

The Mega System

Deciding. Learning. Connecting.

**A Handbook for Continuous Improvement
Within a Community of the School**

Sam Redding

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This handbook portrays the school as a system with many parts to be continuously engineered to precision by the community of people who have every reason to provide the best possible education for the children in their midst.

For more information about The Mega System, including downloadable forms and tools, see: www.adi.org/mega

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This handbook is the product of the work of the LSS Mega Project staff at the Academic Development Institute and others at ADI who have devoted their thoughts and labors to helping schools improve so that each and every child may find avenues to success.

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WHAT IS A MEGA SYSTEM?

What is a Mega System?

The term “mega system” derives from a field research project at the Laboratory for Student Success at Temple University that studied comprehensive school reform. Comprehensive school reform moves a whole school forward by dramatically changing the way it operates. This is a big (mega) picture approach to school improvement, requiring coherence among many component parts, in the way a system is a functioning whole with coherence among its parts. Comprehensive school reform attempts change in a school by first showing a model of the intended result and then carefully building toward that model by assembling the various parts. Sometimes this works, but often the model doesn’t quite fit the particular school, critical parts are not constructed according to the plan, or the model, when properly assembled, fails to fly.

While still looking at the big picture, this handbook portrays the school as a system with many parts to be continuously engineered to precision rather than a static model to be replicated. The Mega System focuses on the internal operations of a school and the community of people who have every reason to provide the best possible education for the children in their midst. The incentive for improvement lies in parents’ desire for their children to succeed and in the commitment to service of school people professionally equipped and empowered to pursue excellence in the community to which they belong. Devotion to children they know, love, and call by name is powerful motivation to constantly seek better ways to insure that each child meets standards of learning and is able to reach beyond those standards.

The Mega System abandons the replication of a prototype in order to chase the lodestar of student success; it swaps allegiance to program implementation for the corrective powers of timely data and sound research. The big picture is important, but so are the details. The indicators of a strong system of continuous improvement provided in this handbook enable the school, through its teams, to monitor its parts and subsystems, to test them against student learning outcomes. With experience, the teams modify and add to these indicators as they find their own avenues to success. The teams fine-tune the subsystems so that the school itself, the mega system, performs ever more effectively.

What Isn't Here?

Schools come in all shapes and sizes. Primary centers. Elementary schools. Middle schools. Junior high schools. High schools. Alternative schools. Public schools. Private schools. Parochial schools. Big schools and small schools. City schools and country schools. The Mega System described in this handbook strikes at the core of schooling, the hub that schools have in common—teaching and learning. The Mega System centers on the principal, teachers, students, and parents. This handbook describes the subsystems that are essential to effective schooling and how these subsystems function toward their own ends and also contribute to the chief purposes of the school as a whole.

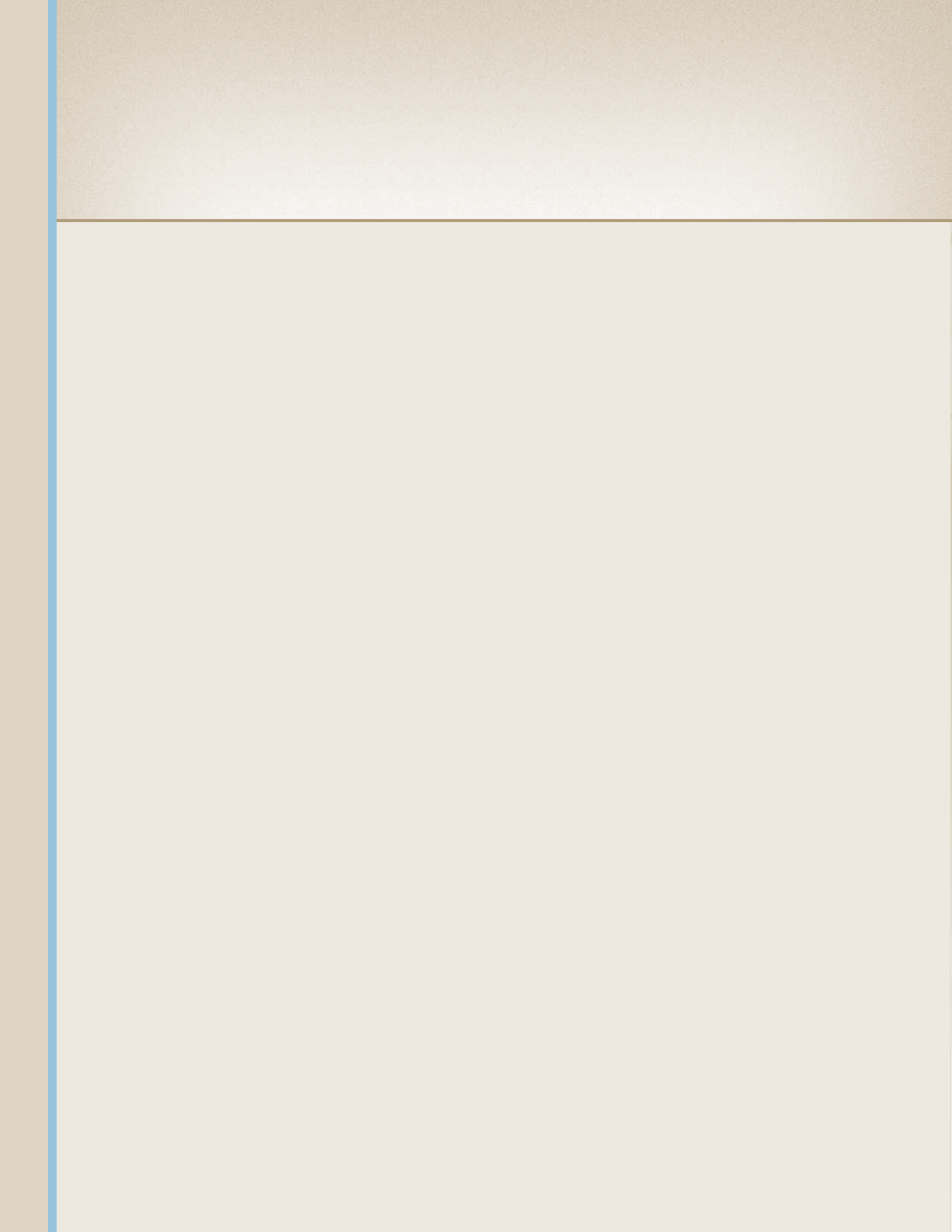
Because this handbook focuses on systems rather than models, any school choosing to adopt its principles will make adjustments to fit its particular configuration. Even when a school gets the subsystems of the Mega System spinning efficiently, humming along with effective synchronicity, it will realize that other subsystems not described in this handbook must be organized and made to contribute to the overall purposes of the school. The Mega System does not outline systemic processes for extracurricular activities, guidance and counseling, after-school and tutoring programs, cafeteria operations, school maintenance, or transportation of students, yet these are all important functions in most schools. The Mega System's parsing of curriculum and instruction is most relevant to the core academic subjects, but its ideal of a standards-based curriculum delivered through highly individualized instruction is applicable with adaptations to special education, vocational education, the arts, and physical education.

