



Systemic Change and Empirically-Supported Practices: The Implementation Problem

Diffusion of Innovations and Science-Based Practices to Address Barriers to Learning & Improve Schools:

A Series of Information Resources on Enabling System Change

As calls for addressing barriers to student learning and improving schools increase, new directions are imperative. And, this involves more than tinkering with prevailing approaches. The need is for developing major innovations (e.g., comprehensive school-level prototypes) and taking them to scale throughout a school district.

The success of all this depends on stakeholders in public education becoming more knowledgeable about the complexities and strategies related to diffusion of innovations, enabling major systemic changes, and developing a *sophisticated* understanding of the role of empirically-based practices.

To these ends, the Center is producing a series of resources, such as this one, to provide informational aids for use as tools in policy and practice analyses, research, education, and school improvement planning.

Early research on moving empirically-supported practices into common use has tended to analyze and approach the matter with too limited a procedural framework and with too little attention to context. This document highlights information that can help advance work on what is widely called the "implementation problem."

Specifically, we frame the process in terms of the *diffusion of innovations*. And, we stress that such diffusion is being carried out in *organized settings* that have well-established institutional cultures and infrastructures that must change if *effective* widespread application is to occur.

From this perspective, the implementation problem becomes one of diffusing innovation through major systemic change. It encompasses facilitating organizational changes that lead to effective adoption/adaptation of a prototype at a particular site and the added complexities of system-wide replication-to-scale.

System Change and Empirically-Supported Practices: The Implementation Problem

Good ideas and missionary zeal are sometimes enough to change the thinking of individuals; they are rarely, if ever, effective in changing complicated organizations (like the school) with traditions, dynamics, and goals of their own.

Seymour Sarason

There are many agenda items and issues that have been raised in discussing empirically-supported practices in psychology and education. One arena that has been a major concern but has not been well conceptualized is the “implementation problem.”

This arena has been described broadly as taking prototypes that are found efficacious under highly controlled conditions and moving them into the real world. Such a description, of course, does not convey the multifaceted and complex nature of the problem. And, as the National Implementation Research Network (NIRN) has stressed,

... very little is known about the processes required to effectively implement evidence-based programs on a national scale. Research to support the implementation activities that are being used is even scarcer. [For the NIRN literature synthesis, see Fixsen, Naoom, Blase, Friedman, & Wallace, 2005.]

Early research on the implementation problem has focused on concerns about and barriers to matters such as dissemination, readiness for and fidelity of implementation, generalizability, adaptation, sustainability, and replication to scale (Addis, 2002; Castro, Barrera, & Martinez, 2004; Elliot & Mihalic, 2004; Franklin, DeRubeis, & Westin, 2006; Hall, 2001; Herschell, McNeil & McNeil, 2004; Lau, 2006; Schoenwald, Henggeler, Brondino, & Rowland, 2000; Schoenwald & Hoagwood, 2001; Shirk, 2004; Spoth & Redmond, 2002; Stirman, Crits-Christoph, & DeRubeis, 2004; Weisz, Jensen, & McLeod, 2004).

All of these matters obviously are important.

However, the tendency has been to analyze and approach the implementation problem with too

limited a procedural framework and with too little attention to context. This has resulted in the tendency to skip by these two fundamental considerations that are at the core of moving empirically-supported practices into common use. The deficiencies become apparent when the implementation process is conceived in terms of the complexities of (1) *diffusing innovations* and (2) doing so in the context of *organized settings* with well-established institutional cultures and infrastructures that must change if *effective* widespread application is to take place.

So, our purpose here is to visit the implementation problem from the vantage point of the growing bodies of literature on diffusion of innovations and systemic change. As an increasing number of researchers are emphasizing, the work in these two overlapping arenas yields a broader and essential perspective for advancing research associated with moving empirically-supported practices into the real world (Ackoff, 1998; Adelman & Taylor, in press; Duffy, 2005; Greenhalgh, McFarlane, Bate, & Kyriakidou, 2004; Greenhalgh, et al., 2005; Lehman, Greener, & Simpson, 2002; Magnabosco, 2006; Pentz, 2004; Rogers, 2003; Rosenheck, 2001; Senge, 1999; Sherry, 2003).

From this perspective, the implementation problem needs to be framed as a process of diffusing innovation through major systemic change. This encompasses the complexities of facilitating systemic changes that lead to appropriate and effective adoption/adaptation of the prototype at a particular site and the added complexities of replication-to-scale.

Before elucidating on these matters, we need to say a bit about empirically-supported practices.

About Empirically-supported Practices

Empirically-supported *practices* are also referred to as evidence-based and science-based practices. The terms refer to any intervention that has been identified as having research data generated using methods that meet scientific standards and demonstrate a level of efficacy deemed worthy of application and evaluation of effectiveness on a large scale.

A subgroup of such practices, referred to as evidence-based *treatments*, focuses on differentially diagnosed illnesses and disorders. According to the American Psychological Association, the designation of evidence-based treatment should be reserved for those interventions that have been tested in more than one scientifically rigorous study (either multiple case studies or randomized control trials) and have consistently been found to work better than a placebo or no treatment. Most evidence-based treatments are applied using a manual and are time-limited.

An *empirically-supported* practice may or may not be a *best* practice. A best practice is one that decision makers view as sufficiently productive in achieving desired results. Determination of a best practice may or may not be informed by formal research. When there has been no formal research, the empirical support usually stems from the experience of professional practitioners who implement the practice.

Another Intervention – Where and How Does it Fit?

