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## Some Key Terms Related to Enabling System Change

### **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.

In the literature on diffusion of innovation, evidence-based practices, and systemic change, definitions of many key terms are in a state of flux and are likely to continue to vary depending on the specific context in which they are discussed. Below we define some key terms from the perspective of our work with schools and their communities that focuses on addressing barriers to learning and teaching and promoting healthy development. As a starting point, we selected terms used by E.M. Rogers in his work on the diffusion of innovations and widely-used terms found in the recent work on evidence-based interventions in psychology and education.\* We have altered definitions to fit our perspective and added comments in some cases to further clarify a few major related issues.

\*See accompanying reference list and other related resources from the Center.

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**Adoption:** The process and act of formally deciding to use an innovation. See also **Initiation**.

Comment: A decision to adopt does not guarantee the innovation will be implemented effectively, put into widespread practice, or sustained over time.

**Adaptation (also see reinvention):** The process and act of modifying the prototype innovation.

Comment: The rationale for adaptation usually is to make the innovation a better fit with the specific situation in which it is to be implemented. Implied is that the essence of an innovation will be retained; however, a common complaint, especially from innovation developers and change agents, is that this often is not the case.

Comment regarding both adoption and adaptation: An innovation may be implemented at one or more schools on a trial/pilot or demonstration basis, with or without the intent of sustaining it over time or spreading it throughout a school district and beyond.

**Best Practice:** A best practice is one that decision makers view as sufficiently productive for achieving desired results.

Comment: Determination of a best practice 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.

**Champions:** Stakeholders who endorse, sponsor, and advocate an innovation.

Comment: Champions are highly motivated to see the innovation successfully implemented. However, they may or may not have significant power to make it happen, and they may or may not be part of formal mechanisms for advancing work.

**Change Agents:** With respect to innovations in schools, change agents work toward accomplishing effective implementation. They may be formally designated by title, role, and functions, or the work may be an added assignment to the regular role of specific individuals. Change agents may be employed from within or brought from outside the system where the innovation is to be implemented. Other stakeholders who want an innovation implemented may act informally to facilitate change. There has been a tendency to discuss change agents as individuals, rather than thinking in terms of an infrastructure of mechanisms for change that is staffed by change agents.

Comment: Change functions pursued by change agents include those involved in creating readiness, initial implementation, institutionalization, and creative renewal. Change agents should not be confused with intervention **purveyors**. Purveyors are designated representatives of practices. Some are researchers interested in having their intervention adopted; some are company representatives involved in selling an intervention and related training. Purveyors often work with schools and may or may not be trained as change agents.

**Clarifying Stage:** The period during implementation when an innovation is sufficiently in place and on track that stakeholders can experience its usefulness and impact (including any unintended negative consequences) has been defined by some as a clarifying stage. In our work, we view this as the end of the initial implementation phase.

**Creating Readiness:** This first phase of systemic change is concerned with establishing a favorable climate/culture for change through interventions designed to enhance both the motivation and capability of a critical mass of stakeholders.

**Creative Renewal:** This fourth phase of systemic change is concerned with ensuring appropriate evolution of institutionalized innovations by enabling stakeholders to become a community of learners and empowering them to improve practices.

**Diffusion** (encompasses the topics of dissemination and utilization of knowledge and research, as well as knowledge transfer): 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, note that E.M. Rogers defines diffusion as “the process by which an innovation is *communicated* through *certain channels* over time among members of a *social system*.”

**Dissemination:** While the terms *dissemination* and *diffusion* often are used interchangeably, those seeking to influence action are involved in two distinct processes. Dissemination is 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.

**Early Intervention:** There seems to be a tendency to define the term early intervention as equivalent to intervention at an early age. This deemphasizes the importance of intervening as early as possible after the onset of a problem (regardless of age). Thus, it is essential to clarify whether one is referring to early-age intervention or early-after-problem onset.

**Effectiveness:** With respect to intervention, this term is used as a contrast to efficacy to emphasize the need for conducting intervention research under real world conditions (i.e., effectiveness research). The concern is that significant outcomes produced under laboratory conditions may not generalize to schools, community clinics, and so forth.