While every subsystem is important to school improvement, the central components of deciding, learning, and connecting are paramount. The Mega System provides a solid point of departure, a way to put a school community on the track of continuous improvement. The Mega System provides basic training in school improvement. A good school will learn from it, adapt it, and reach well beyond it.

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CHAPTER ONE

Models, Systems, Communities

How do we best set schools on a course of continuous improvement? Thirty years of research supplies a consistent picture of what the most effective schools look like, but moving a particular school toward the ideal remains a thorny undertaking. Research also abounds with evidence-based practices, but the most scientifically credible of that evidence confirms very small and specific niches of teaching and learning. School personnel are not well equipped, nor do they have much time, to sort through the specifics, clump enough of them together to provide general direction, and apply the right practices to the school's unique situation. School reform models are an attempt to efficiently and coherently clump together an array of evidence-based practices to provide a picture with considerable detail. Yet, school reform models have struggled to demonstrate their ability to achieve significant gains in learning across a variety of settings and to internalize and perpetuate the processes that would continue to yield results.

RECOMMENDATIONS

- a) Replace the static model with a system of continuous improvement.
- b) Abandon the replication of a prototype and chase the lodestar of student success.
- c) Swap allegiance to implementation for the corrective powers of timely data and sound research.

From 2000 to 2005, the LSS Mega Project was a field research project of Temple University's Laboratory for Student Success, one of the ten regional education laboratories supported by the U. S. Department of Education's Institute of Education Sciences. The Mega Project was launched in 2000 to study the burgeoning comprehensive school reform movement, with particular attention to Temple's own reform model, Community for Learning (CFL), which was adopted by more than 100 schools in the short span of three years when federal funding for comprehensive school reform became available in 1997. The LSS Mega Project staff has looked at school improvement from the inside, working closely with one reform model, school by school, and from the outside, studying implementation progress across the 100 schools. The project also followed the research literature that has tracked comprehensive school reform from its birth in the designs that emerged in the early 1990s to the implementation of those models in several thousand schools over the past several years.

This handbook is a mixture of research on school improvement and the Mega Project's practical experience with comprehensive school reform. The Mega Project's close look at school reform prompted a stream of questions for which project staff turned to the research literature and its own empirical examination for answers. These answers led to the chief recommendations herein: a) Replace the static model with a system of continuous improvement; b) abandon the replication of a prototype and chase the lodestar of student success; and c) swap allegiance to implementation for the corrective powers of timely data and sound research. These recommendations arise, in part, from frustration with comprehensive school reform (CSR). In so many schools, CSR came, ruffled feathers, and was gone, with little lasting consequence. But why? The models were sound, research-based, and proven in some contexts. They also were not based on esoteric methodologies or pedagogical rocket science, but on disciplined application of good practices that are on display in thousands of high-functioning schools every day.

Geoffrey Borman (2005) casts comprehensive school reform in a more positive light, demonstrating that the effect of CSR on student learning has been greater than the effect of Title I. Borman also shows that the most impressive gains in CSR schools come not during the three years of funded implementation, but in the fifth and subsequent years, with effect sizes accelerating in the out years. Despite these rosier views of the effects of CSR, Borman concedes that the effects of CSR are extremely variable. The characteristics

of the model matter far less than the fidelity of implementation. According to Borman, “school-specific and model-specific differences in the ways that the components are actually implemented explain considerably more than simply knowing whether or not the CSR developer requires them” (p. 13). The success of school reform is tied most strongly to the level and quality of implementation. This caveat is the Achilles heel of model-based school reform. Implementation of a “model” has proven problematic. Knowing what a model school looks like is a different proposition from internalizing the processes of change and providing the incentives for success that result in continuous improvement.

High-functioning schools and schools cited for their “effectiveness” do the right things, do them well continuously, and always look for ways to improve. Dramatically changing the way a school operates when the school is not functioning well, as comprehensive school reform has attempted to do, takes time beyond the ordinary, an infusion of *new* time into a time-scarce system. Why is time so scarce in a system that has huge gaps of “downtime,” most notably the summer months and ample holiday breaks? Teacher contracts bind them to duty for very few days and hours beyond the time students are present. Time for teachers to receive training or to meet and plan is confined to occasional, isolated, institute days and tiny slices of time before or after school. To carve deeper into teachers’ contractual time is to take them away from students, and that seems counterproductive.

Schools that fail with comprehensive school reform do so not for lack of resources, other than time, but for want of determination and internal discipline. One is tempted to say to a school desiring improvement, “Here is a handbook. It will show you what has worked elsewhere, what research supports, and it will give you practical steps toward self-improvement. If you want it, make it yours.” In essence, that is the purpose of this handbook: To place in the hands of school personnel who possess the determination and discipline for sustained improvement a coherent set of practices, a system if you will, that will serve them well. If they make it theirs. If they make it theirs, they will also find new time to get the job done.

Scheduling time to meet, train, and plan is a concrete objective. The school inclined toward improvement either finds the time or it doesn’t. Will power and discipline sound like personality characteristics, and personalities are not easy to change. But in fact,

PURPOSE

In essence, the purpose of this handbook is to place in the hands of school personnel who possess the determination and discipline for sustained improvement a coherent set of practices, a system if you will, that will serve them well. If they make it theirs. If they make it theirs, they will also find new time to get the job done.

the strength of persistence (will power) and diligent execution of coordinated work (internal discipline) within an organization result in large part from the rewards and sanctions provided by the system as well as the opportunities for shared leadership toward clear goals. Getting these things right—rewards, sanctions, goals, and shared leadership—are, of course, part of continuous school improvement. They are, in fact, the foundation upon which it must be built. Because school is a supremely human enterprise, the relationships among its constituents are the connecting tissue of its system for improvement.