Most evidence-based practices are discrete interventions designed to meet specified needs. A few are complex sets of interventions intended to meet multifaceted needs, and these usually are referred to as programs. (For an annotated bibliography on implementation of evidence-based practices in children's mental health, see Barwick, Boydell, Stasiulis, Ferguson, Blase, & Fixsen, 2005.)

Viewed in isolation, empirically-supported interventions all can be seen as advancing practice. From a systemic and public health perspective, however, their introduction into an organization can add to the widespread problems of fragmented and marginalized approaches and

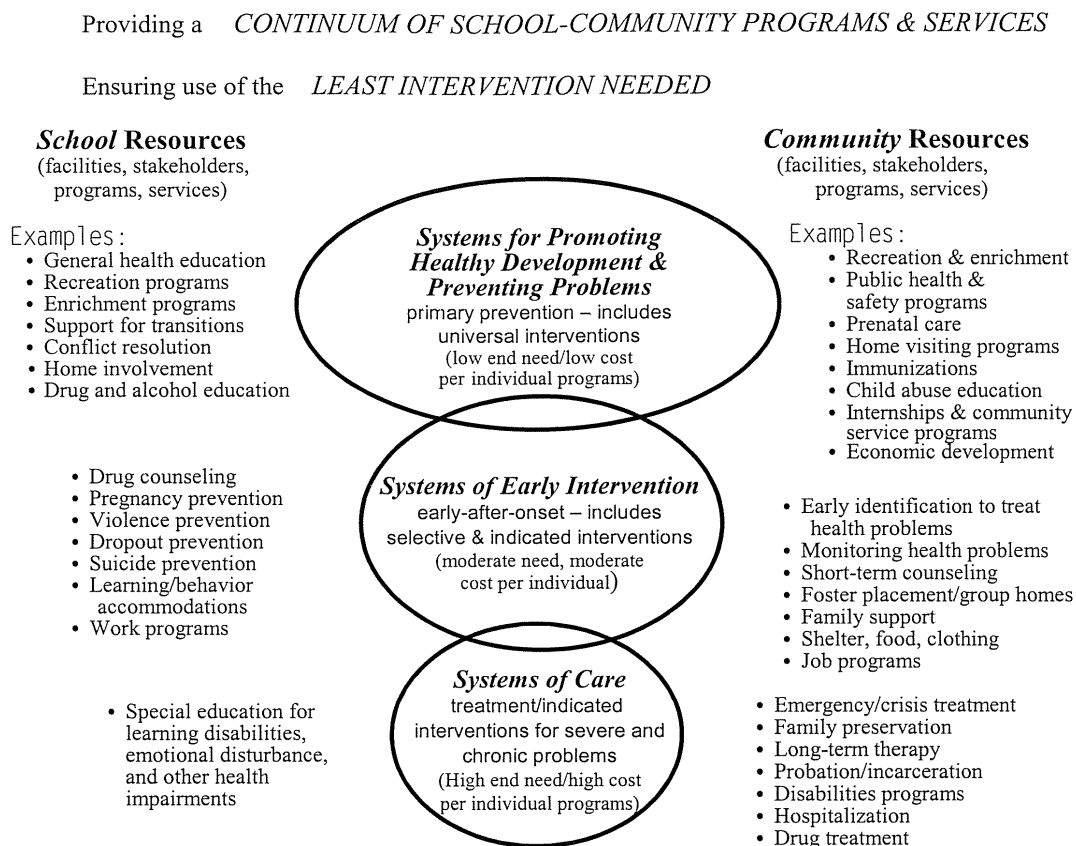
counterproductive competition for resources. Questions arise about where every newly proposed practice fits and how best to weave it into a comprehensive continuum of interventions.

With respect to children and adolescents, for example, most school districts offer a range of programs and services oriented to student needs and problems. Some are provided throughout a school district, others are carried out at or linked to targeted schools. Some are owned and operated by schools; some are from community agencies. The interventions may be for all students in a school, for those in specified grades, for those identified as "at risk," and/or for those in need of compensatory or special education (Adelman & Taylor, 2006a).

Looked at as a whole, a considerable amount of activity is taking place and substantial resources are being expended. However, it is widely recognized that the whole enterprise is marginalized in policy and practice. As a result, a major policy and practice consideration is how to braid school and community resources together to develop a comprehensive, multifaceted, and cohesive systemic approach for addressing barriers to learning and development (see Figure 1). Such a continuum encompasses efforts to enable academic, social, emotional, and physical development and address learning, behavior, and emotional problems at every school. As noted, most schools have some programs and services that fit along the entire continuum. However, the tendency to focus mostly on the most severe problems has skewed things so that too little is done to prevent and intervene early after the onset of a problem. As a result, the whole enterprise has been characterized as a "waiting for failure" approach.

By viewing programs, services, projects, and initiatives along a continuum of student needs, schools and communities are more likely to provide the right interventions for the right students at the right time (see Figure 1). Such a continuum encompasses efforts to positively affect a full spectrum of learning, physical,

Figure 1. **Interconnected Systems for Meeting the Needs of All Students**



Systemic collaboration is essential to establish interprogram connections on a daily basis and over time to ensure seamless intervention within each system and among *systems for promoting healthy development and preventing problems, systems of early intervention, and systems of care.*

Such collaboration involves horizontal and vertical restructuring of programs and services

- within jurisdictions, school districts, and community agencies (e.g., among departments, divisions, units, schools, clusters of schools)
- between jurisdictions, school and community agencies, public and private sectors; among schools; among community agencies

(From various public domain documents authored by H. S. Adelman and L. Taylor and circulated through the Center for Mental Health in Schools at UCLA. Adapted by permission.)

social-emotional, and behavioral problems in every school and community by

- C promoting healthy development and preventing problems
- C intervening as early after the onset of problems as is feasible
- C providing special assistance for severe and chronic problems.