**Efficacy:** Outcome findings from intervention studies under highly controlled (laboratory-like) conditions.

**Evidence-based Practice** (also referred to as Empirically-supported Practice or Science-based Practice): Evidence-based *practice* refers to any intervention that has been identified as having research data that was generated using methods that meet scientific standards and demonstrate a

level of efficacy deemed worthy of application and evaluation in the “real world.” A subgroup of such practices, referred to as evidence-based *treatments*, focuses on differentially diagnosed illnesses and disorders (see **Evidence-based Treatment**).

An *empirically-based* practice may or may not be a *best* practice (see **Best Practice**).

Comment: 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.

**Evidence-Based Treatment** (also referred to as Empirically Supported Treatment and Science-Based Treatment): This subgroup of evidence-based practices specifically 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.

Comment: The ways in which “science-based” practices are reshaping public policy have raised controversy and concern. 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 under “real world” conditions. In effect, until researchers demonstrate that a prototype is effective in the real world, 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 real world conditions are designated as data on *effectiveness*. In both instances, concern about generalizability arise 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, and only those 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.

**Fidelity:** Fidelity involves implementing a prototype in accordance with its conceptualization and the specifics of its design. Sometimes fidelity is defined as implementation of at least a prototype’s essential principles, core components, or “active agents.”

Comment: Many researchers interested in having schools adopt evidence-based practices, especially therapeutic treatments and prevention programs, have discussed the implementation problem mainly in terms of enhancing fidelity of implementation. Formulating the problem in this way tends to limit the nature and scope of research by ignoring the many fundamental complexities related to diffusing innovations and producing systemic changes.

**Implementation:** This stage of the diffusion process begins when a prototype design is operationalized in practice. Operationalization involves detailing specific tasks and activities and using formative evaluation to ensure appropriate development. The operationalization may occur

at one school, throughout a district, or in all schools. This stage has been divided by some into three phases: redefining/restructuring, clarifying, and routinizing.

Comment: In our systemic change work, we differentiate two phases: the *initial implementation* phase (which includes decision making to adopt/adapt an innovation) and the *institutionalization* phase (e.g., when the innovation is established as a regular, ongoing practice). In almost all instances where a prototype design is to be implemented in schools, some form of adaptation is required. Where the implementation requires major systemic changes, successful implementation probably requires the skills of a well-trained change agent and well-designed capacity building (through technical assistance and regular stakeholder development). Appropriate summative evaluation of outcomes occurs after effective implementation.

**Infrastructure:** An integrated set of physical resources and organizational and operational mechanisms needed for a system to carry out its basic functions.

Comment: Educational agencies have an infrastructure in place. Well-designed mechanisms ensure local ownership, 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 there is renewal over time. For the most part, however, 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 (e.g., teams, committees, advisory groups) operating without clear understanding of functions and major tasks that must be accomplished. This, of course, defies the basic organizational principle that structure should follow function. Thus, when innovations are introduced, (a) existing infrastructure mechanisms usually must be modified to guarantee the design is translated into appropriate daily operations and (b) temporary infrastructure mechanisms are needed to facilitate systemic change.

**Initiation:** This is the facet of implementation that encompasses the process of decision making to adopt/adapt an innovation. This facet has been further divided by some into priority/agenda-setting and “matching” processes.

Comment: The first phase of systemic change involves creating readiness. This encompasses enhancing motivation for pursuing an innovation through social marketing that provides information about the value of the innovation and enhances expectations that the innovation can meet stakeholder needs and circumstances in a cost-effective manner. This first phase enables decision making about adopting/ adapting the innovation.

**Innovation:** New ways of thinking about matters such as policy, intervention, and infrastructure (e.g., new ideas, processes, products, strategies). Their intent is to improve on the current state of practice. Innovations can be *incremental* – designed to make minimal shifts in existing practices, or *radical* – designed to make dramatic shifts. As innovations are operationalized, they become prototypes and often are referred to as “products.”

Comment: The degree to which an innovation is readily accepted often is dependent on how closely it fits with prevailing thinking. Usually, the less it fits, the greater the problem of diffusing it. And, for decision makers, an innovation may be unacceptable until it has proven outcomes/results (e.g., not only evidence



of efficacy and effectiveness but data on cost-benefits). These can be particular concerns for innovations that involve complex and comprehensive interventions and/or whose outcomes will only be observable in the long-range or will have to be inferred (as is the case with prevention).

