Charlie,
Thank you so much for contributing to this book. The chapter you provided add a lot of value.
8/30/10

Dream! Create! Sustain!

Mastering the Art and Science of Transforming School Systems

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Systemic Transformation in Public School Systems

Kurt B. Richter and Charles M. Reigeluth

OVERVIEW

This chapter is based on the literature review for Kurt Richter's doctoral dissertation at Indiana University. His study examined selected elements of a whole-system transformation journey for the Metropolitan School District of Decatur Township, Indiana, where he served (and continues to serve) as part of a team of facilitators from Indiana University led by Dr. Charles Reigeluth to facilitate the transformation of that school district. The district's transformation journey was originally guided by Dr. Reigeluth's *Guidance System for Transforming Education (GSTE)*. Currently, the district is using a hybrid transformation methodology created by blending Dr. Reigeluth's GSTE method with Duffy's *Step-Up-To-Excellence* method. This new hybrid methodology is called the *School System Transformation (SST) Protocol* and it is described in chapter 12.

Dr. Richter's study sought to improve some of the process guidelines described in the GSTE by using a qualitative research methodology described as formative research (Reigeluth & Frick, 1999). This methodology asked

This chapter is based on Dr. Richter's review of the literature for his doctoral dissertation titled "Integration of a decision-making process and a learning process in a newly formed leadership team for systemic transformation of a school district." The chapter first appeared as Richter, K. B., & Reigeluth, C. M. (2007). Systemic transformation in public school systems. *The F. M. Duffy Reports, 12*(4),1–21. Questions about the dissertation research should be directed to Dr. Richter at kurichte@indiana.edu. Questions about the transformation of the Decatur Township school district should be directed to Dr. Reigeluth at reigelut@indiana.edu. Used with permission.

what worked well, what did not work as well as it could have, and what could be done to improve the process.

Specifically, Richter examined the application of the GSTE in the middle stages of the systemic transformation process with a leadership team of twenty to twenty-five stakeholders in the transforming school district. That district has 5,954 students in a semiurban, Midwestern setting. Richter, working as a cofacilitator in the systemic transformation process, studied the processes of team learning and of decision making while creating a *framework of vision, mission, and beliefs* to guide the school district's transformation effort. His dissertation reported the results of that qualitative research.

SYSTEMIC TRANSFORMATION IN PUBLIC SCHOOL SYSTEMS

There is a strong need for systemic change in public school systems in the United States. This article discusses why such a strong need exists, what alternative approaches can be used to foster systemic change, and what models currently exist to guide the most promising approach to systemic change.

Changes in Society Make the Current System Obsolete

As the United States evolves deeper into the Information Age, our society's needs and problems are changing dramatically. During the Industrial Age, most jobs were manual labor. Now, the majority of jobs require knowledge work. During the Industrial Age, a comfortable middle-class life was possible without much education, whereas in this age of global competition and digital technologies, considerably higher levels of education are needed to have a comfortable life. Workplace skills required to do entry-level jobs, identified by the U.S. Department of Labor's Secretary's Commission on Achieving Necessary Skills (SCANS), include the following skills that fall into three domains:

- "Basic skills: reading, writing, speaking, listening, and knowing arithmetic and mathematical concepts;
- Thinking skills: reasoning, making decisions, thinking creatively, solving problems, seeing things in the mind's eye, and knowing how to learn; and
- Personal qualities: responsibility, self-esteem, sociability, self-management, integrity, and honesty" (Whetzel, 1992, p. 1).

As we evolve deeper into the Information Age, societal systems, jobs, and even personal lives are becoming more complex. The Information Age is developing increasingly powerful computer-based tools for dealing with such complexity, but according to Spiro (2006), these "post-Gutenberg" technologies require the development of a different style of thinking, through "prefigurative schemas" (schemas for the development of schemas), which requires dramatic changes in both the goals and means of education.

The typical response in school districts to this growing educational crisis is piecemeal, "fix-the-broken-part" approach to change. A reading program does not work well, so remediation is offered. Falling test scores are evident, so yearly statewide testing for everyone is introduced. Rising rates of obesity result in the removal of soda machines from schools. These changes are made by schools to adjust to immediate challenges that arise during the normal course of schooling.

What is seldom recognized is that dramatic changes in educational needs require changes in the fundamental structure and organization of school systems. Reigeluth talks persuasively about the need to rethink what Schlechty calls "rules, roles, and relationships" for the ways we use "time, talent, and technology" (Reigeluth, 1997a, p. 205) in school districts. For example, regarding time, it is known that different students learn at different rates (Mayer, 1999), yet we require all students to learn the same amount of content in the same amount of time. By holding time constant, we force achievement to vary. Our current educational system was designed for sorting students more than for learning, which was appropriate in the Industrial Age, because we did not need to, and could not afford to, educate large numbers of students to high levels. But the Information Age, with its predominance of knowledge work and global competition, has dramatically changed that, making learning a much higher priority than sorting.

In the Information Age paradigm, it is no longer satisfactory to promote learners to the next level simply because they have spent a year in the previous level. It is no longer acceptable to emulate the factory model and to teach all children at the same rate. In the Information Age paradigm we need to educate more children to their potential. Faster learners must no longer be forced to waste time until the class is ready to move on, and slow learners must no longer be forced to move on before they have mastered the content, condemning them to accumulate learning deficits that make it even more difficult to learn material that builds on that content.

Time must become flexible and customized to each learner's needs. Imagine schools without class periods and grade levels. This change in the use of time would require fundamental changes in the use of talent (teachers and students) and technology (Schlechty, 2002). It would require fundamental changes from standardization to customization, from control to empowerment, from compliance to initiative, and from uniformity to diversity (Reigeluth, 1999).

KEY MARKERS OF INDUSTRIAL AGE AND INFORMATION AGE COMPARED

Coevolution is a system evolving in harmony with its environment. Modern-day society has evolved from the Agrarian Age, in which agricultural activities formed the backbone of society, to the Industrial Age, in which the assembly line and mass production created products and goods for consumption by the public, and most recently, to the Information Age, in which knowledge work has replaced manual labor as the predominant form of work. Key markers of the Industrial Age compared to the Information Age are listed in table 10.1.