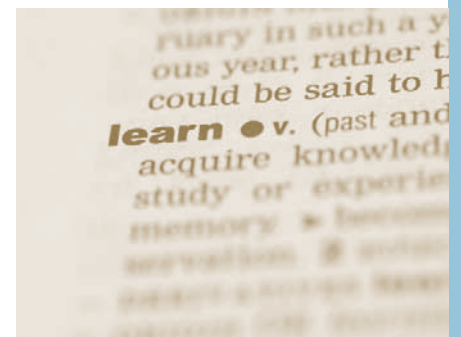
The determination and internal discipline to succeed, time to meet and plan, and a friendly handbook for guidance—those may be the ingredients of success. We fully understand, however, that something else may be required—a reason to seriously tackle school improvement and to stick with it. What is the incentive? What would motivate the people connected with a school to initiate a demanding system of improvement and persist with it? No Child Left Behind (NCLB) has made educators, and to some extent the public at large, cognizant that public schools should be accountable to the public for their performance. That performance is measured by the school's ability to move students, including disaggregated groups of students, to mastery of state learning standards and to provide a safe and orderly environment. NCLB's sanctions are viewed as punitive, for the most part, and applied only to "failing" schools. In fact, NCLB also encourages states to reward districts and schools for improvement in performance, and the philosophy of "no child" is that a single child should not be allowed to languish even within a school whose overall performance is exemplary.

While NCLB has provided a measuring stick for schools, a compelling incentive to engage in rigorous and continuous improvement must be found elsewhere. Who cares most about the school success of an individual child? Most assuredly, the child's parents do. NCLB attempts rather feebly to tap into the potentially powerful motivating factor of parents' concern for their own children with its choice option for schools that are failing. The effects of this limited parental choice have not been great, however, because: 1) the parents of a child who is not doing well but is attending a school that is meeting the minimum standard for progress do not have the option to switch schools; 2) choices available to many parents are limited, either because of geographic distance to a better school or because nearby schools are little better than the one the child would leave behind; and 3) the choice is limited to public schools.

How, then, might we tap parents' desire for their children to receive a good education as a motivating power in school improvement? How, in fact, might the strong professional desire of individual administrators and teachers to improve their schools and to advance the life opportunities for each and every one of their students propel continuous school improvement? The answer to both these questions lies in a system that candidly scrutinizes all its varied parts, holds them to the candle of sound research, examines their impact on each student's learning, and makes courageous decisions to get better. But a system of improvement is only part of the solution. The people who populate the system—students, parents, teachers, staff, volunteers—must share responsibility for the results, and they must understand clearly what is expected of them and how they can contribute. Beyond that, the system must include ways to reward success, in collective celebration and in recognition of individual excellence.

School reform *models* control the multitude of variables at play in a school by reducing the range of possible ways of doing things to a coherent core. Reform models are management templates, simplifying what is otherwise immeasurably complicated. The beauty of a school reform model is that it can establish coherence and order within a school. One problem with models is that they tend to be static, and their inflexibility can be frustratingly restrictive, creating a backlash of disillusionment, resentment, and resistance from school personnel. Another problem is that models are like glass attempting to cut a diamond; after much contact, the model is reshaped more than the school and loses its potency in the process.

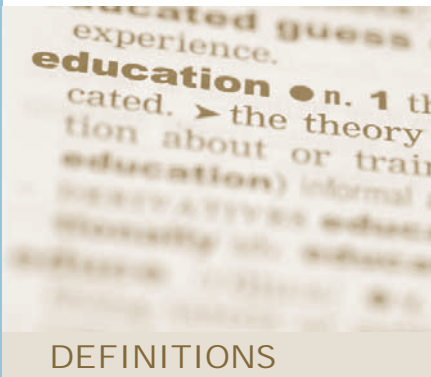
A *system* is a group of linked parts that work together toward a common end. The commonly used term "school system" applies to a group of schools, organized into a district, and each school is a part in the system. But each school itself also operates as a system, with its own parts and subsystems, working toward its own ends. In the system of a single school, the state and the district serve as gatekeepers, regulating inputs to the system and monitoring its output—the learning its students acquire. The parts of the school's system include its internal decision-making structures, its policies and practices, its goals, its personnel and their various roles, its facilities, materials, and tools. The health and productivity of a system depend upon the quality of each of its parts and the effectiveness of their relationships to one another. Determining and improving quality requires methods for measuring the functioning of each part, each subsystem, and the system as a whole.



DEFINITIONS

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DEFINITIONS

A **community** is a system of people, linked by their association with one another, their communication with one another, their allegiance to common values and purposes, and their assumed responsibilities and obligations to one another.

A **school community** consists of the people intimately attached to that school—teachers, students, parents of students, administrators, support staff, and volunteers.

A *community* is a system of people, linked by their association with one another, their communication with one another, their allegiance to common values and purposes, and their assumed responsibilities and obligations to one another. A *school community* consists of the people intimately attached to that school—teachers, students, parents of students, administrators, support staff, and volunteers. Community is the counterbalance to the cold, bureaucratic tendencies of public education, the formalities of organization that obscure the essentially personal and social purposes of schooling (Sergiovanni, 1999). The health and productivity of a school community depend upon the capacity of its members (human capital) and the quality of their relationships with one another (social capital).

A school is both an organized system and a community of people. It is a human enterprise. The expertise, motivations, rewards, and opportunities for association and communication of these people are essential to its effectiveness. The Mega System outlined in this handbook is an attempt to overcome the shortcomings of static models by internalizing systems for self-management that are guided by data and research. The Mega System is attentive to the human aspects of a school community whose purpose is to add significant value to the learning and life success of each of its students. The incentive to improve lies in parents' desire for their children to succeed, and in the commitment to service of school people professionally equipped and empowered to pursue excellence in the community to which they belong. Devotion to children they know, love, and call by name is a powerful motivation to constantly seek better ways to insure that each child meets standards of learning and is able to reach beyond those standards.

School Reform: A Little Background

In the particulars of year-to-year life in an American school, teachers and principals try to navigate a course that is steady, comprehensible, and compatible with the context of their work. Stiff-arming each innovation that invades their province, they protect the integral core of professional endeavor, as they see it. This image presents competing forces—the inertia of everyday practice in schools and the erratic, short-lived, but momentarily vigorous assaults from the broader educational and political establishments. The erroneous conclusion may be drawn that these forces offset one another, and change is thwarted. In fact, they tend to moderate the excesses of one another, and change, viewed from a longer perspective, proceeds in a general course with constant self-correction.