As illustrated in Figure 1, note the emphasis on *systemic* design. That is, at each level effectiveness is seen as depending on development of a system – not just having an initiative or programs. Moreover, all levels need to be interconnected systemically.

This, then, illustrates the policy and practice context into which every newly proposed practice for children and adolescents must be fitted.

Other Concerns and Controversies

The ways in which “science-based” practices are reshaping public policy have raised a range of concerns and controversies. Few argue against the value of integrating the best available research with professional expertise – with due appreciation for consumer differences stemming from individual characteristics, culture, preferences, and so forth.

Concerns arise when decision makers use criteria that those with appropriate experience and expertise see as inadequate and inappropriate. A major concern is that the science-base for many practices has been developed under laboratory conditions, and this is no guarantee that it will produce the same outcomes when applied widely.

In effect, until researchers demonstrate that a prototype is effective under “real world” conditions, it is a promising not a proven practice. And, even then it must be determined whether it is a best practice.

Findings from laboratory studies are referred to as data on *efficacy*; findings from studies conducted under common conditions of daily practice are designated as data on *effectiveness*. In both instances, concern about generalizability arises when studies have not included samples representing major subgroups with whom the practice is to be used. Another major concern is that certain interventions increasingly are officially prescribed and others are proscribed by policy makers and funders, and only those practitioners who adhere to official lists are sanctioned and rewarded. This is a particular concern in sectors where individual needs come into conflict with powerful social, political, and economic forces.

In response to the various concerns and controversies, some researchers have suggested that the heated reactions they encounter from some practitioners represent mindless resistance. They often interpret the difficulty of achieving prototype fidelity in clinics and schools as the result of practitioner’s undermining the advance of science. It’s a truism that not everyone is ready for major changes in their lives. At the same time, not all concerns raised about proposed changes are simply resistance.

For example, the following matters are often heard in schools when efforts are made to introduce some evidence-based practices:

"I don't believe their 'evidence-based' intervention is better than what I do; they need to do the research on what I do before they claim theirs is better."

"That intervention is too narrow and specific to fit the problems I have to deal with."

"We wanted to use the grant money to enhance the work we already are doing, but we've been told we have to use it to buy evidence-based programs that we think don't really fit our needs."

"How do we know that if the school adopts this evidence-based program we will get the results they got in their research?"

"We have so many things we have to do now, when are we going to have time to learn these new practices?"

"They make it sound like I am doing bad things. Soon, they will be suggesting that we are incompetent and need to be fired."

"I've heard that some of the highly touted science-based programs have been found not to work well when they are tried throughout a school district."

"I'm not taking the risk of giving up what I believe works until they prove their laboratory model does better than me out here in the real world."

The same statement may be motivated by a desire not to change or by a deep commitment to the best interests of schools and the students and families they serve.

Controversies and concerns about what practices are appropriate and viable almost always are major contextual variables. And, as the following discussion highlights, their impact must be addressed in efforts to diffuse innovations, especially in settings that have well-established institutional cultures and organizational and operational infrastructures. Researchers need to avoid the blame-game and appreciate the complexities of diffusing innovations and making major systemic changes. From such a vantage point, the focus shifts from “I’m right and they’re wrong” to “What haven’t I done to promote readiness for change?”

Diffusion of Innovations

The topic of diffusion of innovation encompasses the topics of dissemination and utilization of knowledge and research, as well as knowledge transfer.

The terms *dissemination* and *diffusion* often are used interchangeably. Those seeking to influence action should carefully distinguish between these two processes. In doing so, *dissemination* can be defined as the process of distributing information in various forms (e.g., documents, materials) through various delivery mechanisms (e.g., presentations, email, websites). Dissemination may occur through formal or informal efforts. Dissemination alone, however, does not guarantee that recipients will do anything with what they receive. And, widespread dissemination does not increase the likelihood of this. Thus, while dissemination is a necessary precursor, it is insufficient with respect to facilitating learning and eventually mobilizing action. (Note that a related term, dispersion, sometimes is used to refer to the *degree* of dissemination; the term selective dissemination refers to the practice of maintaining control while disseminating.)

Diffusion is the process by which recipients are mobilized to learn and use what is disseminated. Diffusion can be either informal or formal. Formal diffusion incorporates basic intervention concepts (e.g., clear designation of who and what is involved; strategically matching motivation and capability). The focus of formal diffusion efforts may be on motivating and facilitating (a) acquisition of information and knowledge, (b) adoption/ adaptation of a specific innovation (e.g., a new practice, a new policy), or (c) pursuit of major reforms and transformative innovations requiring systemic changes.

Note that the complexity involved in *diffusion* is exacerbated by contextual variables. For example, neighborhoods, schools, agencies, etc. all are *organized settings* with well-established institutional cultures and infrastructures that usually must be accounted for and which are not easily changed. Also note that diffusion may or may not be strategic and productive.

Finally, it should be noted that E.M. Rogers (2003), who is one of the most influential leaders in this arena of work, views *diffusion of innovation* as “a special type of communication concerned with the spread of messages that are perceived as new ideas.” Communication in this context is defined as “a process in which

participants create and share information with one another in order to reach a mutual understanding.” Thus, he defines diffusion as “the process by which an innovation is *communicated* through *certain channels* over time among members of a *social system*.” Using this definition, he delineates the main elements of diffusion of innovations as: (1) the innovation, (2) communication channels, (3) time, and (4) a social system. With respect to diffusion phases, he proposes four stages: innovation adoption, implementation, dissemination of the innovation within a system, and sustainability. It also should be noted that he cautions not to assume that it always is desirable to diffuse an innovation.