As can be seen in table 10.1, the key markers of the Information Age are descriptors of a paradigm that puts emphasis on the team over the bureaucracy, on autonomy over control and command, and on initiative over compliance. At every level of the educational system, the needs of society now require different criteria for success, criteria that correspond closely with the Information Age key markers. To be relevant and meet the needs of society and its members, education must seek to evolve in ways that express the fulfillment of Information Age needs and expectations.

What Is Systemic Change?

In the evolving discipline of systemic change in educational transformation, there is little agreement as to the meaning and concept of the term "systemic change." It often seems as though the term systemic change is used to describe "almost any large scale project" (Carr-Chellman, 1999, p. 369). If one examines the programs making up the reform efforts included in the New

Table 10.1. Key Markers of the Industrial Age and the Information Age

Industrial Age	Information Age
Standardization	Customization
Bureaucratic organization	Team-based organization
Centralized control	Autonomy with accountability
Adversarial relationships	Cooperative relationships
Autocratic decision making	Shared decision making
Compliance	Initiative
Conformity	Diversity
One-way communications	Networking
Compartmentalization	Holism
Parts oriented	Process oriented
Planned obsolescence	Total quality
CEO or boss as "king"	Customer as "king"

Source: Reigeluth, 1999, p. 17. Used with permission.

American Schools Development Corporation (Stringfield, Ross, & Smith, 1996), this is often the case. Here, programs as diverse as "The Modern Red Schoolhouse," "Roots and Wings: Universal Excellence in Elementary Education," and "Los Angeles Learning Centers: An Initiative of Los Angeles Unified School District, United Teachers Los Angeles" are all described by Stringfield and colleagues (1996) as systemic efforts. Upon closer inspection, these programs are actually adopted by clients for the purpose of initiating school-based improvement without transformational paradigm change. The programs provide a structure which can be adopted and implemented, to which teachers and students must adapt without substantial alteration of the existing paradigm. They all share the quality of being systematic, but they demonstrate widely varying definitions of systemic change.

To clarify and focus the definition of systemic change, we first describe what systemic change is not, followed by a working definition of what it is. Systemic change is not piecemeal change. If only one element in a system is changed, no matter where in that system the element resides, it is still piecemeal change. The key indicator of systemic change is paradigm change (Reigeluth, 1999), which means that a significant change in one part of the system is accompanied by significant changes in practically all other parts, due to interrelationships and interdependence among parts.

Banathy (1991) addresses piecemeal change in school districts when he describes how the Carnegie Corporation "labeled the existing system an outdated assembly line and made fifty-eight specific nonintegrated proposals to 'radically transform' schools" (p. 11). He describes most of the improvement techniques that have been used as ineffective because they fail to

> recognize the complexity of current issues surrounding education and [they] have not grappled with the essential nature of education as a societal system; a system interacting with other societal systems, a system which is embedded in the rapidly and dynamically changing larger society. (p. 12)

Systemic change must encompass a broad scope and be large in scale within the system of interest. A fundamental change in curriculum would not constitute systemic change in a school district. Such a change could affect individual classrooms in all schools in the district, but because other elements in the system's structure have not changed, the effect on the greater system would not be systemic, but piecemeal. To become a systemic change, there would have to be changes throughout all aspects of the system related to the new curriculum. Piecemeal changes can "produce the appearance of change but not much real improvement in outcomes" (Harman, 1984, p. 3).

Squire and Reigeluth (2000) discuss four types of systemic change, which they refer to as statewide, district-wide, schoolwide, and ecological systemic change. They have found that a user's conception of systemic change de-

pends on their experience and the type of system with which he or she is familiar. Ecological systemic change matches the definition for systemic change used in this article.

Ecological systemic change is an approach that requires an understanding of a school district as a system. This approach encompasses and contains the relationships among all stakeholders: community members, parents, school and district staff, students, teachers, principals, administrators, and state-level education personnel. These multiple stakeholders are included and embraced at the earliest stages of the transformation effort and are involved in democratic participation in the change process. Experts may be brought into the process as support, but their main job is to act as support in the process and "not to shape the product of design" (Squire & Reigeluth, 2000, p. 6).

Changes in mind-sets, which are "mental positions or outlooks from which people approach problems" (La Piana Associates, 2006), are critical to systemic change. Such mind-set change is brought about through dialogue, or the process by which a group "becomes open to the flow of a larger intelligence" (Senge, 1990, p. 239) and self-examination. Mind-set change is absolutely required for creating and sustaining transformational change.

The definition of systemic change used in this article—one that is compatible with the concept of ecological systemic change—is described by Jenlink, Reigeluth, Carr, and Nelson (1998). They define systemic change as an approach that:

- recognizes the interrelationships and interdependencies among the parts of the educational system, with the consequence that desired changes in one part of the system must be accompanied by changes in other parts that are necessary to support those desired changes; and
- recognizes the interrelationships and interdependencies between the educational system and its community, including parents, employers, social service agencies, religious organizations and much more, with the consequence that all those stakeholders are given active ownership over the change effort (p. 219).

APPROACHES TO SYSTEMIC CHANGE

External Design versus Internal Design

There are two approaches available to school districts that decide to engage in systemic change: (1) implement a standard design that was invented elsewhere, or (2) engage in a process that helps their stakeholders design their own new system. The first approach—standard designs that are invented elsewhere—is typified by efforts such as the school designs of the New American Schools Development Corporation. These kinds of efforts are not truly systemic, but are combinations of piecemeal changes that have been applied in a systematic manner. Such shortsighted efforts have led to minimal educational returns in places like Washington, DC, and Memphis, Tennessee (Mirel, 2001; Pogrow, 2000a, 2000b, 2002). Chief complaints about externally designed efforts include teacher and union resistance, a general feeling of dissatisfaction, and isolation.

