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ABSTRACT

This report examines the evidence available on improving school quality through implementation of the Malcolm Baldrige Education Criteria for Performance Excellence. The Baldrige criteria address many issues other failed educational efforts have not, including leadership, systems thinking, changes in school culture, and data-driven decision making. The report is intended to provide useful information about the current state of Baldrige applications and to make useful recommendations regarding potential Baldrige K-12 implementation, evaluation, and research. Many published Total Quality Management and Baldrige articles describe a single school or district implementation, and some of the results these implementations have achieved. However, these reports sometimes include surprisingly little detail. Detailed information and comprehensive data are the keys to fulfilling the promise of Baldrige. The literature reviewed for this report reveals that implementing Baldrige successfully involves a long-term perspective and a focus on changing core processes, especially teaching and learning. Training in Baldrige concepts and utilizing quality tools are essential, as is working together in diverse and dedicated teams toward common objectives. Leadership is critical for success. Successful implementations are not easy to achieve, and much more information is needed to enhance success. (Contains 68 references.) (SLD)

The Promise of Baldrige for K–12 Education

ACT Policy Report

MaryBeth Walpole
Richard J. Noeth

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INFORMATION FOR LIFE'S TRANSITIONS

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ACT Policy Research

Policy Research Advisory Panel

Office of Policy Research Staff

Preface

The stated mission of the ACT Office of Policy Research is to inform policy makers and the general public on important issues in education by providing timely information that can directly enhance knowledge, dialogue, and decision making. The current ACT Policy Research Agenda focuses on four specific areas:

- Developing the Applicant Pool
- Increasing Diversity in College
- Remedial Education in College
- Retention in College

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This study, *The Promise of Baldrige for K–12 Education*, was completed as part of the ACT Awards Program. Quality Education New Jersey and Asbury Park High School (NJ) had applied for an ACT Award for the 2001–02 cycle by requesting a "what works" review of what was known about applications of the Baldrige criteria to K–12 education. Asbury Park High School was beginning to use the Baldrige Model as part of its educational reform initiative and wanted to learn how others had applied the model, how to develop benchmarks, and what some of the effects of Baldrige applications had been in other settings. Professor MaryBeth Walpole of the Department of Educational Leadership at Rowan University in Glassboro, New Jersey, was commissioned by ACT to lead this "what works" review.

This study and resulting policy report have greatly benefited from the contributions of many individuals. Several external-to-ACT educators provided considerable help in formulating the study and reviewing draft manuscripts. These individuals include: Robert Cooper (UCLA), Robert Dalton (Indiana Department of Education), Joseph Tomaselli (Quality Education New Jersey), and Cheryl Wild (Wild & Associates). The ACT Policy Research Advisory Panel provided recommendations about the formulation of the study and reviews of draft manuscripts.

Numerous ACT staff members were involved in various stages of the study. The following ACT staff provided help on study formulation and/or manuscript review: Donald Carstensen, Patricia Farrant, Richard Ferguson, Julie Noble, Wayne Patience, Nancy Peterson, Rose Rennekamp, Richard Sawyer, Cynthia Schmeiser, Vicki Vernon, and Ann York. Christina Aicher, Kathleen Lynch, Jacqueline Snider, Peggy Weih, and Andrew Welch provided assistance in manuscript preparation and bibliographic review.

We are grateful for the assistance and support of the aforementioned individuals but accept sole responsibility for any errors of omission or commission.

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Executive Summary

In 1983, *A Nation at Risk* reported that American students were failing to learn critical knowledge and skills at all levels of the educational system and were being surpassed by students in every other industrial nation. Since this landmark study, a significant number of educational efforts to raise student achievement have been initiated. However, few of these reform strategies have been successful and American school children continue to lag behind much of the world in educational achievement.

Although not without controversy, efforts focused on improving quality processes based upon the Malcolm Baldrige Education Criteria for Performance Excellence may hold promise for fundamentally improving K–12 education. The Baldrige criteria address many issues other failed educational efforts have not—including leadership, systems thinking, changes in school culture, and data-driven decision making. This report examines the information available on improving school quality through implementation of the Baldrige criteria. It is intended to provide useful information about the current state of Baldrige applications and to make specific recommendations regarding potential Baldrige K–12 implementation, evaluation, and research.

The quality movement in the United States began in the 1970s as American industry began losing ground to international competitors. When Japan began to challenge American manufacturing superiority in the 1970s, Americans began to investigate how Japanese production and management methods could prove useful in this country. As business leaders were re-engineering corporate structures and focusing on high quality processes, the quality of American education was coming under increasing fire. Given the publicity the growing quality movement in industry was receiving, political, business, and education leaders began investigating the application of quality principles to education. They focused on school core operating processes, including teaching, learning, administration, operations, and personnel. The National Malcolm Baldrige Education Criteria for Performance Excellence were piloted, and education was adopted as a category for the Malcolm Baldrige National Quality Award.

The Baldrige Education Criteria for Performance Excellence embody eleven core values, from which all methods, criteria, and measures in any implementation derive:

- *Visionary Leadership*
- *Learning-Centered Education*
- *Organizational and Personal Learning*
- *Valuing Faculty, Staff, and Partners*
- *Agility*
- *Focus on the Future*
- *Managing for Innovation*
- *Management by Fact*
- *Public Responsibility and Citizenship*
- *Focus on Results and Creating Value*
- *Systems Perspective*

Evolving from these eleven core values are seven categories that schools and districts can use for self-assessments, Baldrige criteria implementations, and Baldrige applications:

- *Leadership*
- *Strategic Planning*
- *Student, Stakeholder, and Market Focus*
- *Information and Analysis*
- *Faculty and Staff Focus*
- *Core Process Management*
- *Organizational Performance Results*

Despite the myriad interpretations and models, there are few empirical studies of the outcomes of Baldrige improvement implementations. Many published TQM (Total Quality Management) and Baldrige articles, which often describe a single school or district implementation and some of the results these implementations have achieved, include surprisingly little detail.