Whatever the status quo in schooling, an alternative view will challenge it. Thus, we have competing visions of what schooling should be, and each vision might trace its philosophical ancestry through generations of previous visions, each contending for favor in its time. The starting point in this battle over how children are best educated might be placed within the lyceum of ancient Greece, in the Romantic challenge to Classicism (Hirsch, 2001), with the flowering of the American common school, at the rise of Progressivism (Chall, 2000; Ravitch, 2000), or anywhere else along the historical continuum. In every era, there is a status quo in schooling, and there is a challenge to it.

For sake of brevity, we will place our beginning point in 1983, with the publication of *A Nation At Risk: The Imperative for Education Reform*, by the newly-formed National Commission on Excellence in Education. The report boldly asserted that our nation was at risk because our public schools were failing to educate citizens capable of competing in a world economy that increasingly required a highly skilled workforce. As a consequence, the quality of individual life in the United States was diminishing, and the strength of the nation was declining. With this alarm call came a suggested direction, and that direction defines the integral core of professional endeavor to this day, and the assumed trajectory for what is to come.

Effective Schools

A Nation at Risk emerged from a backdrop of evidence about the possibilities for improved learning and the factors that contribute to it. The very idea that children's learning is significantly dependent upon the ways a school operated was asserted in the effective schools research in the 1970s (Edmonds, 1979). This paved the way for a national appeal for improvement of public schools in *A Nation at Risk*. The effective schools movement was itself a response to the 1966 Coleman Report (Coleman et al., 1966) that found scarce evidence of a relationship between a school's resources and its students' learning. While the Coleman Report emphasized the powerful influences of family background on children's learning, its principal author, James S. Coleman, refined this view in later writings (Coleman, 1981) and in comparisons between public schools and Catholic schools (Coleman & Hoffer, 1987). While adhering to his earlier finding that the level of resources in a school bore little connection to learning outcomes, Coleman did find that Catholic schools stressed academic rigor, order, discipline, time on task, and firm standards, and that these factors were predictive of greater learning. The same factors, he concluded, were also predictive of greater learning when found in public schools. Further, Coleman attributed the success of Catholic schools to the expectations they placed on parents, and the values and sense of community they nurtured among their staff, students, and families of students. Successful schools were able to restore the "social capital" that was being drained away from children by a society that increasingly separated adults, especially parents, from time with and connection to children (Coleman, 1987). These conclusions were very much in concert with the effective schools research which identified correlates of effective schools, including high expectations, frequent monitoring (measuring) of student progress, time on task, orderly environment, and home-school relations.

Standards and Assessments

The remedy for failing schools, as proffered by *A Nation At Risk*, was to transform the United States into a Learning Society, engaging every institution in life-long learning, delivered with excellence. The hallmark of this revolution would be "high standards," rather than minimum requirements. By elevating standards and expectations, levels of learning would rise, and our nation would be removed from risk.

School Reform: A Little Background

More than two decades after the publication of *A Nation At Risk*, we remain within the broad sweep of change toward schooling by standards. Over the course of those years, a thousand minor winds of innovation have blown, but the call to standards has weathered the storms and taken hold. The states have now adopted learning standards for children in their public schools. Student progress is measured with the yardstick of standards, and the process of measuring (assessment) has proceeded hand-in-hand with the establishment of standards. The measures are the standards-based assessments that states have instituted alongside the standards. Standards and measures are the legacy of *A Nation At Risk*, and they form the consistent and inexorable nucleus of change in public education.

TQM and Data-Based Decision-Making

In the 1980s, American business was highly influenced by Total Quality Management (TQM; Deming, 1986), which married three central principles regarding the success of an organization: 1) success is based upon the quality of the product or service as determined by its ability to satisfy the needs of the customer or client, 2) achieving quality comes from careful measurement of all systems and processes so that decisions are made from real-world data, and 3) quality is not a static condition, but a systemic devotion to continuous improvement. Thus, attention to the continuous improvement of systems, focus on outcomes, and data-based decision-making leaked into the school reform movement and found there a comfortable compatibility with standards and assessments. The Malcolm Baldrige model and the Malcolm Baldrige National Quality Award (given for organizations, including schools, that demonstrate quality principles) continue to apply TQM to the operation of schools.

Best Practices and Comprehensive Models

Along with the steady march of standards and measures came the search for methods that would boost children's learning so that they could meet the standards. Which practices were best? In what ways should schools reform themselves so that their students would measure up? What models of school practice could be held up as examples of success? These questions led to the cataloging of best practices, all supposedly validated by sound research, and

the collection of practices into models for school improvement. The New American Schools Development Corporation was formed in 1991 (name changed to New American Schools in 1995) as a nonprofit corporation in conjunction with the America 2000 initiative of the first Bush administration. The purpose of New American Schools was to fund the development and dissemination of whole-school reform models. Models were accepted for funding based on competitive proposals, and the funding supported phases of development, implementation, demonstration, and scale-up. RAND Corporation was commissioned to provide evaluation of the project and a running account of the experiences of the models and the schools that adopted them. In 1997, Congress passed legislation to provide funding for schools that adopted models, thus accelerating the expansion of the models developed under New American Schools and bringing new models onto the scene. The legislation was rolled out by the U. S. Department of Education as the Comprehensive School Reform Demonstration Program (CSRDP), and by 2002 whole-school designs had been adopted by more than 4,000 schools with Department of Education support (Berends, Bodilly, & Kirby, 2002).

Scientifically Based Research

With standards to measure against, state assessments to provide the measures, and competing reform models applying research-based best practices, the zeitgeist let loose by *A Nation at Risk* was sweeping forward as the twentieth century gave way to the twenty-first. Then the questions were raised: How *scientific* is the research underlying the best practices, and how rigorous is the evaluation applied to the reform efforts? The quantification of education was intensified in No Child Left Behind, the reauthorization of the Elementary and Secondary Education Act in 2001. At the same time, the U.S. Department of Education was reorganized around the premise that education must base its practices on scientifically based research, similar to the medical model. Impetus for this new focus on more rigorous research came from a variety of directions, including a report by a committee of the National Research Council (Shavelson & Towne, 2002). This report suggested ways the U. S. Department of Education could promote evidence-based policies and practices, placing education research within the scientific community with its own methods for rigorous research.