Other examples of the expert design are found in such programs as Roots and Wings (Slavin, Madden, & Wasik, 1996), The Modern Red Schoolhouse (Heady & Kilgore, 1996), Success for All (Hurley, Chamberlain, Slavin, & Madden, 2001; Pogrow, 2000a, 2000b, 2002), the Expeditionary Learning Outward Bound Design (Goldberg, Richards, & BBN Corporation, 1996), and others.

The expert design strategy fails to address specific needs of most school districts. Experience tells us that this externally designed approach to change is ineffective and, over time, often detrimental.

In the internal design approach, the focus is on a process that helps participants learn and work together and stimulate each other to evolve their individual and collective mind-sets about education. From the consensus-building process, values that govern the change process emerge and drive the process forward. From these process values, approaches to instruction and education emerge that are used to guide the design of the new paradigm of education. As long as stakeholders develop ownership of the process and are willing to engage in mind-set change, the internal process is far more likely to yield a positive and long-lasting change in the fundamental structure of schooling in a district.

Instead of selecting an externally designed product for implementation, schools can choose to engage in an internal design process. The internal design approach relies heavily on the user-designer model. For a successful user-design to emerge, many people from all stakeholder groups must become a part of the process. As they engage in the process, stakeholders come to consensus on values, the mission of education, and beliefs that support the culture of education. Through the design process, stakeholders come to understand the real needs of the school system and learn how to work together to address those needs. Well-facilitated engagement in the process by all users will eventually result in a user-designed plan for systemic change.

The internal design process is done neither quickly nor easily. First, it requires that representatives from every stakeholder group served by the school district meet in a leadership team over an extended period of time. Members on the leadership team must include district and school administrators, the teachers' union(s), district and school staff, and parents meeting in an atmosphere of equality and consensus building.

Second, because of the need to find common ground in an Information Age environment, all stakeholders must be open to evolving their thinking (mind-set change) about education, often considered to be one of the most difficult tasks that they will face.

Third, the traditional model of top-down leadership must be abandoned in favor of a developmental leadership model that shares responsibility and develops leadership among all stakeholders.

Finally, systemic change occurs most realistically and effectively when approached as a process of engagement that entails a long-term commitment for improving the system of interest. With these elements in place, stakeholders are ready to engage in the internal design process approach to systemic change.

Given these general characteristics, the following is a review of the current knowledge about the internal design process.

OVERVIEW OF INTERNAL DESIGN MODELS

Step-Up-To-Excellence

Step-Up-To-Excellence (SUTE) (Duffy, 2006, p. 3) was developed as a response to the needs of change leaders as they attempt to seek ways in which entire school systems can be transformed. It is described as a "whole-system transformation protocol especially constructed to help educators navigate the three paths toward whole-district transformation" (Duffy, 2006, p. 3). In this summary of SUTE, we first summarize the three paths that occur at each of the levels. We discuss the personnel and groups who are charged with initiating, implementing, and maintaining change. We then discuss the conferences that occur among each group participating in each step of the process. We conclude with a description of each of the steps in the SUTE Change Protocol.

There are three sets of organizational variables that require concurrent improvement if a whole school system is to be transformed. Within the context of SUTE these sets are called change paths, and they recur at every level of a school system throughout SUTE.

Path 1: Transform a district's core and support work processes. The core work of contemporary school districts is accomplished within a "sequenced instructional program conjoined with classroom teaching and learning" (Duffy, 2006, p. 3). Core work is supported by two kinds of support work: Academic support that includes those in administrative, supervisory, and curriculum development positions and nonacademic support that includes transportation, cafeteria, and janitorial positions, as well as others in similar positions. All work processes must be improved for systemic transformation to be successful.

Path 2: Transform a district's internal social infrastructure. Variables along this path include "organization culture, organization design, communication patterns, power and political dynamics, reward systems, and so on" (Duffy, 2006, p. 4).

Path 3: Transform a district's relationship with its external environment. Change leaders must ensure that relationships between key external stakeholders in the community and the school system are strong before engaging in a systemic transformation, and then these relationships must be maintained throughout the transformation journey.

Change Leadership within SUTE

The individual responsible for initiating transformational change in a school district is a superintendent in collaboration with a small team of colleagues. The superintendent forms a prelaunch team to prepare the system for transformation. Later in the process, a Strategic Leadership Team is formed that includes educators from each level of the school system. A change navigation coordinator is also appointed or hired to provide tactical leadership for the transformation. Various change leadership teams are also formed—one for each cluster of schools in the district, one for the central administration office, and one for a cluster of nonacademic supporting work units (e.g., cafeteria services, transportation services, and building and grounds maintenance services). As the SUTE process continues, Site Improvement Teams are also formed for each school building and nonacademic supporting work unit. All of these teams make up a change management structure for the district.

The Structure of SUTE

SUTE is organized using a prelaunch preparation phase and three steps. Each one is briefly described below.

Prelaunch Preparation. Prior to launching a transformation journey, the readiness of the district to participate in transformational change is assessed by the superintendent of schools and the small prelaunch team. During this phase, an abbreviated environmental scan is conducted to identify threats that face the district and opportunities that can be seized if they engage in transformational change. Additional internal assessments are made to determine the district's readiness to participate in transformational change.

Additional considerations that determine readiness to proceed are described by Sirkin, Keenan, and Jackson (in Duffy, 2006, p. 10) as the "hard factors of change" (Duffy, 2006, p. 10):

- Duration: the amount of time needed to complete the transformation initiative

- Integrity: the ability of the change leadership teams to complete the transformation activities as planned and on time; which is directly affected by the team members' knowledge and skills for leading a transformation journey
- Commitment: the level of unequivocal support for the transformation demonstrated by senior leadership as well as by employees
- Effort: the amount of effort above and beyond normal work activities that is needed to complete the transformation (p. 10)

At some point early in the prelaunch phase of SUTE, the prelaunch team will make a "launch/don't launch" decision. If the decision is to launch a transformation journey for the district, then a new leadership team is formed and trained. That team is called a Strategic Leadership Team. This team is composed of the superintendent, one or two of his or her immediate subordinates, and school-based administrators and teachers from each level of schooling in a district. It might also include a school board member, a teacher union representative, parents, and students.