**Institutionalization** (also see routinizing): Sustaining innovations through establishing policies that maintain the new functions by routinizing physical resources and organizational and operational mechanisms and practices.

**Intervention:** One dictionary definition states that intervention is an interference into the affairs of others. We see that as a cautionary note for all who set out to muck around in the lives of others. Broadly defined, *intentional* intervention aims at producing intended outcomes in systems (i.e., persons, environments) through planned processes. Intended outcomes may encompass system maintenance, change (e.g., development, improvement, remediation), or transformation. Besides planned processes, unplanned transactions occur during an intervention. The combined processes may or may not produce intended outcomes and may produce unintended outcomes, some of which may be negative.

Comment: In our work, we stress that intervention design and implementation should be based on a reciprocal determinist model of (a) system development and human behavior and (b) systemic maintenance, change, or transformation. This encompasses **theories of change** and **theories of resources**.

**Leadership:** The acts of inspiring, mobilizing, guiding, and facilitating stakeholder action toward visionary ends. Leadership has been contrasted with administration and management which are defined in more directive terms and are also contrasted with each other.

**Matching:** The process during decision making by which stakeholders examine how well a proposed innovation “fits” the needs and circumstances of the situation under consideration.

Comment: Motivation (as reflected in degree of engagement) and capability (including levels of competence among various stakeholder groups) are major considerations in establishing a good match or fit.

**Opinion Leader:** Someone within the local social system who can influence others to adopt or reject an innovation.

**Prevention:** Prevention tends to be defined differently in different fields. The dictionary emphasizes prevention as acting to stop or keep something from happening. With respect to the fields of health (particularly public health) and education, the emphasis is on “reducing incidence, prevalence, recurrence of problems, minimizing the time spent experiencing the effects of risk conditions or problems, and decreasing the impact of problems on individuals, their families, and the society. From this perspective, the distinction is made between primary prevention, secondary prevention, and tertiary prevention. Primary prevention involves keeping problems from happening; secondary prevention addresses a problem early- after-onset in order to minimize exacerbation of the condition, keep it from producing additional problems, and minimize the likelihood of recurrences if the problem is corrected; and tertiary prevention focuses on severe and chronic problems to stop further exacerbations and negative effects.

In recent years, public health agencies have tended to define prevention programs and services in terms of the following categories with respect to population served: (1) *Universal Prevention*: Services targeting everyone regardless of level of risk before there is an indication of a problem; (2) *Selected Prevention*: Services targeting persons or groups that can be identified as “at risk” for developing a problem (e.g., whose risk of developing a mental disorder

is significantly higher than average, as evidenced by biological, psychological or social risk factors); (3) *Indicated Prevention*: Services targeting high-risk people who are identified as having minimal but detectable signs or symptoms foreshadowing a problem (e.g., individuals who do not meet diagnostic criteria for disorder).

**Priority-Setting:** The process and act of identifying the order and timetable for addressing specific matters, such as what facets of an innovation will be developed first and/or where it will be first introduced. Sometimes this is referred to as **Agenda-setting**.

**Prototype:** An innovation design that is to be copied.

**Redefining/Restructuring:** This term is used to describe the transactional process through which both a system and an innovation make modifications to better fit the needs and circumstances of the situation in which the prototype is implemented.

Comment: Because of institutional culture, usually the pressure to change the innovation is greater than the pressure to change the system.

**Re-Invention:** (see **Adaptation**).

**Routinizing** (also see institutionalization): An innovation is routinized when it is established as a regular, ongoing practice and becomes a part of an organization's everyday functions and infrastructure.

**Scale Up:** Scale-up involves expanding the use of an innovation from a limited number of sites to a larger number of sites (e.g., large-scale replication). The process often also is referred to as diffusion, replication, roll out, or going-to-scale.

