion in the change process, involving a relatively narrow group of stakeholders. Schoolwide systemic change agents tend to value school autonomy in undergoing change, placing relatively little value on facilitating the change process. Ecological systemic reformers value broad, meaningful participation in the change process (user-designer approach), eschewing expertise. They place tremendous value on the change process itself—the inquiry process into the nature of a system and the discussion among stakeholders of the values and purposes of education—over any particular educational agenda. Far from trivial, these differences can result in much confusion as educators communicate about systemic change efforts.

It is hoped that this article will add to work being done to define the landscape of systemic change. To avoid confusion in future communications, we recommend always using a qualifier—such as statewide, districtwide, schoolwide, or ecological—to clarify which conception of systemic change is intended. Too often, educators have confused these conceptions, leading to miscommunication and misunderstandings among the various systemic change advocates and critics. Furthermore, whenever a conception has several approaches to change, as is the case for ecological systemic change, we recommend that the nature of the favored approach be clearly communicated. Avoiding miscommunication should help us to make better decisions about whether or not to pursue systemic change and, if so, which type of systemic change to pursue. This in turn should help us to be more effective in improving our educational systems and better meeting the needs of our children and our communities.

Notes


19. For a good discussion of systems terminology, see Betts, "How Systems Thinking Applies," 38–41.


22. Schlechty, *Schools for the Twenty-First Century*.

23. Ibid.

24. Ibid., 105.

25. Ibid.

26. Ibid., 106.

27. Bennett and King, "The Saturn School," 41-44.

28. To see what lesson might be learned from the coalition schools' experience in change efforts, see Donna E. Muncey and Patrick J. McQuillan, "Preliminary Findings from a Five-Year Study of the Coalition of Essential Schools," *Phi Delta Kappan* (February 1993): 97-100.

29. Ibid.


36. Ibid., 420-423.

37. Ibid., 422.


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