The school-based members of this team are not selected by the superintendent; instead, they are appointed to the team by their peers in the schools. This appointment process prevents the impression that the Strategic Leadership Team was handpicked by the superintendent.

Transformational change requires leadership from all quarters of a school district. Distributed leadership will only be as effective as the people who provide this leadership. Leadership for transformational change should also be in the hands of people who are allies in the change process. Allies are trusted colleagues who are in high agreement with the transformation goals.

One individual is chosen to coordinate the efforts of the Strategic Leadership Team, and that individual is known as the change navigation coordinator (Duffy, 2006, p. 9). Ideally, this coordinator should be an assistant or associate superintendent. This person will probably need training to become a master of transformational change. In large districts, the coordinator may form a change leadership team that will collaborate with him or her to lead their district's transformation journey.

The Strategic Leadership Team oversees the work of the change navigation coordinator and his or her change leadership team. The coordinator starts to create a change management structure to support the transformation journey. This structure requires that the district be organized into academic clusters, a central administration cluster, and a nonacademic support work cluster.

The academic clusters contain individual school buildings and classrooms. To conform to principles of systemic change, the academic clusters must contain the entire instructional program of the district; for example, in a district that is organized P–12th grade, the academic clusters will contain a high school and all the middle and elementary schools that feed into

it. This is very important because of a systemic change principle called "upstream errors flow downstream." This means that errors made early in the teaching and learning process, if they are not identified and corrected, will flow downstream and cause significant problems downstream in the instructional program; for example, if students accumulate early learning deficits as they progress through their district's instructional program, their "downstream" learning will become progressively more difficult, and ultimately they will experience increasing levels of academic failure.

Another principle of systemic change is that the central administration office must be transformed into a central service center that serves educators and support staff working in the district. To facilitate this transformation, the central administration office is conceived of as a cluster that will undergo transformational change.

Nonacademic support work includes cafeteria services, transportation services, and building and grounds maintenance services. These support services must be transformed, too; for example, the New York City school system transformed its cafeteria services by hiring an executive chef from the private sector who created brand new food selections for all the schools in the system.

Another element of the change management structure that is created to implement SUTE is the formation of "scouting parties." These small groups of educators from the district will start looking for really great ideas that might be used to transform their district; for example, they might seek out school systems that provide customized, personalized education to students.

Also, the change navigation coordinator and his or her team start looking for sources of money to fund their transformation journey. They don't request the money right now, because they have no idea how much they will need, but they need to identify where they can submit their requests later on in the SUTE process.

Near the end of the prelaunch phase, two important conferences are organized and conducted. The first is called a Community Engagement Conference. This one-to-three day conference is designed to invite hundreds of community members into one room, where they will then self-organize into discussion groups to talk about their dreams, expectations, and concerns for their school district. Notes are taken at each discussion table and submitted to secretarial staff who enter them into a word processing program. These data from external stakeholders are used later to plan the district's transformation.

The next conference that is conducted is for the faculty and staff working in the district. It is called a System Engagement Conference. The System Engagement Conference is designed using principles of Future Search as described in Schweitz, Martens, and Aronson (2005), or principles of search conferencing as described by Merrelyn Emery (2006). Either set of design principles will work for this conference.

One of the key principles for designing this conference is that the whole system must be in the room. What this means is that at least one person from every school and every support work unit must be invited to participate. The purpose of this one-to-three day event is to create a new "fuzzy" vision for the district, as well as a new strategic framework that reflects the district and community's core beliefs and values. Data from the Community Engagement Conference are carefully considered during this conference.

One outcome of the System Engagement Conference is a strategic framework for the district that includes new mission and vision statements and a strategic framework for guiding the transformation of the school system. Following the System Engagement Conference, the Strategic Leadership Team and change navigation coordinator organize the district into clusters: academic, central office, and nonacademic support work units. Each cluster is led by a Cluster Design Team that engages in training designed to develop and enhance their knowledge and skills for leading transformational change.

The conclusion of the System Engagement Conference marks the beginning of a design process that will lead to proposals to transform the district's academic clusters, central administration office, and support work units. The design work happens in Step 1: Redesign the Entire School District.

Step 1: Redesign the entire school district. During the prelaunch phase, the district was organized into three kinds of clusters: academic, central office, and nonacademic support work units. Step 1 begins with one of the academic clusters.

The first academic cluster creates a Cluster Improvement Team to guide their cluster's transformation journey. The change navigation coordinator works closely with this team. The Cluster Improvement Team then creates school-based improvement teams for each school in the cluster. These teams are called Site Improvement Teams.

The Cluster Improvement Team, with help from the change navigation coordinator, plans and conducts a Cluster Engagement Conference. All educators from all the schools in the cluster are invited to participate in this conference. Parents and other community members may also be invited to this conference. The purpose of this conference is to determine how the cluster and the schools can be designed to support the district's new vision and strategic framework.

Following the Cluster Engagement Conference, Site Improvement Teams are formed for each school in the cluster. Each Site Improvement Team then engages in highly structured Redesign Workshops that will lead them through a process to identify how they can transform their individual schools to align with their cluster's improvement goals and with the district's vision and strategic framework. The redesign workshops ask educators to create ideas to (1) improve their relationship with the external environment, (2) improve their core work processes, and (3) improve their internal social infrastructure. It is the responsibility of the members of the Site Improvement Teams to work on making progress along the three change paths mentioned above. The primary outcome of the redesign workshops are proposals "for transforming each cluster and every school within each cluster" (Duffy, 2006, p. 10).

As plans are made and support requirements begin to change, the responsibility for engaging in the redesign process moves to the central office and nonacademic supporting work units. They, too, engage in a Cluster Engagement Conference and Redesign Workshops to transform their environmental relationships, work processes, and internal social infrastructure.