One large user survey focused on the implementation of TQM across 58 districts in 25 states. Some schools reported significant change as a result of improving the quality of processes. One district that examined its high school student attendance process reported an increase in attendance rate from 86% to 92%. An urban high school, with more than half of its students living in poverty and single-parent homes, reduced class cutting by almost 40% and the number of failing students from 151 to 11. The same school reduced its dropout rate from almost 13% to 2%. These results were accomplished through a series of steps that included identifying causes, keeping statistical records, implementing student and parent contracts, and incorporating lunchtime peer tutoring.

Many Baldrige schools described implementation strategies that focused on improvements of core processes with a long-term outlook. Training was critical, as was the use of teams. The schools that focused on Baldrige often highlighted the significance of planning. Forming partnerships with businesses using Baldrige provided many schools with resources, such as facilities, access to technology, and knowledge of quality principles and quality tools. Partnerships have also assisted schools with Baldrige training initiatives.

One Illinois school district saw benefits from implementing Baldrige and partnered with Motorola to focus on improvement. Motorola was the first Baldrige Award winner and provided knowledge and assistance in the district's implementation. Sixty-nine percent of the district's subject-area and grade-level scores increased on the state achievement test, English as a second language test scores increased, the number of worker compensation claims and student and staff accident reports dropped, and library book circulation doubled.

New Jersey formed a statewide consortium to improve education through implementing the Baldrige criteria. The consortium encouraged a business partnership model to provide knowledge and training in quality improvements, and sponsored state-level training workshops for districts focused on implementing the Baldrige criteria. Several districts in the consortium

increased student achievement after implementing Baldrige criteria. One district narrowed the gap between scores of African American and white students on statewide fourth-grade language arts tests from 41% to 9%.

The two 2001 winners of the Malcolm Baldrige National Quality Award in Education were Pearl River School District in New York and Chugach School District in Alaska. Pearl River achieved a 23% gain in students graduating with a New York State Regents diploma, dramatically increased the percentage of students taking AP courses, and improved the percentage of students passing the AP Examinations by 42%. The Chugach District increased its achievement test scores in all areas, student use of the Internet increased from 5% to 93% (critically important given the district's geographical challenges), and 70% of the seniors took college admissions tests, a dramatic increase from 1998 when no students took the exams.

Two notable studies attempted to investigate process change across multiple institutions. Both included urban, suburban, and rural districts of diverse sizes. One examined leadership processes in districts strictly focused on implementing Baldrige; the other considered quality implementation more broadly by focusing on those districts committed to quality improvements. The 30 districts in the first study had been working on implementing the Baldrige criteria for an average of 3.6 years, with 87% beginning their efforts at the district level. The majority of districts received training in continuous improvement principles, and leadership teams of administrators, teachers, and support staff focused on the implementation. The study noted that a key weakness was the failure of schools to provide evidence of actual core process change, high performance levels, positive trend data, and related school comparisons. While this report provides much needed information on implementations in multiple districts, much more definition and substantiation are needed.

The second study focused on ten high schools over four years, using both quantitative and qualitative methods. Finding that state-mandated assessments often prompted a focus on quality, it concluded that such tests can complement a focus on improving the quality of school processes. Overall, the data showed a low to moderate level of implementation by teachers. However, teachers spoke of improving the quality of processes as a task separate from their teaching. When improvement efforts were made in classrooms, teachers often focused on discipline and classroom management processes rather than on improved teaching and learning. Moreover, districts collected substantial data on many of their core processes, which should have been used to guide decision making. Yet, because little systematic analysis and reporting of those data occurred, teachers reported making decisions based on intuition, not data.

Following the establishment of the Baldrige Award for Business, Baldrige began to transfer to education in two ways: (1) some districts began to translate and apply the criteria and (2) states began to include educational institutions in the eligibility for state quality awards based on the criteria.

States have involved schools in Baldrige in different ways. New Mexico, Tennessee, North Carolina, New York, Florida, and New Jersey have provided statewide support and specific initiatives encouraging the use of Baldrige in schools. North Carolina's partnerships with businesses encouraging Baldrige implementation in schools have incorporated 45 districts and 70% of students statewide. New Jersey's statewide consortium has encouraged Baldrige criteria implementation. New Mexico and Tennessee have generated interest in Baldrige by creating multi-tiered state level awards.

Both New Jersey and North Carolina have encouraged partnerships between businesses and schools to assist with a Baldrige adoption. Businesses have trained school personnel in quality management principles and tools, and have often provided resources such as materials, facilities, and technology. New Jersey and New Mexico have offered training sponsored by the state quality organization. These sessions can be advantageous as they offer ongoing training specific to education and educational issues and can lend assistance with state level applications.

New Mexico, North Carolina, and Michigan have distributed guides and kits that assist and encourage schools embarking on an implementation. Several states, including Florida, New Jersey, and Arizona, have sponsored statewide quality conferences that give schools and districts the opportunity to form networks and learn from others' efforts and successes.

Many states and organizations have encouraged districts and schools to adopt Baldrige. Illinois, Indiana, Maryland, New Mexico, Ohio, and Texas are part of the Baldrige in Education Initiative (BiE IN). This national initiative seeks to improve educational management and student achievement by accelerating the adoption of Baldrige. Its goals include (1) forging a national leadership infrastructure of key business and education organizations to align educational reform policies and successful practice and (2) helping states and communities to use Baldrige to lead and sustain long-term improvement efforts.

Detailed information and comprehensive data are the keys to fulfilling the promise of Baldrige. Although some information and data are now available, much more are required. As the literature reviewed for this report reveals, implementing Baldrige successfully involves a long-term perspective and a focus on changing core processes, especially teaching and learning. Training in Baldrige concepts and utilizing quality tools are essential, as is working together in diverse and dedicated teams toward common objectives. Leadership, particularly the principal's role, is crucial for success.

Successful implementations are not easy to achieve. Educators have found that utilizing accumulated data in decision making is difficult. Efforts to actually change the teaching-learning process are arduous and often unsuccessful.

Information about the effects of Baldrige implementation is limited. Very little empirical data exist that detail how, why, or in which contexts an implementation can succeed. Although training is considered critical, few specifics regarding training are provided. Outcomes and results are often reported with insufficient detail about what specifically changed and how outcomes were achieved.