School Reform: A Little Background

Incentives

The chief alternative to whole-school reform is to provide rewards for success and let the school-based educators work out the details. Merit pay for teachers is an incentive system directed at the accomplishments of individual teachers. Other incentive systems reward the school for value-added performance. The underlying premise to an incentives-based approach is that there is no one best way to achieve educational excellence, and each school must be freed to pursue its own course, with incentives to encourage good results. School-level experimentation and accountability take preference over the adoption of external recipes (models or practices). The incentives might be provided for individual teachers, school leaders, or whole schools. The incentives would include monetary rewards and freedom from regulation. In the case of charter schools, freedom from regulation is often the incentive to propel studied experimentation, and the commitment of a school community charting its own destiny is the driving force. Within regular systems of public schooling, some states (Kentucky notably among them) have established formulas to channel increased funds to schools whose students demonstrate success in meeting standards (as evidenced on the state's assessments) and to provide oversight to those that lag.

Most incentives approaches are not contrary to the reigning regime of standards and assessments, but are a challenge to the whole-school reform movement. Given a climate of standards, assessments, and scientifically based research, schools (and their personnel), with proper incentives, will take self-correcting steps to improve their performance, and parents, given access to measures of school performance, will choose schools that get the results they desire for their children. Incentives are typically proposed by advocates of productivity; a careful analysis of the cost effectiveness of competing educational practices encourages decision-makers to weigh likely results in allocating resources and energies. Erik Hanushek (1994) asserts this point:

We are persuaded that widespread use of appropriately designed performance incentives will bring positive results without large budget increases. Ample evidence can be found throughout industry and society to demonstrate that individuals respond to well-structured incentives. In a wide variety of circumstances, organizational objectives are better met through performance incentives than through regulations and administrative directives. (p. 5)

The underlying premise to an incentives-based approach is that there is no one best way to achieve educational excellence, and each school must be freed to pursue its own course, with incentives to encourage good results.

School choice is a challenge to both whole-school reform and external quantification of learning, and free market economics is the philosophical front-edge of the school choice movement. While a system of school choice may be positioned within structures of standards and assessments to guide parents' decisions, in the end, the consumer is supreme. Perhaps parents will choose schools that demonstrate success on standards-based assessments, and maybe these will be schools that have adopted particular school improvement models, but the incentive (typically a voucher) follows the choice of the child's parents and not the wishes of the state.

Cross Currents

Set a high bar for learning and calculate the percentage of students who clear it. If method X achieves a higher percentage of successes than method Y, then add X to the list of components in a system of education to be encouraged in schools, or let each school find its own mix of successful methods. Keep measuring and refining the methods until all children clear the bar, and then raise the bar. Reward schools that get the results, or at least give them a reprieve from punishment. This is the essence of school improvement at this juncture in history. But a consistent opposition has been voiced to what is perceived as the narrowing rigidity of standards and assessments and the efficacy of whole-school reform.

David Berliner and Bruce Biddle (1995) debunk what they call a manufactured crisis in education, claiming that *A Nation At Risk* was based on a false premise of the inadequacy of American schools. They revive the claim that the problem in American education is inequality of resource allocation rather than paucity of credible practice.

Robert Evans (1996) questions the sticking power of school change that is externally imposed, adopted under coercion, or accompanied by false promises and unrealistic expectations. Real and lasting change requires the internalized commitment of participants, not their grudging, minimal acceptance. The engines of change are personal and internal to the organization; they are imbedded in experience and able to overcome inertia and rise above predicted trajectories of results. "In the best of schools, with the best resources and the most skillful leadership, the time frame for transforming culture, structure, belief, and practice is years. Success will require the highest strivings

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and the most down-to-earth expectations. Only if we maintain a healthy respect for the lessons of experience can real hope truly triumph" (p. 299).

John Goodlad lambasts the school reform movement and the excesses to which standards and assessments have been applied, writing that

Arguments for children's well-being, no matter how well grounded, rarely win the day in eras of school reform. The current testing crusade has now become politically correct. Counterarguments commonly receive the "you're against change" response. The data on the low correlation between test scores and honesty, civility, and civic responsibility are brushed aside. The impact of failure on children's psyches is declared an illusion. There is scant debate over what to do or how to do it. The charge to school principals and teachers is to just do it. (2002, p. 22)

The Problem

Describing the characteristics of successful schools is not difficult. The same descriptive traits found in the effective schools research of the 1970s continue to appear on lists of research-derived school effectiveness factors. The list below is derived from two syntheses of school effects research.

Public schools continue to provide a solid education for an extremely broad and diverse swath of children, and some schools sparkle as gems of excellence. More and more, the focus of concern is directed at a stubborn segment of the public school system which seems resistant to reform.

Characteristics of schools that consistently show good achievement gains:

- Strong academic leadership that produces consensus in goal priorities and commitment to excellence
- A safe, orderly school climate
- Positive teacher attitudes toward students and expectations regarding their abilities to master the curriculum
- An emphasis on objectives-based instruction in allocation of time and assignment of tasks to students
- Careful monitoring of progress toward goals through student testing and staff evaluation programs
- Strong parent involvement programs
- Consistent emphasis on the importance of achievement, including praise and public recognition for students' accomplishments

(Freiberg et al., 1990; Stringfield & Herman, 1996)

Despite all we know about schools that “work” and the waves of national and state attention to school reform, low achieving schools persist on the American landscape. Of course, public schools, in general, continue to provide a solid education for an extremely broad and diverse swath of children, and some schools sparkle as gems of excellence. More and more, the focus of concern is directed at a stubborn segment of the public school system which seems resistant to reform, comprehensive or otherwise. Low achieving schools are typically characterized as urban (or remotely rural), serving populations living in poverty, dealing with diversity of student readiness (including wide ranges of English language skills), and prone to categorization of students in ways that lower expectations (tracking and excessive classification and segregation for special education; Land & Legters, 2002). Operationally, low achieving schools tend to allow great discretion to teachers in “making up”

The Problem

instructional strategies without systematic regard for evidence-based practice, ongoing assessment of student learning, and alignment of instruction to intended outcomes (Slavin, 2002). Even with the common set of learning objectives provided by each state's learning standards and assessments, as required by No Child Left Behind and its predecessor legislation, instruction is still often characterized by haphazardness. This chaos is created, in part, by: a) the bewildering array of options teachers have for teaching (Rosenholtz, 1991); b) a school's lack of data on individual students with which teachers could base appropriate and timely remediation to improve achievement; c) the inability of school personnel to use data to the best advantage; and d) misunderstanding and misapplication of data in decision-making (Earl et al., 2002).