During phase 1, as the change proposals are developed and organized into a master proposal to transform the entire district, the Strategic Leadership Team and change navigation coordinator are charged with the task of finding money to support the proposed changes. Initially, the effort can seek money from grants by public or private entities and foundations, but in the long run, it is necessary to reallocate district money to support the ongoing redesign efforts.

As the change proposals are implemented, On-Track Seminars enable participants to engage in formative evaluation to ensure that the transformation work continues to adhere to district vision and goals. The seminars also:

- facilitate individual, team, and district-wide learning;
- educate and train faculty and staff to use inquiry skills;
- create opportunities to model collaboration, cooperation, and participation behaviors;
- establish linkages between learning and performance;
- facilitate the search for ways to create greater understanding of what affects the district's success and failure; and
- rely on diverse perspectives to develop understanding of the district's performance (Duffy, 2006, p. 12).

Step 2: Create strategic alignment. In step 2, individuals work to align their work with the goals of teams, the work of teams with the goals of schools, the work of schools with the goals of their clusters, and the work of the clusters with the new mission, vision, and strategic framework of the district.

Step 3: Evaluate whole-district performance. In previous steps, formative evaluation is conducted to keep the transformation journey on course toward desirable vision for the district. In this step, summative evaluation is conducted to "measure the success of everyone's efforts to educate children with the framework of the newly transformed school system" (Duffy, 2006, p. 13).

Though step 3 measures success, it is not the end of the cycle, because the district must recycle the change process to the prelaunch preparation

phase. This is an essential characteristic of SUTE because it is built on the philosophy that transformation is not an event—it is a journey that spirals a district continuously upwards toward higher and higher levels of performance. Achieving high performance is a lifelong journey for a school district.

Schlechty's Process

Phillip Schlechty has written extensively on school reform since the late 1960s. Many of his ideas are summarized in *Schools for the 21st Century: Leadership Imperatives for Educational Reform* (Schlechty, 1990). He discusses qualities that schools must have if they are to be prepared for the increasing expectations in the new century. The work of the school is knowledge work, defined as "putting to use ideas and symbols to produce some purposeful result" (Schlechty, 1990, p. 35), and it emphasizes mental effort. Schools engage in knowledge work and must engage in reform if they are to remain relevant as an institution (Schlechty, 1997).

Schlechty (2002) discusses the importance of the kind of work that is provided to students in the course of instruction. In contrast to manual work, which involves the completion of physical tasks, knowledge work emphasizes "management and control of symbols, propositions, and other forms of knowledge; and the use of these intellectual products in the achievement of goals" (Schlechty, 2002, p. xv). Schoolwork should consist of knowledge work that promotes the intellectual and moral development of the student. This supportive framework is called "Working on the Work" (WOW). The main features of Schlechty's WOW framework (Schlechty, 2002, p. xviii) are:

1. One of the most important responsibilities for teachers is to provide students with information to learn. Schlechty calls that information "work."
2. A second responsibility of teachers is help students succeed in learning what they need to learn.
3. Therefore, Schlechty concludes that teachers are leaders and inventors and students are volunteers who volunteer their attention and commitment.
4. Differences in student commitment and attention produce differences in the degree to which a student is engaged in learning what must be learned.
5. Differences in the level and type of engagement affect the amount of effort a student expends on learning-related tasks.
6. The level of effort applied to learning tasks affects learning outcomes at least as much as intellectual ability.

7. According to Schlechty, the level and type of student engagement will vary depending on how teachers design and deliver learning activities and information.
8. Therefore, Schlechty reaches the conclusion that teachers can directly affect student learning by designing learning activities that have those qualities that are most engaging to students.

Schlechty's WOW framework addresses the types of work that must be done to "improve student performance in school" (Schlechty, 2002, p. xiv), but this most recent work is part of a larger body of work that provides process knowledge about how schools should proceed to enact systemic change. Also discussed by Schlechty (1997) are the powerful values and assumptions that should be used in any redesign or systemic change effort. Schlechty's work explores the importance of leadership and clear vision by saying that "ideas begin with individual women and men: they do not begin with groups" (Schlechty, 1990, p. 60).

Effective leaders begin by working with educators and educational personnel at every level in the schools to create a clear vision that extends to all members of the system through "participatory leadership" (Schlechty, 1990, p. 60). Once that vision has been created, it must be marketed to those who will be affected by it. A distinction is made between a sales approach, in which those who offer the product (change) try to overcome resistance to the product, and the market approach, in which the "needs and values of those whose support is essential" (Schlechty, 1990, p. 64) are met.

For implementation of changes, Schlechty lists five functions that require fulfillment: (1) Intellectual leaders must emerge and be able to conceptualize the idea and the structure of the change effort; (2) Those who will be involved in the change must be recruited and informed of the nature of plans for change; (3) Feedback about the change must be solicited from those who will be called upon to support the change; (4) Implementation activities must be implemented; and (5) Ongoing support and training must be made available to all concerned. Schlechty (1990) refers to these functions "as the conceptualizing function, the marketing function, the developmental function, the implementation function, and the service and support function" (p. 98), respectively.

Systemic change requires strong transformational leadership as a guiding force. Schlechty describes such a leader in the superintendent. Qualities of the superintendent include being a nonauthoritarian leader who believes in participatory leadership. The superintendent is seen not as a democratic leader but as one who is "strong enough to trust others with his or her fate, just as he or she expects their trust in return (Reigeluth & Frick, 1999).

THE GUIDANCE SYSTEM FOR TRANSFORMING EDUCATION (GSTE)

The GSTE is a set of guidelines for facilitating systemic change in school districts (Jenlink, Reigeluth, Carr, & Nelson, 1998). The guidelines offered by the GSTE outline an internal-design process approach to systemic educational change that relies upon the premise that real systemic change can only occur if the demand for change is supported by all who are affected by the change. Because of the increased involvement of community stakeholders, the GSTE appears to have greater potential for successful implementation than most other models. The GSTE provides flexible and detailed process guidelines to a facilitator who chooses to engage in a district-wide systemic change effort. The following description of the GSTE is based upon *Guidelines for Facilitating Systemic Change in School Districts* (Jenlink, Reigeluth, Carr, & Nelson, 1998).