Implementation as an Ebb and Flow Phenomenon

Rogers describes innovations as an “S-curve” phenomenon – starting slowly, then (if they catch on) happening rapidly, and then leveling off as they become routine. Some aspects of this are reflected in the popular book entitled *The Tipping Point* by Gladwell (2002).

Rogers goes on to stress that the slope of the curve varies in steepness depending on the rapidity of the diffusion. He also notes that different information sources are important at different stages of the diffusion process. For example, mass media channels are effective at making people aware that an innovation exists; however, social networks are more important in persuading people to adopt innovations and helping them use the innovations correctly.

The ebb and flow also is affected by how well change agents carry out different functions needed at different stages of the diffusion process. These range from building positive working relationships, helping assess needs and problems, and creating awareness of potential innovations that can solve problems. Ongoing work includes providing necessary technical assistance to implement innovations effectively. The most effective change agents are seen as those who help establish enough capacity to sustain the innovation without their ongoing assistance.

Innovation Decision Process

A critical juncture in moving research prototypes into widespread practice is the

decision to adopt/adapt. Rogers (2003) states:

The process consists of a series of choices and actions over time through which an individual or system evaluates a new idea and decides whether or not to incorporate the innovation into ongoing practice. This behavior consists essentially of dealing with the uncertainty that is inherently involved in deciding about a new alternative to an idea previously in existence. The perceived newness, is a distinctive aspect of innovation decision making (compared to other types of decision making).

In discussing this innovation decision process, Rogers contrasts individual and organizational decision making. For individuals, he describes a five step process through which a person “passes from first knowledge of an innovation, to the formation of an attitude toward the innovation, to a decision to adopt or reject, to implementation of the new idea, and to confirmation of this decision.”

Rogers defines an organization as “a stable system of individuals who work together to achieve common goals through a hierarchy of ranks and a division of labor.” In such a context, he stresses that the process is more complicated because system decision making involves the various individuals who are stakeholders.

His analyses indicate that the characteristics of an innovation, as perceived by the members of a social system, determine its rate of adoption. He provides examples and discusses the mechanisms related to each of the following attributes:

1. *Relative Advantage*: “the degree to which an innovation is perceived as better than the idea it supercedes. ... The greater the degree of perceived relative advantage ..., the more rapid its rate of adoption....”
2. *Compatibility*: “the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and the needs of potential adopters.” The more compatible it is, the more rapidly it will be adopted.
3. *Complexity*: “the degree to which an innovation is perceived as difficult to understand and use.” Ideas that are simpler to understand are adopted more rapidly than those that require development of new skills and understandings.

4. *Trialability*: “the degree to which an innovation may be experimented with on a limited basis. ... An innovation that is triable represents less uncertainty ... as it is possible to learn by doing.”

5. *Observability*: “the degree to which the results of an innovation are visible to others. The easier it is for individuals to see the results ..., the more likely they are to adopt.”

Stages of Organizational Implementation

Rogers divides organizational diffusion of innovation into two stages: initiation and implementation.

Initiation: This encompasses everything that occurs within an organization before an innovation is adopted (e.g., information gathering, conceptualizing, planning). This stage is divided into two substages:

- C *Agenda-Setting* – Decision-making bodies within the organization perceive a problem that needs to be addressed
- C *Matching* – An agendized problem is addressed with an innovation that is perceived to fit.

Implementation: Everything that is involved in putting the innovation into use. This is divided into three substages:

- C *Redefining/Restructuring* – The innovation is re-invented to accommodate both the organization (e.g., needs, structure) and the innovation. For example, if a school initiates a new drug prevention program, new staff may be hired or existing staff members’ job duties may change. At the same time, the school may change certain aspects of the drug prevention program to better fit its unique situation.
- C *Clarifying* – People within the organization become more familiar with the innovation, and it acquires meaning within the context of the organization.
- C *Routinizing* – At this point in the innovation diffusion process, the innovation loses its “newness” and becomes a part of the organization’s everyday functioning.

[Note: Sustainability is a closely related concept.]

Rogers' work over the past 45 years is rich in concepts and examples. Here we have provided just a few to convey a sense of the value of framing the implementation problem in terms of diffusion of innovations. In another brief developed for this series, we offer a bit more on Rogers concepts, along with a note about others who are building on his efforts (see list at the end of this brief).

Systemic Change

Fullan (2005) stresses that effective systemic change requires leadership that "motivates people to take on the complexities and anxieties of difficult change." We would add that such leadership also must develop a refined understanding of how to facilitate systemic change. Our work stresses the need to escape "project mentality" (sometimes referred to as "projectitis") and become sophisticated about facilitating systemic change (Adelman & Taylor, 1997a, 2003, 2006 a and b; Taylor, Nelson, & Adelman, 1999).

Linking Logic Models for Diffusion of Innovations and Systemic Change

Figure 2 highlights the ways in which major elements involved in implementing empirically supported innovative practices in an institutional setting are logically connected to considerations about systemic change. That is, the same elements can be used to frame key intervention concerns related to implementing the practice and making systemic changes, and each is intimately linked to the other. The elements are conceived as encompassing the

- vision, aims, and underlying rationale for what follows
- resources needed to do the work
- general functions, major tasks, activities, and phases that must be pursued
- infrastructure and strategies needed to carry out the functions, tasks, and activities
- positive and negative results that emerge.