Although often anecdotal, the results reported for projects that focus on quality improvements, TQM, and Baldrige are intriguing. However, these results are often provided with little explanation of how the information was generated and with little context for the actual implementation of core processes in the school or district. Given these findings and conclusions, there appear to be several recommendations for educators, policymakers, and researchers to consider.

Educators. There is clearly the need for more information and data regarding the efficacy of implementing Baldrige in K–12 education. Until such information and data are available, there may be value in involving districts and schools in Baldrige on an introductory or perhaps pilot level. One suggestion is:

- The eleven core values for the 2002 Education Criteria for Performance Excellence and the seven categories for education offer a useful paradigm to analyze, evaluate, and consider as the basis for the essential elements of school reform.

Policymakers. While difficult and complex, educational problems are not unsolvable, and the Baldrige Model offers policymakers and legislators several opportunities for consideration. For example:

- As an information-based model that focuses on numerous educational processes, Baldrige is compatible with many assessments, including those that are state and federally mandated.

Researchers. As outcomes are difficult to measure, focusing on core process change and improvement and linking those processes to outcomes is more manageable. One essential issue is:

- Empirical studies of Baldrige substantiating the available anecdotal reports are needed to legitimize the reported changes in performance, dropout rates, and other areas.

1

INTRODUCTION

In 1983, *A Nation at Risk* (National Commission on Excellence in Education) reported that American students were failing to learn critical knowledge and skills at all levels of the educational system and were being surpassed by students in every other industrial nation. These findings drastically changed American attitudes toward education. Worry and demands for change and improvement replaced complacency and confidence in the nation's educational system.

Since this landmark study, a significant number of educational efforts to raise student achievement have been initiated in the United States. Although often popular, few of these reform strategies have been successful and American school children continue to lag behind much of the world in educational achievement (Glasser, 1998; National Research Council, 1999; National Science Board, 1998; Sarason, 1990).

There is a likely range of reasons for the failure of educational reform since *A Nation at Risk* was published. Many attempted reforms have focused on outcomes, accountability, and local control, including site-based management, outcomes-based administration, charter schools, and privatization. More recently, many states have instituted high stakes testing as a way to force reform and accountability (Barton, 2001). What these movements have typically lacked are leadership, decision making based upon data and analysis, an understanding of educational institutions as interdependent systems, and an ability to change the culture of schools (Sarason, 1990). Reform has also failed because leadership changes often result in the abandonment of one effort in favor of another and the inability to focus primarily on changing teaching and learning (Detert, Kopel, Mauriel, & Jenni, 2000).

One education reform effort, with a primary focus on improving quality processes in the schools, has been slowly adapted from industry with some reported successes. Although not without controversy, efforts focused on improving quality based upon the Malcolm Baldrige Education Criteria for Performance Excellence may hold promise for fundamentally improving K–12 education. The Baldrige criteria address many issues that other, failed educational efforts have not—including leadership, systems thinking, changes in school culture, and data-driven decision making.

This policy report examines the information available on improving school quality through implementation of the Baldrige criteria. It provides a snapshot of what is currently known about the application and effectiveness of Baldrige criteria in K–12 education and is intended to:

- Provide useful information to educational practitioners, policy makers, and researchers about the concepts and current state of Baldrige applications in K–12 education.
- Make specific recommendations to each group regarding potential Baldrige K–12 implementation, evaluation, and research.

This report will initially provide an overview of the quality movement as it first emerged in industry and a description of the Baldrige Award process. It will then focus on the adaptation of the Baldrige Model, as well as similar quality processes, to K–12 education. Included will be discussions of Baldrige core elements and values as related to the educational process. The report will then describe the implementation of Baldrige, TQM (Total Quality Management), and quality processes in the schools, Baldrige studies, and current large-scale Baldrige efforts. It will conclude with a series of recommendations regarding Baldrige implementation, evaluation, and research for educators, policy makers, and researchers.

2

The Quality Movement

The quality movement in the United States began in the 1970s as American industry began losing ground to international competitors, particularly the Japanese. Many American goods were expensive and increasingly unreliable, while Japanese automobiles and electronics were of high quality and reasonable. This situation was attributed to increases in the quality of production and management implemented by Japanese business leaders (Bonstingl, 2001; Dobyns & Crawford-Mason, 1994). Ironically, this focus on increasing quality was American in origin but had been largely rejected by American companies after World War II because U.S. business leaders saw no need for improvement.

W. Edwards Deming, a native Iowan, was an acknowledged leader of Japan's quality movement following World War II. Although several others worked to develop and implement quality efforts[1], Deming received a majority of the credit and publicity. Japan's national award, The Deming Prize for Quality, is named after the expert who offered such valuable assistance in rebuilding.

The Deming approach is predicated on continuous improvement of work processes, which are the core operating functions of an organization (Bonstingl, 2001; Dobyns & Crawford-Mason, 1994; Hackman & Wageman, 1995). Deming believed that improving processes is the key to improving quality and that workers want to do their best work. Managers work with employees to gather information and implement process improvements. Instead of blaming individuals for errors, the focus is on improving the process that caused the error. Employees are provided with and encouraged to seek training and further education to assist in improving the production system and preventing errors. All leadership, management, and effort are directed toward ensuring quality through continuous improvement (Bonstingl, 2001; Dobyns & Crawford-Mason, 1994).

When Japan began to challenge American manufacturing superiority in the 1970s, Americans began to investigate how Japanese production and management methods could prove useful in this country. American manufacturers determined that Deming's practices were the foundation of Japan's business success and began applying the approach to American enterprise. From the early 1970s to the late 1980s, the quality movement gained momentum in the United States and became known as Total Quality Management or TQM[2].

Baldrige Award

The U.S. adoption of quality methods culminated in the establishment of the Malcolm Baldrige National Quality Award in 1987 (Dobyns & Crawford-

[1]Along with Deming, Philip Crosby, Armand Feigenbaum, Kaoru Isikawan, and Joseph Juran are other acknowledged leaders in the quality movement.