The GSTE is divided into three parts: guiding beliefs, discrete events, and continuous events. Jenlink et al. describe twenty-two guiding beliefs and values that are proposed as being important to a successful systemic change effort. These beliefs guide the actions of the facilitator and stakeholders, for the values should be incorporated in each of the discrete and continuous events that will occur in the course of the change process as noted in table 10.2.

The discrete events of the Guidance System for Transforming Education (GSTE) are organized into five phases, each of which contains specific activities and steps.

Phase I: Assess readiness and negotiate an agreement. During this phase, the outside facilitator(s) first assess their readiness and interest in becoming a facilitator of a systemic change effort. Next, the facilitators must either contact a school district or engage in discussions about the parameters of such a change effort. Then the facilitators engage with the district to determine the

Table 10.2. Guiding Beliefs and Implied Values in the Guidance System for Transforming Education

Caring for children and their future	Systemic thinking
Inclusivity	Stakeholder ownership
Coevolution	Facilitator
Process orientation	Context
Time	Space
Participant commitment	Respect
Responsibility	Readiness
Collaboration	Community
Vision	Wholeness
Language	Conversation
Democracy	Culture

Source: Jenlink, Reigeluth, Carr, & Nelson, 1998. Adapted with permission.

readiness for change. This phase culminates in a formal agreement that is signed between the governing body (the school board) and the change team that specifies the nature of the change process. Finally, in this stage the facilitators must assess the district's ability, or "capacity for change" (Jenlink, Reigeluth, Carr, & Nelson, 1998, p. 225). The four distinct events in this phase are shown in table 10.3.

Phase II: Prepare a core team for the change process. A small core team of five to seven individuals is created and charged with the responsibility to explore and evaluate the current system with respect to systemic change. The newly formed team must generate a team culture and dynamic in which systemic change is carried out. The facilitators must help the core team to develop skills and understandings in systems design and group process. In event eight of this phase, the core team utilizes their knowledge of systems design to redesign and customize the next three events and to tailor them to meet the specific needs of the district. Event nine asks the core team to identify any other change events that might compete for time or resources. In event ten, they evaluate the openness to change within the district and community. In event eleven, the "existing beliefs, assumptions, and mindsets about educational change" (Jenlink, Reigeluth, Carr, & Nelson, 1998, p. 226) are evaluated. This phase ends with event twelve, in which the core team redesigns the process in events ten through fifteen as they prepare to expand into a Decisioning Team and a Design Support Team. The eight distinct events in this phase are shown in table 10.4.

Phase III: Prepare expanded teams for the process. The core team is responsible for preparing to expand into the Decisioning Team and the Design Support Team. These two groups work interactively. In event thirteen, the core team expands into a team of approximately twenty members, including representative members from every stakeholder group. Event fourteen can be done either before or after event fifteen and consists of building

Table 10.3. Distinct Events in Phase I: Assess Readiness and Capacity

1. Assess and enhance your readiness to be a facilitator. Prepare the facilitator for facilitating the change effort through self-assessment.
2. Establish or redefine your relationship with a school district and then make site visits to determine whether or not to proceed on the basis of the district's readiness for change. This step helps to identify a school district with which to work.
3. Assess the district's readiness for change and negotiate a formal agreement. This event involves assessing the district's readiness for systemic change by looking at documents and interviewing key people. A decision is made whether or not to enter into a formal relationship at this stage.
4. Assess the district's capacity for change. Facilitator meets with stakeholders within the district and identifies existing and lacking capacities for systemic change.

Source: Jenlink, Reigeluth, Carr, & Nelson, 1998.

Table 10.4. Distinct Events in Phase II: Prepare the Initial Core Team

5. Select the participants for the core team. Key district leaders should assist you in selecting the types of people who should be included on the core team. This selection is announced publicly and should help to create public awareness of the event.
6. Create the core team dynamic. The core team attends a two-day retreat. They work together to develop a team culture, teaming skills and group knowledge. This becomes an experience base to design team-building experiences for newly developed teams later in the process.
7. Train the initial core team in systems design. Included in this training is systems theory, practice, and systems design. Emphasis is on deep understanding and appreciation for user-designer approach to systems design.
8. Design events 9–11. Events 9–11 are just-in-time activities requiring core team selection and redesign.
9. Identify competing change efforts. The core team identifies change efforts in the district that are currently under way that may compete for time or resources
10. Evaluate openness to change. In addition to evaluating the district's openness to change, the core team must also identify why the district is open or closed to change.
11. Evaluate the existing culture for change. The core team must evaluate the existing beliefs, assumptions, and mind-sets about educational change. This involves fostering an understanding of what a culture of change is along with understanding the language of change.
12. Redesign events ten through fifteen. This consists of designing the steps that will be used to expand the core team into a Decisioning Team (twenty to twenty-five people) and a Design Team (eight to twelve people) whose jobs include making the decisions that will affect the changed system or to design the new educational system. The order in which these two events occur determines whether event thirteen or fourteen will come next.

Source: Jenlink, Reigeluth, Carr, & Nelson, 1998.

the Design Support Team, a group that includes five members from the original Decisioning Team and an additional five members. Event fifteen provides for training the Design Support Team "with respect to applications of the systems theory, systems practice, and various model of systems design" (Jenlink, Reigeluth, Carr, & Nelson, 1998, p. 228). As in phase II, event sixteen asks the participants to redesign events seventeen through twenty-four in preparation for the next phase. The four distinct events in this phase are shown in table 10.5.