These characteristics of low achieving schools suggest the need for the kind of dramatic and thorough improvement that comprehensive school reform promises. The failure of comprehensive school reform to deliver on this promise is due, in large part, to the difficulty of fitting external models to particular school situations. When the square peg of the model meets the round hole of the school, something has to give. More often than not, the model is shaved to fit and loses its potency in the process. We might scan the deficiencies found in ineffective schools and conclude that they need:

- a system of alignment, data analysis, and targeted application of evidence-based instruction;
- systematic approaches to align actual classroom instruction with intended outcomes;
- convenient and accurate diagnostic feedback on student progress toward learning objectives; and
- solid grounding in evidence-based instructional practices and a systematic way to match strategies with diagnosed gaps in learning.

Pinpointing these specific areas for improvement, however, does not answer the question of why these schools are resistant to change. Such a narrow focus on curricular and instructional improvement fails to take into account the context in which instruction occurs and the systems, managerial and relational, that prevail in schools. In the years since comprehensive school reform was supported through federal initiatives, the percentage

of schools adopting research-based CSR models has never been very large. Nationally, there was a decline in the percentage of eligible schools adopting CSR models from 20.2% in 1998 to 8.1% in 2002 (Viadero, 2004). Attempting to meet annual yearly progress as mandated by NCLB, most low-performing schools adopted hybrid reform approaches or clusters of projects and programs, often with inadequate understanding of their compatibility for the particular school context or their coherence within the school system.

In an ongoing study of the evolution of school improvement models by RAND, Susan Bodilly reports that “. . . designs changed over this time period [1992-1998] in several ways: planned development; response to the needs of students and teachers in the schools served; adaptation to conflicting policies, rules, and regulations; and complete reconceptualization of the design” (2001, p. 126). Planned development included changes to or the addition of a specific curriculum, processes for professional development of teachers, “cross-walking” the design’s standards to a district’s standards, and creation of diagnostic student assessments. Unplanned adaptations as a result of interactions with students and teachers included the necessity of creating basic literacy and numeracy programs; training teachers to adapt student assessment rubrics to state and district standards; and adjustments to the original design to account for the lack of teacher time and teacher capabilities. Existing policy environments of states, districts, schools, and unions caused the retooling of design components as the models scaled up. Timelines for implementation were lengthened, some design components were eliminated, and some required components became recommended. Bodilly concludes that:

When teams allow mandated standards, assessments, curriculum, and other professional development to substitute for their own, the coherence of the school’s program is possibly lessened or remains as fragmented as before the use of the design. Allowing a large range of implementation of elements of designs instead of strong adherence to design principles also increases the probability that the schools will never attempt the full vision of the design and never achieve the student performance hoped for by the design teams. (p. 127)

The Problem

Designs must be able to adapt to circumstances and change with experience, but guard against sacrificing their integrity in order to accommodate resistance and countervailing pressures inherent to school organizations. In the end, the model is judged by the results it produces. "Changes in the offerings and strategies of improvement programs can also wreak havoc on a school's efforts to implement and integrate initiatives. Although these changes often reflect the programs' efforts to increase their effectiveness, they may create confusion at the school level" (Hatch, 2002, p. 630).

The failure of a school reform model to deliver the expected results can be attributed to three causes, or a combination of the three: a) the prescribed practices are not sufficiently powerful to improve student achievement; b) the practices are not organized and presented in a manner that makes successful implementation likely; and c) the practices are not implemented well (Leithwood, Jantzi, & Mascall, 2002). Other obstacles to successful implementation of school improvement designs are the "presence of too many disconnected, episodic, piecemeal, superficially adorned projects" (Fullan, 2001, p. 109), and a tendency to negotiate down the requirements of the design in order to make it seem doable to the school (Hatch, 2002).

Prior to "comprehensive" school reform, a typical implementation mode involved the introduction of design strategies to a small cohort of teachers within a school, with the hope that their success would be contagious, and their expertise would be spread among their colleagues. In reality, some improvement efforts never grew beyond the original cohort, and some cohorts died on the vine. Comprehensive school reform called for whole-school change, and the importance of reaching an early critical mass of teacher buy-in and application became apparent. Robert Evans (1996) sums up the need for reaching a critical mass of support as follows:

The ultimate goal may be a true schoolwide consensus for change, but the first and most crucial target is a critical mass of committed supporters. What is a critical mass? It depends on many factors and is impossible to quantify. It is the right number of the right people. In some situations this means a majority of the stakeholders, in others, a smaller number of respected, influential people. In either case, when innovation reaches this critical mass and has recruited a range of advocates, change acquires a momentum of its own and moves into the mainstream of discussion, perception, and practice. Much of the resistance that emerges in the early stages of implementation

CAUSES OF FAILURE

The failure of a school reform model to deliver the expected results can be attributed to three causes, or a combination of the three:

- a) the prescribed practices are not sufficiently powerful to improve student achievement
- b) the practices are not organized and presented in a manner that makes successful implementation likely
- c) the practices are not implemented well

The Problem

begins to recede. Largely for this reason, the building of commitment among a critical mass of staff ranks among the most important goals change agents can set for themselves. (p. 69)

Evelyn Klein and Stefanie Bloom (2002), designers of programs to introduce science vocabulary in the early grades, draw a conclusion similar to Evans's from their experience in taking these programs to the field:

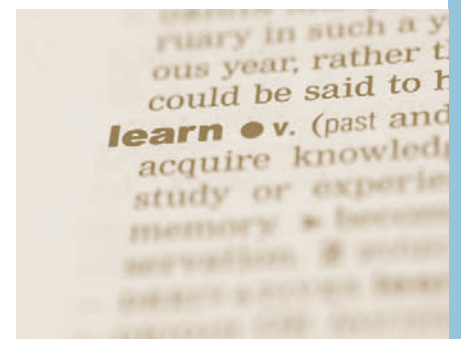
The most difficult component of the implementation of new programs is first persuading teachers to change their current practices to those determined to be most effective by the research community. Working directly with teachers to support implementation of an effective, validated, and research-based model of school reform, the authors learned that there is a critical need for increasing true teacher commitment for the use of such models in schools. (p. 9)

A Change in Course

A *model* is a template for operating a school that eliminates many possible courses of action in order to focus on one set of coherent actions. A model is typically designed by an external agency and adopted by a school. It provides an image of how things are to be. A school implements a model—puts it into place. For many schools, especially those where the possible courses of action are impossibly numerous and much effort is wasted sifting among them, a model is just what is needed. A model establishes a common vocabulary and standard practices; a model gives the school a mechanism for eliminating a lot of activity that does not fit the template. Think of the myriad of projects, programs, and events that grow like kudzu in a school over time. Often they begin to operate at cross purposes to one another, and resources of time and expertise do not allow for any of them to operate at a high level of quality. Ideally, a model is grounded in research and proven in the field.