**School Climate and Culture:** School and classroom climate are temporal and somewhat fluid perceived qualities of the immediate setting that emerge from the complex transaction of many proximal factors (e.g., physical, material, organizational, operational, and social variables). These factors reflect the influence of the underlying, institutionalized values and belief systems, norms, ideologies, rituals, and traditions that constitute the school culture. And, of course, both school climate and culture also are shaped by the surrounding and embedded political, social, cultural, and economic contexts (e.g., home, neighborhood, city, state, country). Key concepts related to understanding school climate and culture are social system organization; social attitudes; staff and student morale; power, control, guidance, support, and evaluation structures; curricular and instructional practices; communicated expectations; efficacy; accountability demands; cohesion; competition; the "fit" between key learner and classroom and school variables; system maintenance, growth, and change; orderliness; and safety.

Comment: One of the most important and difficult challenges in diffusing innovations in schools involves the problem of overcoming mismatches between a proposed innovation and the current school and classroom culture. This clearly is a fundamental systemic change problem.

**Social Marketing:** The process of selling social ideas. The focus is not just on dissemination but on diffusion (i.e., influencing action). Social marketing uses concepts from commercial product marketing to plan and implement interventions. These include the notion of strategic focus (e.g., targeting of "audiences"), use of psychologically oriented techniques, enhancing and sustaining the perceived value of what is being "sold" (e.g., costs vs. benefits), and ensuring those who are identified with the work are seen as credible.

Comment: Intervention *purveyors* often don't differentiate between product marketing and social marketing. This is especially unfortunate when the purveyor assumes the role of a change agent. Social marketing is one of the major tools needed by all who take on change agent roles.

**Stakeholders:** Stakeholders are members of an organization or social system who may be affected by the adoption of an innovation.

**Sustainability:** One dictionary definition indicates that *to sustain* is “to keep in existence; to maintain; to nurture; to keep from failing; to endure.” With respect to innovations in schools, sustainability can be defined as a matter of institutionalizing and maintaining systemic changes.

Comment: From a systemic change perspective, sustainability also involves ensuring appropriate evolution of innovation through enabling stakeholders to become a community of learners and facilitating periodic creative renewal activity.

**Systemic Change:** Systemic change definitions depend on what systems are the focus of intended changes. For our purposes here, we are talking about schools and the networks that shape decision making and implementation related to their organization and operations. Systemic change related to schools involves more than learning new knowledge and skills, it requires organizational changes that amount to a cultural shift in institutionalized values (i.e., reculturalization). We delineate four phases of systemic change: (a) *creating readiness* – using interventions designed to establish a favorable climate/culture for change through enhancing both the motivation and capability of a critical mass of stakeholders, (b) *initial implementation* – during which changes are phased in with well-designed guidance and support, (c) *institutionalization* – during which innovations are sustained through establishing policies that maintain the new functions by routinizing physical resources and organizational and operational mechanisms and practices, and (d) *creative renewal* – which focuses on ensuring appropriate evolution of institutionalized innovations by enabling stakeholders to become a community of learners and empowering them to improve practices.

Comment: For interventionists, the problem is that the greater the distance and dissonance between the current culture of schools and intended school improvements, the more difficult it is to successfully accomplish major systemic changes.

**Utility of an Innovation:** The value-added over and above the status quo.

Comment: Given that diffusion of innovation involves cost, decisions to add an innovation require a cost-benefit analysis that clarifies that the benefits exceed the costs to a degree that adds substantial value to schools. Moreover, the value has to be greater than potential other interventions that could be implemented.



## 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.* Online at:  
<http://smhp.psych.ucla.edu/publications/Systemic%20Change%20for%20school%20improvement.pdf>

*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>

### The Center's Series of Information Resources on Enabling System Change

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

- >Brief Overview of a Major Review by L.W. Green, et al. (2009) entitled: Diffusion Theory and Knowledge Dissemination, Utilization, and Integration in Public Health
- >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
- >Dissemination Focused on Diffusion: Some Guidelines
- >Diffusion: In Pursuit of Action
- >Excerpts from Child Trends' series of Research-to Results Briefs on Adopting, Implementing, Sustaining, and Replicating Evidence-Based Practices
- >Making and Disseminating Recommendations is Not Sufficient
- >Intro to Multi-Level Community Based Culturally Situated Interventions