Phase IV: Engage in design of the new educational system. With the groundwork for change laid, the community is now engaged in the design process. Event seventeen asks participants to identify their own mind-set and to understand "how mind-sets contribute to our perceptions of education (Jenlink, Reigeluth, Carr, & Nelson, 1998, p. 229). Event eighteen asks participants to explore idealized beliefs and assumptions about education to help participants create a foundation for expectations about coming steps in the design process. Event nineteen gives the Design Support Team guidance in implementing the "self-selection of small design teams based on individuals' beliefs within the framework of the district-wide beliefs" (Jenlink, Reigeluth, Carr, & Nelson, 1998, p. 229). In event twenty, the facilitator works with Design Support Team members "in the process of reaching consensus on the particular beliefs about learning and education that they would like their school to reflect with the framework of the district-wide beliefs" (Jenlink, Reigeluth, Carr, & Nelson, 1998, p. 229).

Table 10.5. Distinct Events in Phase III: Prepare the Expanded Teams

13. Expand and build the Decisioning Team. The core team expands to approximately twenty members broadly representing all stakeholder groups. This event includes a two-day retreat similar to that used to build the core team, with the responsibility of identifying personality profiles and identifying common beliefs (event 6).
14. Select and build the Design Support Team. If done after event 10, five members of the Decisioning Team spin off to serve on the Design Team as well. These five form the nucleus of approximately ten people. They must foster understanding of the role of the Design Team in the systemic change effort. They must plan a two-day retreat similar to that described in event 10, with similar expectations for planning the mode of operation.
15. Train and enculturate the Design Support Team. Facilitation of additional training for the Design Team with respect to applications of systems theory and practice, and various models of systems design are learned in event 14 (see event 7). Explore alternative views and approaches to the change process.
16. Redesign the change process. The Design Support Team redesigns its own design process using what was learned in event 15 and what is provided in the guidebook for events 17–24. Foster understanding of evaluation as an important part of learning within the systemic change effort.

Source: Jenlink, Reigeluth, Carr, & Nelson, 1998.

In event twenty-one, Design Support Team members develop a system for evaluating the results of the change process. In event twenty-two, the Design Support Team designs a system of functions to enable it to attain its vision of a new educational system. In event twenty-three, the components for accomplishing the functions identified in event twenty-two are designed. Finally, in event twenty-four, all design teams join together to design both sitewide and district-wide "administrative and governance systems" (Jenlink, Reigeluth, Carr, & Nelson, 1998, p. 230). These eight distinct events in this phase are shown in table 10.6.

Phase V: Implement and evolve the new system. Ideal designs having been generated and approved, the community develops and uses an implementation process to transition into the new system in event twenty-five. In event twenty-six, the process is implemented, evaluated, and revised while implemented, along with implementation, evaluation, and revision of the new system as it evolves. The two distinct events in this phase are shown in table 10.7.

Table 10.6. Distinct Events in Phase IV: Design a New System

17. Evolve mind-sets about education. The facilitator must foster an understanding of what mind-sets are and how they contribute to our perceptions of education. You must help the Design and Decisioning Teams clarify the basis of their mind-sets and to move beyond their current mind-sets.
18. Explore ideal beliefs and assumptions about education. The facilitator must assist the Design and Decisioning Teams to develop a core set of ideal beliefs and assumptions about education that they want to see throughout the new system. This new system must incorporate an understanding of and appreciation for ideal design.
19. Select and build multiple design teams. The facilitator assists the Design Team to plan and implement the self-selection of small design teams based on individuals' beliefs within the framework of districtwide beliefs. Each new team engages in a two-day retreat at which they work on team building and development of appropriate skills and knowledge (see event 14). Results of prior evaluations are shared with the teams and they determine their own mode of operations and communication with the districtwide Design Team.
20. Explore ideal visions based on the common beliefs. The facilitator assists and cofacilitates the districtwide Design Team members to facilitate each design team in the process of reaching consensus on learning and education. This consensus, along with an ideal vision based on common beliefs and assumptions, will be incorporated into the new "school" design that they will create. Further, this vision shall incorporate an instructional system to support these kinds of learning experiences. The importance of ideal visions and the place they play in bringing about systemic change through stakeholder participation is key to creating commitment to the ideal vision.
21. Develop a system for evaluating the results of the change process. The facilitator will assist the districtwide Design Team members to help each Design Team to develop an evaluation system for its design. This evaluation system will reflect the development of an understanding of the role of critical examination, reflection, positive feedback systems, and self-renewal in the evaluation process. All stakeholders must have clear agreement as to that which is important to evaluate and what is not important to evaluate.
22. Design a system of functions for each ideal vision. Each design team now identifies and designs a set of functions that will enable it to attain its vision of a new educational system. The districtwide Design Team members facilitate an understanding of a function, and guide the design team members into increasingly specific and detailed levels of subfunctions.
23. Design the components for accomplishing each function. Every design team designs each necessary component to accomplish each function of the new system. The progression of vision to functions to components is a gradual process in which greater detail is continually developed.
24. Evolve, evaluate, and revise the new system. The process is implemented while engaging in evaluation and revision of the new system as it evolves. The system designed in event 21 can be used for this purpose. Explore new possibilities and problems of the design as it evolves.

Source: Jenlink, Reigeluth, Carr, & Nelson, 1998.

Table 10.7. Distinct Events in Phase V: Implement and Evolve the New System

25. Develop a process for evolving to the new system. Because it is likely many aspects of the ideal system will not be immediately attainable, each design team should determine how to evolve ever closer to the ideal over time. They should attempt to minimize incompatibilities between the early elements of the new system and the remaining elements of the old system.
26. Evolve, evaluate, and revise the new system. Through a constant process of evaluation and revision in the course of implementation, it is possible to evolve the new system even as it is being implemented. The object is to evolve closer to the idealized vision.

Source: Jenlink, Reigeluth, Carr, & Nelson, 1998.

Continuous Events

Finally, the GSTE outlines a series of eighteen continuous events that require attention throughout the course of the change effort. These address such things as sustaining the motivation of the various groups involved in the effort, building and maintaining trust within and among the different groups, and monitoring and dealing with various elements occurring in the environment that can affect the change effort. Attention to these issues is equal in importance to the other elements, but they must be constantly monitored and addressed throughout the change process. The eighteen continuous events are listed in table 10.8.