So what could possibly be wrong with models as vehicles for school improvement? The primary problem with models is their inflexibility, on one hand, and the tendency to dilute their strengths on the other. Both of these limitations arise from the friction created when a fundamentally communal and personal institution takes on the raiment of cold management methodologies. And yet, scientific management has transformed industry into highly-efficient, exceptionally productive suppliers to match the demands of consumers. Will it do the same for schools? Only if the management models or systems can enhance rather than diminish the capacities and attachments of the people who inhabit schools—teachers, students, and the families who entrust their children to the schools.

Given the opportunity to implement a model, school personnel naturally expect to move toward a static vision of what that model represents. They ask to “see” what it will look like. Model providers distill from a thousand pieces of intricately-connected, research-based practice a set of principles from which can be molded something to show—a model. School personnel then view the model, without a full understanding of the many practices and their relationship to one another, and attempt to replicate it. Imagine looking at an automobile and then attempting to replicate it without an understanding of the functions and properties of its many parts. A school is no less complicated than a car.



DEFINITION

A *model* is a template for operating a school that eliminates many possible courses of action in order to focus on one set of coherent actions. A model is typically designed by an external agency and adopted by a school. It provides an image of how things are to be.

A Change in Course



The “professional development” approach to school improvement operates in the reverse direction from a model.

The “professional development” approach to school improvement operates in the reverse direction from a model. Over a period of time, school staff are “trained” in the myriad of research-based practices, typically in a hodge-podge of graduate courses, workshops, and institute days. No two teachers necessarily travel the same route and learn the same things. The pieces are unattached to one another. This approach is like disassembling an automobile and scattering the parts in several rooms, with a few teachers sent to each room to induce from the sampling of parts what the whole must be.

The logical remedy for the shortcomings of models and professional development approaches is to combine the two: Show the whole while also teaching the parts. In fact, this is what comprehensive school reform has attempted; model providers first demonstrate the efficacy of their prototype and then train school personnel to replicate it by studying its component parts, holding them to the light, shaking them, and learning how they work. While this dual-track strategy makes perfect sense and has been employed by model designers in comprehensive school reform, the results have not been impressive. Because school reform models are research-based, their faithful implementation should improve most schools. But faithful implementation is rare. The typical three-year implementation period passes through predictable phases of enthusiasm, frustration, resistance, softening of the model, and resigned submission to the inertia of the *status quo ante*. Then the implementation period ends, and atrophy begins. In fact, the deterioration of research-based practices adopted during the implementation period is often rapid or immediate. The same is true when administrators change, states mandate new directions, districts adopt new programs, or teachers leave and new ones arrive with no knowledge of the model.

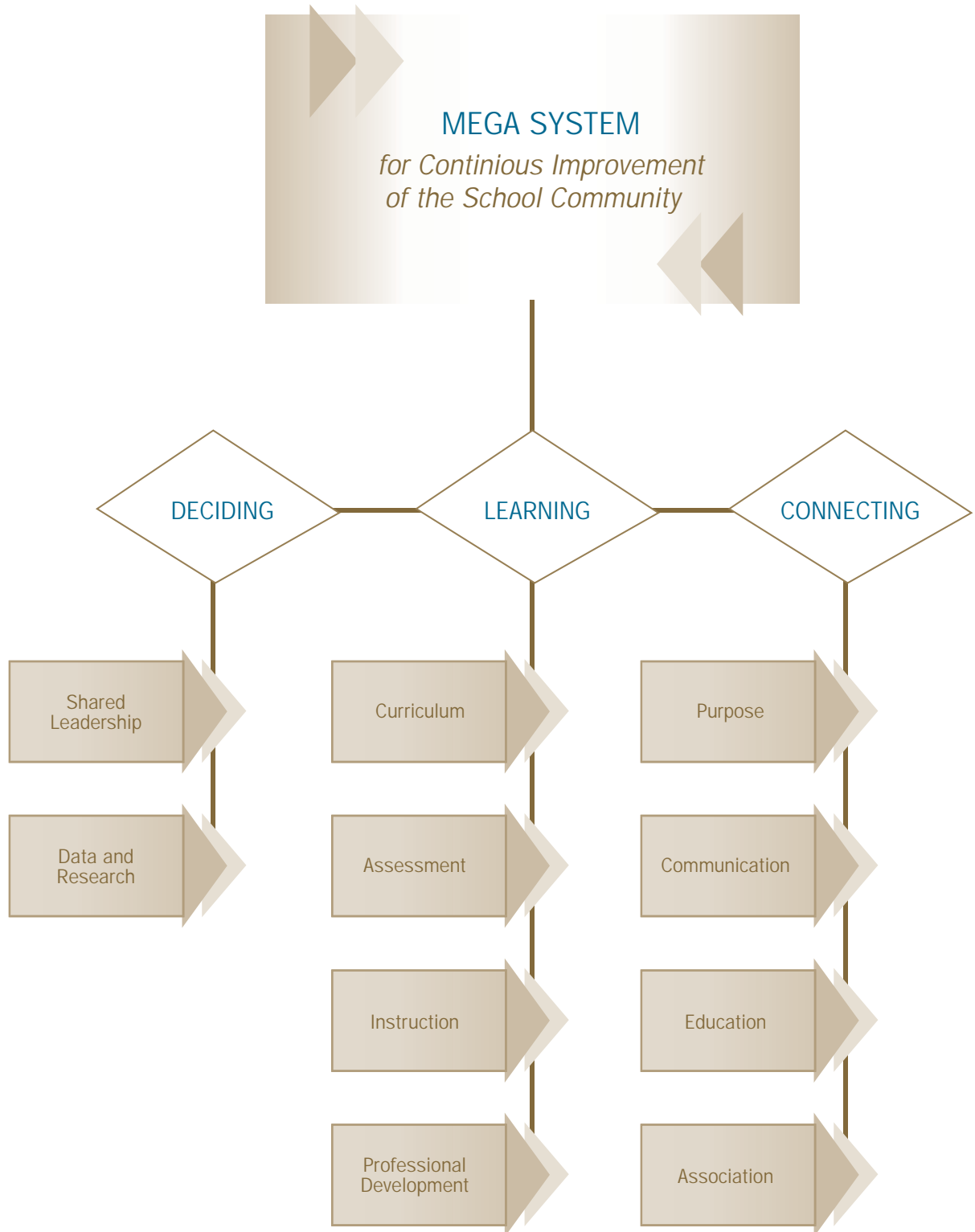
Again, the problem is not in identifying the characteristics of effective schools; the problem is in moving schools in the direction of greater effectiveness. Change and sustainability are the challenges. For this reason, showing a school a “model” of what an ideal school might look like is only a very small first step in a long, never-ending journey to continuously improve student learning.