Strategic planning for implementing the specific innovative practices should account for each of these elements. This must be done with respect both to accomplishing essential systemic changes for (1) implementing the prototype in a given setting and (2) facilitating prototype replication

and scale-up. [Each of the above elements as it relates to systemic change is described in Adelman & Taylor, in press; Center for Mental Health in Schools, 2006.]

Some Key Facets of Systemic Change

Elsewhere (e.g., Adelman & Taylor, 1997a), we have highlighted the nature and scope and the four phases of systemic change involved in prototype implementation and eventual scale-up. In doing so, we stress that at any time an organization may be involved in introducing one or more innovations at one or more sites; it may also be involved in replicating one or more prototypes on a large-scale.

The nature and scope of the activity are major influences on the diffusion process. For example, the broader the scope, the higher the costs; the narrower the scope, the less the innovation may be important to an organization's overall mission. Both high costs and low valuing obviously can work against implementation and sustainability.

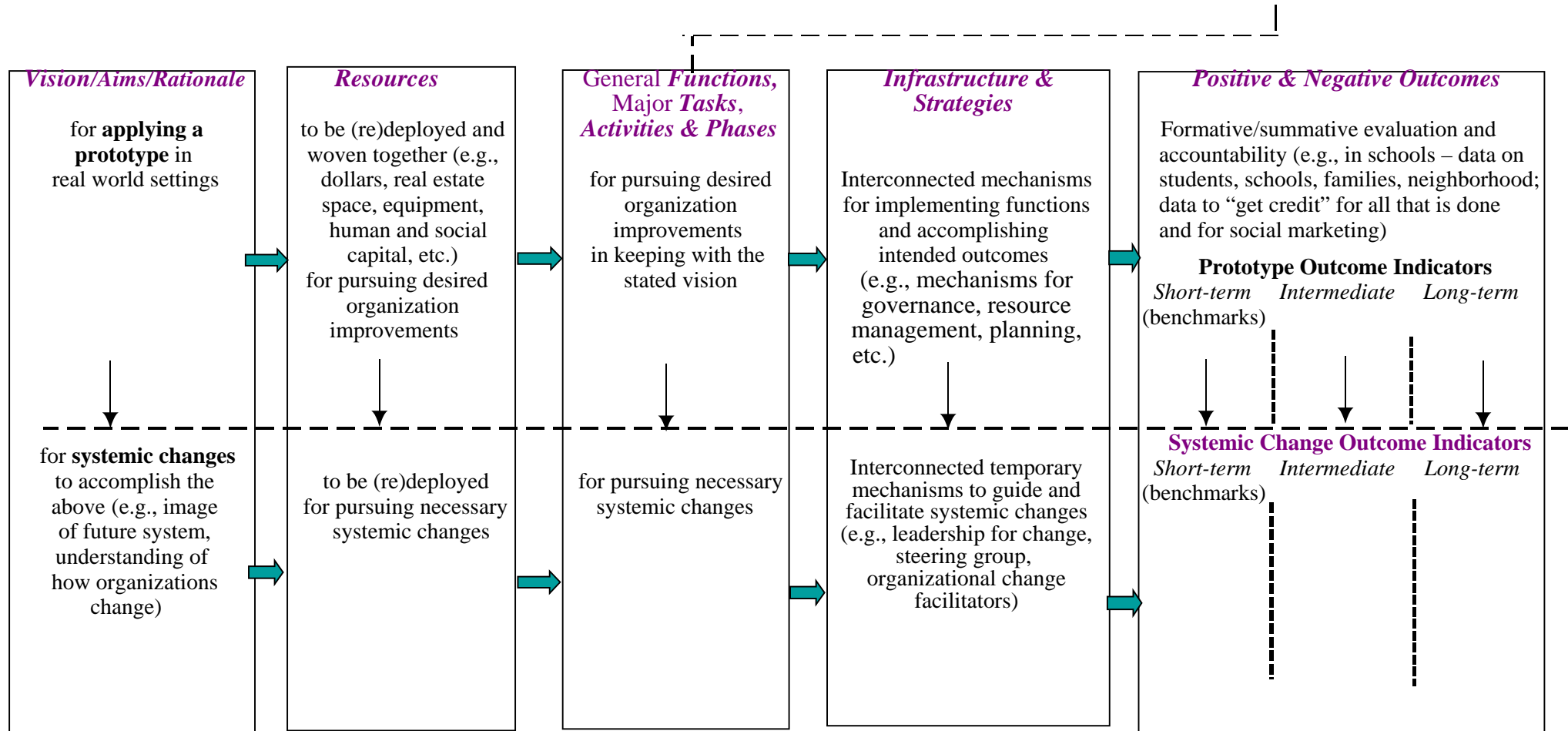
Whatever the nature and scope of the work, key facets include social marketing, articulation of a clear, shared vision for the work, ensuring there is a major policy commitment from all participating partners, negotiating partnership agreements, designating leadership, enhancing/developing an infrastructure based on a clear articulation of essential functions (e.g., mechanisms for governance and priority setting, steering, operations, resource mapping and coordination; strong facilitation related to all mechanisms), redeploying resources and establishing new ones, building capacity (especially personnel development and strategies for addressing personnel and other stakeholder mobility), and establishing standards, evaluation processes, and accountability procedures. All of this requires careful planning based on sound intervention fundamentals.