Since January 2001, the GSTE has been undergoing testing, refinement, and elaboration through field trial in the Indianapolis Metropolitan School District, and I was able to join the reform effort as a cofacilitator in 2003. In that field trial, it has become apparent that the development and activities of the Decisioning Team (which they called the Leadership Team) in phase III are particularly difficult yet crucial to the success of the systemic change effort.

A Decisioning Team is asked to engage in mind-set change that may challenge their notions of culture, education, and the purpose of schools. This kind of change is especially difficult since it may run contrary to the professional training and experience the individuals have received.

They are asked to engage in idealized design, explore ideal visions, and evaluate the results of the change process in which they are engaged. Finally, they are asked to implement these new visions and beliefs in a new educational system that will affect the lives of all who are so engaged. The Decisioning Team's actions and decisions, especially in the early stages of their formation, will greatly affect the remaining course of the change effort, and it is important both to describe these actions as well as their consequences, and to explore alternatives that might be offered in future implementations of the GSTE. Since the Decisioning Team needs to become effective in the shortest amount of time possible, there is a strong need for

Table 10.8. Continuous Events of the GSTE

1. Evaluate and improve the change process
2. Build and maintain political support
3. Sustain motivation
4. Develop and sustain appropriate leadership
5. Build and maintain trust
6. Evolve mind-set and culture
7. Periodically secure necessary resources
8. Develop skills in systems thinking
9. Periodically and appropriately allocate necessary resources
10. Develop group-process and team-building skills
11. Build team spirit
12. Engage in self-disclosure
13. Engage in reflection
14. Develop design skills
15. Communicate with stakeholders (two-way)
16. Build and evolve community
17. Foster organizational learning
18. Build an organizational memory

Source: Jenlink, Reigeluth, Carr, & Nelson, 1998.

improving the guidance for events twelve and eighteen by integrating the team's learning activities with their decision-making activities in such a way that the team is able to begin making important decisions sooner. The purpose of this article is to address this need.

CONCLUSION

This chapter discussed the challenge of transforming schooling in American school districts and compared different approaches to meeting this challenge. Improving schooling has been traditionally addressed using what is commonly called piecemeal change. Piecemeal change, unfortunately, has not lived up to its promises to improve teaching and learning for America's school-aged children.

In the shadow of piecemeal change, which often goes by the name "school-based improvement," another change paradigm lurks—the paradigm of systemic transformational change. As educators have observed and been frustrated by the failures of school-based reform, the systemic transformational change paradigm has begun to emerge from the shadows. Different approaches to systemic transformational change were analyzed in this article.

Creating and sustaining systemic transformational change in school districts requires four paradigm shifts (Duffy, 2007). Duffy identifies these shifts as:

- Paradigm Shift 1: Shift from a reactive stance in response to the environment to a proactive stance.
- Paradigm Shift 2: Shift from the Industrial Age paradigm of schooling to an Information Age paradigm, and include the supporting work processes in a school system within this shift.
- Paradigm Shift 3: Shift from a command and control organization design to a participatory organization design.
- Paradigm Shift 4: Shift from a piecemeal approach to change to a systemic transformational change approach.

Given these four required paradigm shifts, it is clear that systemic transformational change is complex. But complex does not mean impossible—it means there is a lot to think about and a lot to do. Fortunately, there are methodologies available for creating and sustaining systemic transformational change. One of the most promising methodologies is a hybrid created by blending Duffy's *Step-Up-To-Excellence* methodology with Reigeluth's *Guidance System for Transforming Education* methodology. This hybrid methodology is called the School System Transformation Protocol (which is presented in chapter 12).

Even with the availability of methodologies for creating and sustaining transformational change in school districts, supplanting the entrenched school-based improvement philosophy will not be easy. It will be difficult because

> when the rise of a new theory suggests a change of direction in scholarship, history attests to a common pattern of reaction among the established intellectual community. There is often flat dismissal or at best vehement attack in order to kill and bury the theory, especially if it signals an imminent as well as immanent possibility of shaking the secure and comfortable foundation upon which the existing paradigm of thinking rests. (Nagatomo & Hull in Yasuo, 1993, pp. ix–x)

Resistance to the idea of systemic transformational change is seen, for example, in how advocates of school-based improvement have adopted the language of systemic change to argue for the validity of their approach. A popular example of this adopted language is found in the phrase "a system of schools," which is then contrasted with disdain to the term "school system" (as in "a system of schools versus a school system"). The implication is that a "system of schools" focuses on improving individual school buildings, and the unstated assumption is that improving these pieces will ultimately improve the entire school system. However, we all know the old adage about "the whole is greater than the sum of its parts." A system is more than its individual parts. It seems that the "system of schools" advocates believe that "the whole is EQUAL to the sum of its parts."

Almost every aspect of our society has moved steadfastly into the Information Age. School districts need to make that journey too. And making that journey will require them to engage in systemic transformational change that helps them make four paradigmatic shifts, as noted above. Failure to make these shifts will result in school districts that are increasingly irrelevant in our society.

11

Learning Management Systems

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OVERVIEW

This chapter presents a detailed description of the powerful and necessary role which technology can play in the Information Age paradigm of education. This chapter calls for a learning management system (LMS), a comprehensive and integrated application of technology to the learning process, that will provide four primary roles for student learning: record-keeping, planning, instruction, and assessment. Each of these four major roles is described in terms of the functions it needs in order to support student learning. Finally, secondary roles such as communication and general data administration are described in order to illustrate the systemic nature of LMS technology necessary to fully support the learner-centered approach needed in the Information Age paradigm of education.

PARADIGM CHANGE IN PUBLIC EDUCATION

Sunkyung Lee Watson and Charles Reigeluth (2008) discussed the need for changing the paradigm of education from the sorting-focused, Industrial Age factory model of schools to the learning-focused, Information Age, customized paradigm. They also presented one possible vision of this new

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