[2]Although many authors link Deming's work to TQM and use the terms synonymously (Bonstingl, 2001; Bradley, 1993; Brandt, 1993; Holt, 1993a; Rhodes, 1992; Schmoker & Wilson, 1993a), Deming himself never used the term and reportedly disliked it (Dobyns & Crawford-Mason, 1994; Holt, 1993b; Stelnikov, 1996).

Mason, 1994; Garvin, 1991; Karathanos, 1999; Seymour, 1994; Siegel, 2000). Named for the late Secretary of Commerce under President Reagan, the award was created in three business categories (manufacturing, small business, and service) with two possible awards each year (Garvin, 1991). The awards are based on a company's ability and approach to implementing criteria in seven categories:

- *Leadership*
  How senior leaders set values, directions, and performance goals.
- *Strategic Planning*
  How strategic objectives and action plans are developed and how progress is measured.
- *Customer and Market Focus*
  How customer expectations, preferences, and requirements are determined.
- *Information and Analysis*
  Examines information management and performance measurement systems.
- *Human Resource Focus*
  How the organization motivates employees and develops employee potential.
- *Process Management*
  Examines organizations' core processes, including product and service design, and delivery.
- *Business Results*
  Examines performance and improvement in key areas, including customer focus, product and service performance, and marketplace performance (National Institute for Standards and Technology, 2002a).

Curt Reiman of the National Institute for Standards and Technology (NIST), which oversees the award, drafted the categories and the scoring schemata. He purposely did not adopt a particular approach, but strove to incorporate aspects of several approaches while maintaining a focus on quality, data-driven decision making, and results.

Award applicants describe their processes and measurements for each of the seven categories and are assessed not on the quality of the products, but rather on the quality of the described processes (Garvin, 1991). Scoring is completed in two tiers. Applicants must score relatively well in each category to become eligible for a site visit by Baldrige examiners, who spend several days personally investigating each eligible company to determine the extent to which the described approaches for addressing the criteria have been implemented.

The President of the United States presents the prestigious award each year, with a great deal of fanfare, to industry leaders. Past recipients include Xerox, Motorola, and Cadillac. Although sponsored by the federal government, the award and the program are maintained, in large part, through applicant fees. The award has done much to raise the level of consciousness regarding the importance of quality in industry, which, in turn, has influenced the renewal of American manufacturing's competitiveness (Bonstingl, 2001; Dobyns & Crawford-Mason, 1994; Garvin, 1991).

3

Education and Baldrige

As business leaders were re-engineering corporate structures and focusing on high quality processes, the quality of American education was coming under increasing fire. Given the publicity the growing quality movement in industry was receiving, political, business, and education leaders began investigating the application of quality principles to education (Cedeño, 2000; Glasser, 1998; Kaufman & Hirumi, 1992; Sumberg, 2000). Although current estimates of schools or districts focusing on quality processes are difficult, by the mid-1990s 24 states had either included educational institutions in their state level quality awards or adapted the Baldrige criteria for applications in education (Horine, 1992; Johnson, 1996; Karathanos, 1999).

The National Malcolm Baldrige Education Criteria for Performance Excellence were piloted in 1995. Education was officially adopted in 1998 as a fourth category for the Malcolm Baldrige National Quality Award. Criteria for health care organizations were also adopted at this time, and health care is now the fifth Baldrige category (NIST, 2002c). The first two education awards were given in 2001 to the Pearl River School District in New York and the Chugach School District in Alaska (NIST, 2002e).

Core Elements in Applying Baldrige to Education

Many educators believe focusing on quality in schools greatly improves teaching, learning, and administration, and Baldrige specifically attempts to address these improvements (Blankstein, 1992; Bonstingl, 1992, 1993, 2001; Brandt, 1992; Dobyns & Crawford-Mason, 1994; Holt, 1993a&b; Karathanos, 1999; Rhodes, 1992; Schafer, 1996; Schenkat, 1993; Schmoker & Wilson, 1993a&b; Seymour, 1994; Siegel, 2000; Sumberg, 2000; Walsh, 2000). Although theoretically distinct, TQM, Deming's model, and the Baldrige criteria are often used interchangeably in the literature, making it at times difficult to report efforts tied solely to the Baldrige criteria. To further complicate matters, several authors have other, unique interpretations (Glasser, 1998; Harris & Harris, 1992; Kaufman & Hirumi, 1992). Some have noted this lack of definitional clarity and concluded that implementation quality could suffer as a result (Hackman & Wageman, 1995).

Deming's model and TQM are included in this review both because it is difficult to separate them in the literature and because they are both forerunners of the Baldrige criteria. Understanding these forerunners is important for understanding the genesis and growth of Baldrige. Even focusing on just these three models leads to multiple definitions and interpretations in the literature, though many core elements remain constant across the models.

The five most common core elements across the models (Betts, 1992; Blankstein, 1992; Bonstingl, 1992, 2001; Bradley, 1993; Brandt, 1993; Holt, 1993b; Kaufman & Hirumi, 1992; McNamara, 2000; Rhodes, 1992; Schafer, 1996; Schmoker & Wilson, 1993a; Siegel, 2000; Sumberg, 2000; Swan, 1996) are:

- Vision
- A focus on continuous process improvement through data collection and analysis
- A long-term perspective
- Conceptualizing the entire school as a system
- Emphasizing overall improvement of core processes rather than individual improvement

As shown in the following small example of a typical school process—accurately determining student attendance for both internal and externally-mandated reporting purposes—the focus on process improvement occurs in three steps:

- First, a school identifies and examines the current process being employed, such as how students who are considered to be absent each day are counted.
- The second step is to improve the process—for example, systematically not counting those students who were merely late as absent in the official attendance count (Abernethy & Serfass, 1992).
- The third step is to determine whether the improvement has actually had an effect—in this case whether the attendance rate increased or decreased (Brandt, 1993).

Several tools (e.g., Pareto charts, flow charts, checklists, histograms, and fishbone or Ishikawa diagrams) can assist educators in understanding various core processes (Satterlee, 1996). A Pareto chart, for example, graphically illustrates Joseph Juran's Pareto Principle: that as many as 80% of process problems result from 20% of causes. Whether an improvement has had an effect can be determined through several methods, including measurements, frequency counts, test scores, surveys, and interviews. The information desired determines the best method or methods.