Whether the focus is on establishing a prototype at one site or replicating it at many, the systemic changes can be conceived as

Figure 2. Linking Logic Models for Designing Diffusion of an Innovation and Related Systemic Changes

Key considerations with respect to both the diffusion and systemic change processes:

- >What is the vision, long-term aims, and underlying rationale?
- >What are the existing resources that might be (re)deployed and woven together to make good progress toward the vision?
- >What general functions, major tasks, activities, and phases need to be implemented?
- >What infrastructure and strategies are needed to carry out the functions, tasks, and activities?
- >What short-term indicators will be used as process benchmarks, what intermediate outcomes will indicate progress toward long-range aims, and how will negative outcomes be identified?



involving four overlapping phases: (1) *creating readiness* – increasing a climate/culture for change through enhancing both the motivation and the capability of a critical mass of stakeholders, (2) *initial implementation* – change is phased in using a well-designed infrastructure for providing guidance and support and building capacity, (3) *institutionalization* – accomplished by ensuring there is an infrastructure to maintain and enhance productive changes, and (4) *ongoing evolution and creative renewal* – through use of mechanisms to improve quality and provide continuing support in ways that enable stakeholders to become a community of learners who creatively pursue renewal. These phases can be contrasted with Rogers’ four diffusion stages. We should also note that others focusing on the implementation of evidence-based practices have stressed the importance of conceptualizing the work in phases. For example, Magnabosco (2006) formulates three phases in her research – pre-implementation, initial implementation, and sustainability planning.

Figure 3 highlights a set of parallel and linked tasks related to each of the four phases as they have been applied in our work diffusing innovations in school settings. Again, we emphasize that the intended nature and scope of focus shapes the costs and the degree of importance assigned by policy and decision makers with respect to ensuring that effective systemic changes are designed, implemented, sustained, and taken to scale.

Systemic Change Strategies and Infrastructure

Common deficiencies associated with systemic change interventions are failure to address major aspects of the matters outlined above. One of the most flagrant failures is not giving sufficient attention and time to creating readiness among a critical mass of key stakeholders in a setting where innovations are to be introduced.

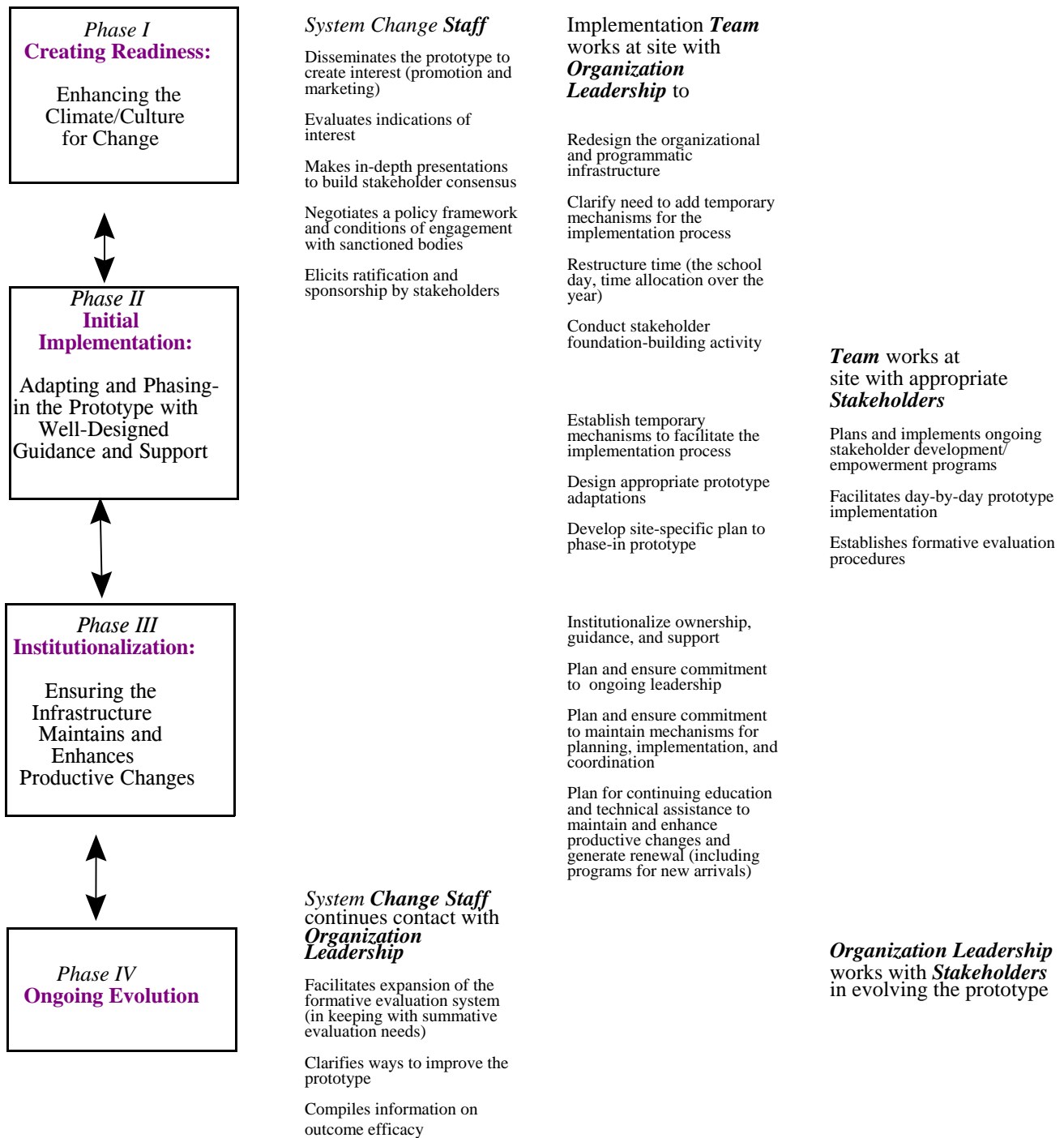
Creating Readiness. Any move toward systemic change should begin with activity designed to create readiness by enhancing a climate/culture for change. Organization researchers in schools, corporations, and community agencies have clarified factors related to creating an effective climate for institutional change (e.g., Argyris, 1993; Fullan & Steigelbauer, 1991; Replication and Program Services, 1993; Sarason, 1996). In reviewing this literature, we have extracted the

following points as most relevant to enhancing readiness for change:

- a high level of policy commitment that is translated into appropriate resources, including leadership, space, budget, and time;
- incentives for change, such as intrinsically valued outcomes, expectations for success, recognition, and rewards;
- procedural options from which those expected to implement change can select those they see as workable;
- a willingness to establish mechanisms and processes that facilitate change efforts, such as a governance mechanism that adopts ways to improve organizational health;
- use of change agents who are perceived as pragmatic – maintaining ideals while embracing practical solutions;
- accomplishing change in stages and with realistic timelines;
- providing progress feedback;
- institutionalizing mechanisms to maintain and evolve changes and to generate periodic renewal.

In creating readiness, an understanding of concepts such as empowering settings and enhancing a sense of community is useful. There is a growing body of work suggesting that the success of a variety of initiatives depends on interventions that can empower stakeholders and enhance their sense of community (Becker, Guenther-Grey, & Raj, 1998; Trickett, 2002). However, the proper design of such interventions requires understanding that empowerment is a multifaceted concept. In discussing power, theoreticians distinguish “power over” from “power to” and “power from.” *Power over* involves explicit or implicit dominance over others and events; *power to* is seen as increased opportunities to act; *power from* implies ability to resist the power of others (Riger, 1993).

Figure 3. Prototype Implementation and Scale-up: Phases and Parallel and Linked Tasks



Updated from: H.S. Adelman & L. Taylor (1997). Toward a scale-up model for replicating new approaches to schooling. *Journal of Educational and Psychological Consultation*, 8, 197-230.

Enhancing readiness for and sustaining innovations involves ongoing attention to daily experiences. Stakeholders must experience systemic change in ways that make them feel they are valued members who are contributing to a collective identity, destiny, and vision. From the perspective of intrinsic motivation theory, their work together must be facilitated in ways that enhance feelings of competence, self-determination, and connectedness with and commitment to each other (Deci & Ryan, 1985).

Infrastructure. Overlapping the efforts to create readiness are processes to develop an organizational structure for start-up and phase-in. This involves establishing mechanisms and procedures to guide the diffusion of innovation, such as a steering group and leadership training, formulation of specific start-up and phase-in plans, and so forth. Implementation and scaling-up of major innovations require *administrative leadership* and the addition of *temporary infrastructure mechanisms* to facilitate changes.

In general, existing infrastructure mechanisms must be modified in ways that guarantee new policy directions are translated into appropriate daily operations. Well-designed mechanisms ensure local ownership of the innovation, a critical mass of committed stakeholders, processes that overcome barriers to stakeholders effectively working together, and strategies that mobilize and maintain proactive effort so that changes are implemented and renewed over time.

It is rare to find situations where a well-designed systemic change infrastructure is in place. More characteristically, ad hoc mechanisms have been set in motion with personnel who have too little training and without adequate formative evaluation. It is common to find structures, such as teams and collaboratives operating without clear understanding of functions and major tasks. This, of course, defies the basic organizational principle that structure should follow function.

Effective and linked administrative leadership *at every level* is key to the success of any systemic change initiative in a complex organization. Everyone needs to be aware of who is leading and is accountable for the development of the planned changes. It is imperative the leaders

are specifically trained to guide systemic change. And, they must be sitting at key decision making tables when budget and other fundamental decisions are discussed.

As highlighted above, the general functions and major tasks related to the diffusion and sustainability of innovations in organizations require dedicated change agent mechanisms. And, these must be fully integrated into the organizational and operational infrastructure at every level. Thus, a significant portion of the resources for systemic change must be used to design and implement the set of integrated mechanisms that constitute the temporary, but essential, infrastructure for steering, facilitating, and evaluating the change process itself.

A team of “champions” who agree to steer the process are an invaluable part of a systemic change infrastructure. Such a team provides a broad-based and potent mechanism for guiding change. At schools, for example, such a steering group creates a special leadership body to own the linked visions for innovation and systemic change and to guide and support the work. These advocates must be competent with respect to what is planned, and they should be highly motivated not just to help get things underway, but to ensure sustainability. The first focus of these teams is on assuring that capacity is built to accomplish the desired systemic changes. This includes ensuring an adequate policy and leadership base for implementation. If essential policy and staffing are not already in place, this becomes the first focus for the group.