Theory to Practice

With its elegantly simple method of testing and revising theories by empirically examining their powers of prediction, science has nibbled away at the unknown for three hundred years, opening portals of light to an infinitely complex universe. Applying the same methods to the study of humankind, our development as distinct individuals, our relationships one to another, our institutions, cultures, and histories, social scientists, in just over a century, have advanced our understanding of ourselves. Natural science, in the wake of its discoveries, spawns technologies that alter the possibilities of human life, from medicines to computers to airplanes. Social science also creates technologies through its new understandings, and these technologies are found in public policy, human services, and education. Education, then, is an applied discipline which borrows from the social sciences the theories that are tested and revised.

As an applied social science—the inheritor of technologies spun off by psychology, sociology, economics, and political science—education is also a laboratory where the social sciences seek empirical verification for their theories. Public schools are enmeshed in the fabric of government and operate as polities in their own right, making them prime subjects for the inquiries of political scientists. Education is a sizeable segment of the economy, fueled largely by public dollars; schools prepare workers and consumers alike, and are economic systems with their own incentives and costs, all empirical opportunities for the theory-testing of economists. Psychological theories such as learning theory, motivation, behavior management, and efficacy are tested in schools, as are the sociological theories that find an ideal proving ground in an institution that so carefully groups its members and so meticulously accounts for their ethnicity and socioeconomic status.

Schools, then, are both the consumers of the technology spun off from social science and laboratories for testing the theories of social science. The process is circular, of course, with advances in theory leading to improvements in the technologies of teaching and learning. When a coherent set of theories is established and linked to a related system of practices (technologies), a model is born. A model is a system of practice rooted in a coherent set of theories. A model can itself be the object of further inquiry, as its efficacy and effectiveness are tested, giving evidence of the predictive potency of the underlying theories and the practical powers of its system of technologies. While education tends to borrow its theories from other disciplines, its philosophies are its own.



The Mega System

The Mega System reveals the Mega Project's experience with comprehensive school reform; thus, it seeks a workable balance among the school's internal and potentially sustainable decision-making structures and practices, sound teaching practices, and due regard for the human relationships that inhere to a place of community. The Mega System for school improvement is a blueprint for establishing a system of continuous improvement within a school. The process is informed by close attention to data. The ultimate measure of progress is student learning. The Mega System leans heavily on management methods, but places them in the hands of those responsible for the education of children in one school, with regard for all the idiosyncrasies that characterize any school and make it different from any other.

The word "process" is in disrepute among educationists these days, suffering from the connotation that it contrasts with "results," implying an emphasis on what teachers do rather than what students learn. Improved learning outcomes for students do not spring from closer scrutiny of data, however, but from the changes in instruction that scrutiny of data prompts. Student learning data is evidence of "results," and it is also feedback in a continuous "process" to improve the results. A school improvement process is not an endless trail of activity without fruition, but a chain in which each link contains "results" that strengthen the next link and, consequentially, the chain itself.

Continuous school improvement is, in essence, an engineering function. A good engineer knows enough basic research to make informed decisions, and closely examines data to make the right adjustments in a system to produce the best results. The engineer also knows when to call on the researcher for guidance, when to listen to the frontline users of the product, and how to understand each part of the system in relationship to the whole. The Mega System places teams in the role of engineers, constantly tweaking the parts of the system to make a more effective whole.

The Mega System is composed of three parts: Deciding, Learning, and Connecting. These parts, bound together coherently, are an attempt to marry the efficiencies of management theory (decision-making) with the art of good teaching (learning), in due tribute to the

essential relationships (connections) among a school's constituents. Deciding includes the structures and processes for decision-making, including shared leadership, use of timely data, and attention to research. Learning encompasses curriculum (what is taught), assessment (knowing what is mastered), instruction (the way learning is organized), and professional development (building the expertise of school staff). Connecting is the bridge-building component, which is also a means of promoting a sense of community, and attends to the articulation of core values about education, the engagement of parents, and communication and mutual support among teachers, students, parents, and school staff. The next three chapters cover the three parts of the Mega System.

Putting a System in Place

Putting in place a system for continuous improvement is not the same as replicating a model. Let's review a few points made in this chapter. We said that after experience with comprehensive school reform models, our conclusion is that we need to: a) replace the static model with a system of continuous improvement; b) abandon the replication of a prototype and chase the lodestar of student success; and c) swap allegiance to implementation for the corrective powers of timely data and sound research. High-functioning schools and schools cited for their "effectiveness" do the right things, do them well continuously, and always look for ways to improve. Dramatically changing the way a school operates when the school is not functioning well, as comprehensive school reform attempts to do, takes time beyond the ordinary, an infusion of *new* time into a time-scarce system. Schools that fail with comprehensive school reform do so not for lack of resources, other than time, but for want of determination and internal discipline. In some cases, the model is not appropriate for the school, but in most cases the model is compromised, not to make a productive fit with the school, but in incremental defeats in the face of opposition and difficulty. The same can happen with a "system" of improvement, unless its guardians remember that the system must flex and bend only in response to evidence of changes in student learning. Student success, as evidenced in learning outcomes, must be the lodestar.

That said, the first elements of the system to put in place are: a) decision-making structures to monitor progress and alter practices to achieve the best results, and b) data processes that provide

The Mega System

frequent and reliable measures of student learning and operational information. Once the decision-making structures and the data collection processes are in place, changes in curriculum and instruction can proceed. The next chapter describes decision-making and data processes that establish the foundation for a system of continuous school improvement. Subsequent chapters add detail about learning and about connections within the school community. Each chapter includes checklists of indicators to guide school-based teams in determining the completeness of the system for continuous improvement. Beyond that, the teams will establish their own methods for examining the effectiveness of the system to produce improved results in student learning. The teams will also develop specific measures to determine the effectiveness of each part in the system and their relationship to the whole.

Where to begin? The Leadership Team described in the next chapter can use the checklists of indicators provided in each chapter as a needs assessment, determining which parts of the ultimate system for continuous improvement are in place and which parts must be added. If there is no Leadership Team, establishing one may be the first order of business. From the needs assessment derived from the indicator checklists, a “school improvement system plan” can be developed, outlining the components of the system that must be added or improved, timelines, and teams or persons responsible. The indicator checklists can be used periodically to reassess the health of the system.

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