Implementing quality programs—whether Deming, TQM, or Baldrige—infuses quality into core operating processes throughout an organization. In this review, those core operating processes in schools include the following:

- Teaching
- Learning
- Administration
- Operations
- Personnel

Staff are continually learning, collaboration and teamwork are the norm, and effort is directed toward meeting student needs and ensuring learning. School leadership provides the framework for the implementation, champions quality improvements, and supports staff and students (Blankstein, 1992; Bonstingl, 1992, 2001; Bradley, 1993; Brandt, 1993; Holt, 1993a; McNamara, 2000; Rhodes, 1992; Schafer, 1996; Schmoker & Wilson, 1993a; Summers, 1996; Walsh, 2000).

Baldrige Core Educational Values

The core elements are incorporated in the Baldrige criteria, which have been referred to as a framework or road map for implementing TQM (Karathanos, 1999; Seymour, 1994). In the Baldrige criteria, the core elements discussed above outline the main issues to address and are embodied in eleven core values (NIST, 2002b; Satterlee, 1996)—from which all methods, criteria, and measures in any implementation derive. These eleven values, as listed in the 2002 Baldrige Education Criteria for Performance Excellence, are:

1. *Visionary Leadership*
   Senior leadership sets direction and creates a student-focused, learning-oriented climate; clear and visible values; and high expectations.
2. *Learning-Centered Education*
   High developmental expectations and standards; a faculty understanding that students learn in different ways at different rates; an emphasis on active learning; early and frequent formative assessment; summative assessment when appropriate or required; student self-assessment; and a focus on transitions from school to school or school to work.
3. *Organizational and Personal Learning*
   Learning is: a regular part of daily work for students, staff, and faculty; practiced at all levels of the organization; focused on solving problems at their source; sharing knowledge throughout the organization; driven by opportunities to effect change.
4. *Valuing Faculty, Staff, and Partners*
   A commitment to faculty, staff, and partner satisfaction, development, and well-being.
5. *Agility*
   The capacity for faster and more flexible responses to the needs of students and stakeholders.
6. *Focus on the Future*
   An understanding of the short- and longer-term factors that affect organizations and the education market.

7. *Managing for Innovation*
   Emphasizes the importance of making meaningful change to improve the organization's programs, services, and processes.
8. *Management by Fact*
   Measures and indicators are selected to understand factors that lead to improved student, operational, and financial performance. These measures and indicators drive decision making.
9. *Public Responsibility and Citizenship*
   The belief that an organization's leaders should stress its responsibilities to the public and the need to practice good citizenship.

10. *Focus on Results and Creating Value*

    Performance measures should focus on key results that should be used to create value for students and stakeholders.

11. *Systems Perspective*

    Focuses on managing the whole organization, as well as its components, to achieve success (NIST, 2002b).

Evolving from these eleven core values are seven categories that schools and districts can use for self-assessments, Baldrige criteria implementations, and Baldrige applications. (They are also categories on which applicants for Baldrige Awards are judged.) The seven categories are:

- *Leadership*

  How the organization's senior leaders address organizational values, directions, and performance expectations, as well as a focus on students and stakeholders, student learning, empowerment, innovation, and organizational learning; how the organization addresses its responsibilities to the public and supports its key communities.

- *Strategic Planning*

  How the organization develops strategic objectives and action plans; how the chosen strategic objectives and action plans are deployed and how progress is measured.

- *Student, Stakeholder, and Market Focus*

  How the organization determines requirements, expectations, and preferences of students, stakeholders, and markets; how the organization builds relationships with students and stakeholders, and determines the key factors that attract students and partners and lead to student and stakeholder satisfaction and persistence and to excellence in educational services and programs.

- *Information and Analysis*

  The organization's information management and performance measurement system and how the organization analyzes performance data and information.

- *Faculty and Staff Focus*

  How the organization motivates and enables faculty and staff to develop and utilize their full potential in alignment with the organization's overall objectives and action plans; the organization's efforts to build and maintain a work environment and faculty and staff support climate conducive to performance excellence and to personal and organizational growth.

- *Core Process Management*

  The key aspects of the organization's process management, including learning-focused education design and delivery, key student services, and support processes. (This category encompasses all key processes and all work units.)

- *Organizational Performance Results*

  Student learning results, student- and stakeholder-focused results; budgetary, financial, and marketplace performance; faculty and staff results; operational effectiveness; performance levels relative to those of competitors, comparable schools, and/or appropriately selected organizations (NIST, 2002b).

These seven categories are then supported by 19 basic requirements, with 30 specific areas to address under these 19 requirements. (See Appendix 1 for a comparison of the Baldrige categories for business, education, and health care and Appendix 2 for further sources of information on Baldrige and other quality process implementations.)

Each institution is free to choose how to address each area, item, and category. Baldrige does not specify or prescribe a method for addressing the requirements, but addressing all is required. It is expected that institutions will decide how to address Baldrige categories, items, and areas within their own contexts. Institutions most often use the values and categories as a means of self-assessment and as an improvement guide (Garvin, 1991). Since many institutions often employ the criteria for self-assessment and improvement without necessarily applying for the Award, many more copies of the Performance Criteria are sent out than actual applications received (NIST, 2002d).

Criticisms in Applying Baldrige to Education

Many educators have criticized the application of quality principles to education as inappropriate. Much of the criticism has focused on applying a business model to education (Desjardins & Obara, 1993; Kohn, 1993; Schafer, 1996; Sztajn, 1992). Several aspects of the difficulty of translating business concepts and terminologies to education have been noted—and none more frequently than the term "customer."

Deming's work and TQM focus on satisfying customers. In education there are many kinds of "customers," and defining each of them is difficult (Kohn, 1993). While some define students as customers (Brandt, 1993; Holt, 1993a; Walsh, 2000), many educators strongly resist seeing students in this way and believe that students' wants may be quite different from students' needs (Chickering & Potter, 1993). Others see the student as equivalent to a worker (Schmoker & Wilson, 1993b; Siegel, 2000), student knowledge as the product, and education (teaching and learning) as the core operating process (Bonstingl, 1993).