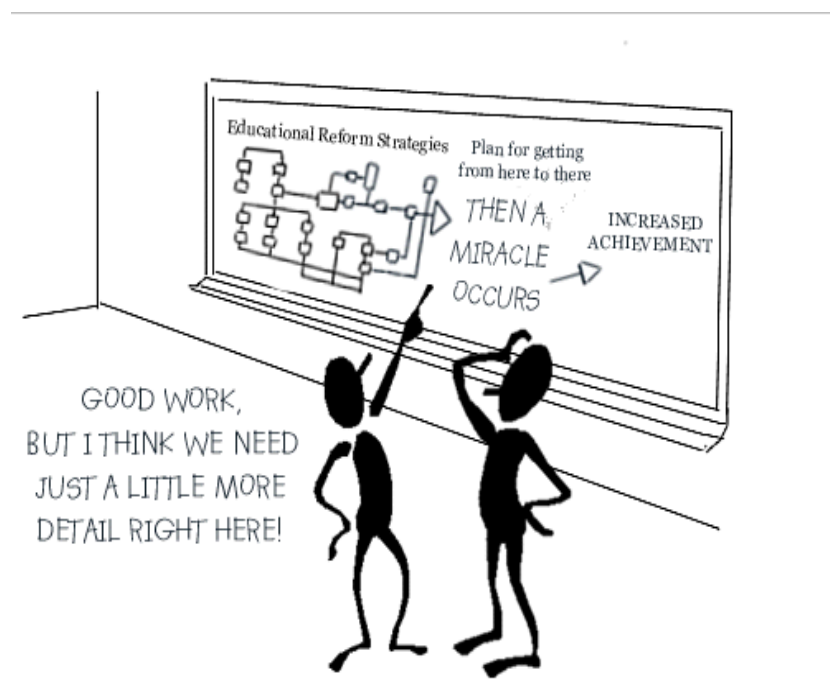
As indicated in Figure 3, one way for an organization to conceive the *daily operational infrastructure* for systemic change is in terms of a *system change staff* (e.g., organization facilitators). Such a group has responsibility for creating readiness, coalition building, implementing strategic plans, maintaining daily oversight, problem solving, resolving stakeholder conflicts, and so forth. They provide a necessary organizational base and skilled personnel for diffusing improvements into an organization and replicating-to-scale.

Concluding Comments

Those who set out to take prototype practices that researchers have found to be efficacious under highly controlled conditions and move them into widespread practice are confronted with an enormous and complex task – to effect systemic changes in established organizations. From the perspective of diffusing innovation through major systemic change, we have begun to operationalize specific strategies for enhancing the way the implementation problem is addressed (see Adelman & Taylor 1997a, b, c; Center for Mental Health in Schools, 2000; 2001a, b; Taylor, Nelson, & Adelman, 1999). This includes strategies for ensuring sufficient resources to develop effective policy and program commitments and a structural foundation for systemic change, innovation sustainability, and ongoing capacity building. There is a special emphasis on facilitating the allocation and redeployment of resources to facilitate the organizational and operational changes that are essential for diffusing promising practices.

Clearly, the many steps and tasks involved in diffusing innovations through systemic change call for a high degree of commitment and relentlessness of effort. Moreover, time frames for building capacity to accomplish desired institutional changes must be realistic. Major systemic changes are not easily accomplished. Awareness of the myriad political and bureaucratic difficulties involved in making such institutional changes, especially with limited financial resources, leads to the caution that the process is not straight-forward, sequential, or linear. Rather, the work proceeds and changes emerge in overlapping and spiraling ways. And those leading the way need to be opportunistic.

We do not need to belabor all this. Our point simply is to make certain that there is a greater appreciation for and more attention paid to the problems of systemic change as efforts are made to diffuse empirically-supported practices. To do less is to maintain an unsatisfactory status quo.



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A Few Other Related Center Documents and Publications

Systemic Change for School Improvement: Designing, Implementing, and Sustaining Prototypes and Going to Scale. Online at
<http://smhp.psych.ucla.edu/pdfdocs/systemic/systemicreport.pdf>

Toward a Scale-Up Model for Replicating New Approaches to Schooling. Online at
<http://smhp.psych.ucla.edu/publications/06%20toward%20a%20scale%20up%20model%20for%20replicating%20new%20approaches.pdf>

Scaling-Up Reforms Across A School District. Online at
<http://smhp.psych.ucla.edu/publications/21%20SCALING-UP%20REFORMS%20ACROSS%20A%20SCHOOL.pdf>

Organization facilitators: A change agent for systemic school and community changes.
<http://smhp.psych.ucla.edu/pdfdocs/Report/orgfacrep.pdf>

On Sustainability of Project Innovations as Systemic Change. Online at
<http://smhp.psych.ucla.edu/publications/45%20on%20sustainability%20of%20project%20innovations%20as%20systemic%20change.pdf>

Systemic change for school improvement. (This is an in press article available on request.)

New Initiatives: Considerations Related to Planning, Implementing, Sustaining, and Going-to-Scale. Online at
<http://smhp.psych.ucla.edu/pdfdocs/briefs/sustainbrief.pdf>

Sustaining School and Community Efforts to Enhance Outcomes for Children and Youth: A Guidebook and Tool Kit. Online at
<http://smhp.psych.ucla.edu/pdfdocs/sustaining.pdf>

Getting From Here to There: A Guide book for The Enabling Component. Online at
<http://smhp.psych.ucla.edu/pdfdocs/enabling/gettingfromhere.pdf>

Diffusion of Innovations and Science-Based Practices to Address Barriers to Learning & Improve Schools: A Series of Information Resources on Enabling System Change
(<http://smhp.psych.ucla.edu/materials/trainingpresentation.htm#fact>)

- >Brief Overview of Major Concepts from E.M. Rogers' Work on Diffusion of Innovations
- >Brief Overview of Malcolm Gladwell's Concept of the Tipping Point
- >Some Key Terms Related to Enabling System Change
- >Systemic Change for School Improvement
- >Change Agent Mechanisms for School Improvement: Infrastructure not Individuals
- >System Change and Empirically-Supported Practices: The Implementation Problem
- >Policy Implications for Advancing Systemic Change for School Improvement
- >Some Key References Related to Enabling System Change
- >Excerpts from Child Trends' series of *Research-to Results Briefs* on Adopting, Implementing, Sustaining, and Replicating Evidence-Based Practices
- > Diffusion: In Pursuit of Action