Other business-to-education definitions can be challenging as well. In education, the "product" is not as tangible as it typically is in business. Education cannot be mass-produced; it must be an individual, student-centered process (Kohn, 1993; Sztajn, 1992). Because implementing a focus on quality requires data and data-driven decisions, critics fear that educators may focus solely on visible and measurable outcomes. These outcomes might include such things as achievement test scores, number of books read, percent of students completing assignments on schedule, absentee reduction, and number of college applications. Critics fear that too much emphasis on measurable performance factors may inhibit creativity and that factors such as a love of learning and the enhancement of curiosity—considered by many the most important outcomes of education—are in fact not measurable (Holt, 1993b).

4

Implementing TQM and Baldrige Strategies in Schools

Applying the Baldrige criteria is one method for implementing TQM (Karathanos, 1999; Seymour, 1994), though there are many other models for applying quality improvements and TQM within schools (Glasser, 1998; Harris & Harris, 1992; Kaufman & Hirumi, 1992). This section and the two following discuss the literature on (1) TQM and quality improvement implementations; and (2) Baldrige implementations.

Factors that contribute to the success and failure of such implementations are provided in as much detail as possible. Yet, despite the myriad interpretations and models, there are few empirical studies of the outcomes of quality improvement implementations, including TQM and Baldrige. Many published TQM and Baldrige articles, which often describe a single school or district implementation and some of the results these implementations have achieved, include surprisingly little detail. Others have reported similar findings in previous literature scans (Hackman & Wageman, 1995).

TQM and Quality Improvement

Whether using Deming's work, TQM, or a unique interpretation, quality improvement implementations have emphasized the ongoing, long-term nature of the process and the necessity of changing the way teachers, staff, and administrators think about teaching and learning. A mix of people from throughout the institution, occasionally including students, comprised schools' quality teams. The teams often included volunteers such as parents or community members and met regularly, usually once a month. Although training was important in most implementations, few details were included regarding what the training entailed. Training was often conducted in monthly meetings, weekend retreats, and summer institutes. Most schools set goals or addressed a specific process (such as attendance or dropout rates) and then gathered pertinent data and information using a variety of techniques. Finally, the commitment to quality was discussed throughout the school and the school celebrated successes, such as increased attendance or persistence (Abernethy & Serfass, 1992; Andrade & Ryley, 1992; Bayless, Massaro, Bailey, Coley, Holladay, & McDonald, 1992; Freeston, 1992; Harris & Harris, 1992; Hixson & Lovelace, 1992a&b; Rappaport, 1996).

One large user survey focused on the implementation of TQM (Horine, 1992). Fifty-eight districts utilizing TQM criteria in 25 states and Canada responded to the survey. Most had been using the criteria for two years or less. The implementation was focused on school administrators: they were the highest percentage receiving TQM training, and administration was the area most often using TQM principles and tools. Moreover, most districts tried to improve critical processes and followed a TQM implementation plan. The report, however, did not define the training, principles and tools, critical processes, or implementation plan.

Some schools reported significant change as a result of improving the quality of processes. One New Jersey district, which examined its high school student attendance process, increased the reported attendance rate from 86% to 92% simply by removing from the absent list students who were merely late (Abernethy & Serfass, 1992). An urban high school, with more than half of its students living in poverty and single parent homes, reduced class cutting by almost 40%. The number of failing students decreased from 151 to 11 in one year (Schmoker & Wilson, 1993a). These results were accomplished through a series of steps that included identifying causes, keeping statistical records, implementing student and parent contracts, and incorporating lunchtime peer tutoring. Neither the causes nor the statistical records were specified. During the second year at the same school, parental membership in the PTA increased dramatically from 12 members to 211. Parental quality training was also instituted, although the content of that training was not described (Rappaport, 1996). This same school reduced its dropout rate from almost 13% to 2% (Satterlee, 1996).

An elementary school that utilized teams to analyze achievement data and align the emphases of the curriculum across years increased fourth-grade reading scores almost 40%, sixth-grade reading scores almost 55%, and fourth- and sixth-grade math scores 28% and 65%, respectively (Schmoker & Wilson, 1993a). Specific details regarding team composition, analytical approaches, and the alignment strategy were not included in published reports. A small high school in Alaska with a high percentage of Alaskan Native students increased standardized test scores slightly, while sending almost 50% of its graduates on to postsecondary education (Schmoker & Wilson, 1993a). Prior to using TQM, only "very few" graduates went on to college.

Baldrige Initiatives

As with Deming's methods and TQM, the Baldrige criteria have been implemented successfully in K–12 education. Many Baldrige schools described implementation strategies similar to those employed by schools using Deming's quality methods or TQM. Continuous improvements of core processes with a long-term outlook were key components. Training, often in a retreat or summer institute format, was critical. Similar to the quality improvement and TQM implementations, teams were often utilized in these schools. Gathering information and data on school processes and outcomes was important for the implementations as well (Conyers, 2000; Howze, 2000; McNamara, 2000; Quattrone, 1999; Shipley & Collins, 1996; Siegel, 2000; Unger & Brunn, 2001).

However, there were differences from the previous descriptions of quality improvement and TQM implementations. The schools that focused on Baldrige often highlighted the significance of planning. Forming partnerships with businesses using Baldrige provided many schools with resources, such as facilities, access to technology, and knowledge of quality principles and quality

tools. Partnerships have also assisted schools with Baldrige training initiatives. Although few details were provided, school and community partnerships were another common implementation strategy (Conyers, 2000; Howze, 2000; McNamara, 2000; Quattrone, 1999; Shipley & Collins, 1996; Unger & Brunn, 2001). These Baldrige implementations reported some dramatic results.

Pinellas County Schools in Tampa is one large district that has implemented Baldrige criteria with much success (Shipley & Collins, 1996). Pinellas ranked very high in student performance for the state in 1998 after implementing the Baldrige criteria for several years. One elementary school in the district with a high mobility rate and large number of economically disadvantaged students raised (unspecified) test scores 20% in two years.

The Brazosport Independent School District in Texas has 40% students of color and more than a third of its students are economically disadvantaged. Despite these challenges, over 92% of students passed all state tests after the district implemented Baldrige criteria—an increase of 80% for specific schools. The district won the Texas State Quality Award and was successful enough with its Baldrige application to be selected for a site visit from examiners (Siegel, 2000).

The Missouri School for the Blind found the Baldrige criteria helpful for improving student performance (Howze, 2000). The school serves vision-impaired students in a residential setting and works in coordination with 525 school districts. The school's average ACT Assessment score increased from 17.5 to 21.6 in two years after implementing the criteria. No details were provided regarding the specific changes that fostered the increases.

Indian Hill School District in Ohio is a high-achieving suburban district (Quattrone, 1999). Rather than focusing on the 90% of the students passing statewide tests, Indian Hill sought to reach and improve the performance of the 10% who were not passing the test by individually assisting students in that subgroup. The school district also found completing the Baldrige application useful for self-assessment. Although Quattrone (1999) did not detail the district's achievement as a result of Baldrige, he did write that feedback from the application assisted the administration with identifying differences between the criteria and Indian Hill's processes, gave the district ideas for improvement, and assisted with phasing in activities.

Another school district with generally high performance saw benefits from implementing Baldrige (Conyers, 2000). In Illinois, School District 15 partnered with Motorola to focus on improvement. Motorola was the first Baldrige Award winner and provided knowledge and assistance in the district's implementation. Sixty-nine percent of the district's subject-area and grade-level scores increased based on results from the Illinois State Achievement Test. The test scores of English-as-a-second-language students also increased. In addition, the district began surveying students about their degree of satisfaction and enthusiasm, and levels of both increased in eight out of ten

(unspecified) areas. Staff were similarly surveyed, with equivalent results. The number of worker compensation claims as well as student and staff accident reports dropped, and library book circulation doubled.

New Jersey formed a statewide consortium to improve education through implementing the Baldrige criteria (Johnson, 1996; Quality Education New Jersey, 2002a). The consortium encouraged a business partnership model to provide knowledge and training in quality improvements, and went a step further by sponsoring state-level training workshops for districts that focused on implementing the Baldrige criteria.

Several New Jersey districts in the consortium increased student achievement after implementing Baldrige criteria. Warren Hills High School more than doubled the number of students taking Advanced Placement (AP) tests and increased the passing rate by 30% (Quality Education New Jersey, 2002b). Montclair School District narrowed the gap between scores of African American and white students on statewide fourth-grade language arts tests from 41% to 9% in two years. Manville High School increased the percentage of students passing the high school writing test 27% in four years (Unger & Brunn, 2001). In 2000, every student passed the assessment. Math scores increased from 90% in 1996 to 95% in 2000. Reading scores also increased. Seventy-four percent of students passed in 1995, but by 2000 the percentage was ninety-three.

The two 2001 winners of The Malcolm Baldrige National Quality Award in Education were Pearl River School District in New York State and Chugach School District in Anchorage, Alaska (NIST, 2002e). Pearl River is a suburban district of approximately 2,500 students outside of New York City. Chugach serves 214 students, half of whom are Alaskan Natives, in a 22,000 square mile area. Both districts reported major student achievement gains as a result of implementing Baldrige.

Pearl River achieved a 23% gain in students graduating with a New York State Regents diploma, while the rates for similar schools decreased (NIST, 2002e). The district "dramatically" increased the percentage of students taking AP courses while the percentage of students that passed the AP Examinations improved 42%. More Pearl River students were taking the SAT I than previously, the district's scores were above state and national averages, and 75% of the district's special education students took the exam, compared to 2% nationwide.

Given its geographical challenges, Chugach School District relied heavily on technology to reach students (NIST, 2002e). Chugach individualized instruction and worked with all constituencies, including parents, students, and community leaders, to develop five goals: (1) student learning and development in basic skills, (2) meeting individual needs of students, (3) character development, (4) transition skills, and (5) technological skills. Constituent satisfaction levels with achievement of the five goals ranged from 84% to 96% in 2001. Furthermore, the district increased its California Achievement Test scores in all areas between 1995 and 1999, and increased the national percentile scores in reading, language arts, math, and spelling an average of 39 points. The percentage of Chugach students passing Alaska's state high school graduation exams was higher than the state average in all three subject areas. Student use

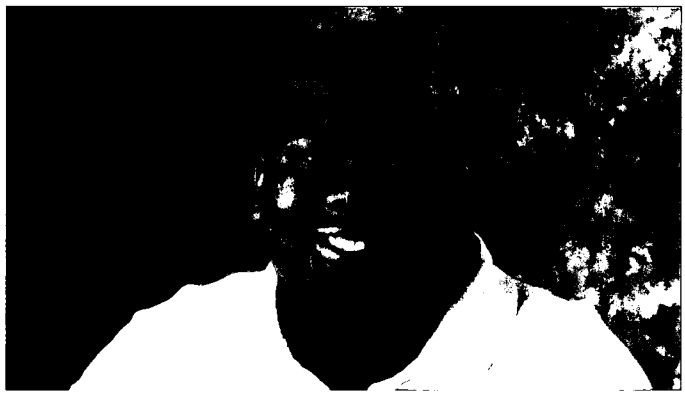
of the Internet increased from 5% in 1998 to 93% in 2001 (critically important given the district's geographical challenges). Finally, 70% of Chugach high school seniors took college admissions tests, a dramatic increase from 1998 when no students took the exams.

The preceding studies focused on outcomes tied to improving quality or implementing the Baldrige criteria. However, a central, critical goal of the quality movement has been to improve core processes such as attendance, retention, and, most important, teaching and learning. The articles and reported successes thus far have said little about how processes changed as a result of implementing quality improvements. This tendency to report and focus on outcomes instead of processes has been noted and criticized by previous researchers (Hackman & Wageman, 1995).

5

Baldrige Multiple Institution Studies

Two studies attempted to investigate process change across multiple institutions. The two studies surveyed school districts using the Baldrige criteria or other methods for improving quality to investigate implementation strategies and the extent of process change (Detert et al., 2000; Horine, Frazier, & Edmister, 1998). Although the studies had relatively small samples, both included urban, suburban, and rural districts of diverse sizes. Horine et al. examined leadership processes in districts strictly focused on implementing Baldrige. Detert et al. considered quality improvement implementation more broadly and focused on districts committed to quality improvements aligned closely with some of the work from Deming, Crosby, Juran, or Feigenbaum. Its purview included, but was not limited to, Baldrige and TQM and is included because it is one of the few well-designed, longitudinal, empirical studies found.



The 30 districts in the Horine et al. (1998) study had been working on implementing the Baldrige criteria for an average of 3.6 years, with 87% beginning their efforts at the district level. Senior administration was very involved and committed to Baldrige, and the majority of districts received training in continuous improvement principles. In most districts, a leadership team or council including administrators, teachers, and support staff focused on the implementation. Over 90% said they gathered input from various constituencies for the district's strategic plan, disseminated it widely, and aligned individual school goals to it. Most districts reported that employees were trained and engaged in implementing school goals, and all employees worked in teams. Although most districts reported a focus on improving processes such as teaching and learning, districts did not describe the plans or procedures for doing so; Horine et al. call this a "weakness," implying that the key educational processes of teaching and learning were unaffected. Nevertheless, 76% of the districts reported that student performance, including test scores, showed improvement with Baldrige.

The study further noted, however, that "a key weakness is the failure of schools to provide evidence of high performance levels, positive trend data, and comparisons with comparable schools" (p. 14). While this report provides much needed information on implementations in multiple districts, the authors acknowledge that more definition and substantiation are needed. Moreover, once again, insufficient information on actual core process change was reported. Despite these limitations, Horine and her colleagues believe that Baldrige has much to offer schools that desire improvement.

Detert et al. (2000) also believe that improving the quality of core processes, specifically teaching and learning, holds much promise for improving education. They studied ten high schools over four years using both quantitative and qualitative methods. They found that state-mandated assessments often prompted a focus on quality and concluded that such tests can complement a focus on improving the quality of school processes.

Overall, the data showed a low to moderate level of implementation by teachers (Detert et al., 2000). Approximately 50% of survey respondents indicated that continuous improvement was part of their school or district plan. In interviews, however, teachers spoke of improving the quality of processes as a task separate from their teaching. When improvement efforts were made in classrooms, teachers often focused on discipline and classroom management processes rather than on improved teaching and learning. Moreover, districts collected substantial data on many of their core processes, which should have been used to guide decision making. Yet, because little systematic data analysis and reporting of that data occurred, teachers reported making decisions based on intuition, not data. This result was similar to a previous finding that data-driven decision making was often missing in changes focused on improving quality (Hackman & Wageman, 1995). In schools where process quality improvements were affecting teaching and learning, such improvements were most often championed by the building principal and included in teacher evaluations.

Training was a major obstacle in implementation because schools and districts rarely provided "consistent and continuous" training (Detert et al., 2000). Most districts lacked sufficient resources for professional training that accommodated teacher schedules. Furthermore, many districts made what training was available voluntary for the teachers and scheduled it after school, which dampened participation. However, where business partnerships existed, training was more substantive and effective.

The authors of both studies believe that focusing on improving the quality of processes and the Baldrige criteria hold a great deal of promise for improving public education (Detert et al., 2000; Horine et al., 1998). Although both studies were relatively small, they systematically and substantively began to investigate the methods by which these improvement efforts were undertaken and the effectiveness of such efforts, providing much needed information. While many details were unavailable, as Baldrige implementations become more widespread and are the focus of additional research, the contributions and limitations should become clearer. The current focus on improving the quality of processes and implementing the Baldrige criteria is still far from widespread. However, these activities are beginning to make inroads in many areas of the country.

6

Recent Large-Scale Baldrige Efforts

Of the 16,000 public school districts in the United States, only a few—approximately 200 as of the mid 1990s—were using TQM techniques or Baldrige criteria (Detert & Jenni, 2000; Horine, 1992). Following the establishment of the Baldrige Award for Business in 1987, Baldrige began to transfer to education in two ways. The first began when some districts began to translate and apply the criteria, such as Pinellas County Schools did, in their own organizations (Shipley & Collins, 1996). The second application of Baldrige to education gained strength as states began to include educational institutions in the eligibility for state quality awards based on the criteria (Johnson, 1996). In part because of state level awards, a 1992 survey found that 65 K–12 institutions had been working on TQM implementations for more than a year (Horine, 1992). By the mid 1990s, 24 states included schools and universities in the competition for awards (Karathanos, 1999).

States have involved schools in Baldrige in different ways (Johnson, 1996). New Mexico, Tennessee, North Carolina, New York, Florida, and New Jersey have provided statewide support and specific initiatives that encourage the use of Baldrige in schools. North Carolina's partnerships with businesses encouraging Baldrige implementation in schools have incorporated 45 districts and 70% of students statewide (Siegel, 2000). North Carolina's plan focuses on high student performance; safe and orderly schools; quality teachers, administration, and staff; and efficient operations (National Alliance of Business & American Productivity & Quality Center, 2000). New Jersey's statewide consortium has encouraged implementation of Baldrige criteria (Johnson, 1996; Quality Education New Jersey, 2002a).

New Mexico and Tennessee have generated interest in Baldrige by creating multi-tiered state-level awards. Tennessee's award has had four levels, the first two designed to encourage beginners (Johnson, 1996). Schools simply showing an interest in adopting Baldrige can be eligible for the first level of award in Tennessee. The second-level award goes to schools demonstrating commitment; such as completing a self-assessment. Schools are not required to demonstrate improvement until the third and fourth levels.

Both New Jersey and North Carolina have encouraged partnerships between businesses and schools to assist with a Baldrige adoption (Johnson, 1996; Quality Education New Jersey, 2002a). Businesses have trained school personnel in quality management principles and tools, and often provided resources such as materials, facilities, and technology. In a similar vein, New Jersey and New Mexico have offered training sponsored by the state quality organization. These sessions can be advantageous because they can offer ongoing training specific to education and educational issues and can lend assistance with state-level applications.

New Mexico, North Carolina, and Michigan have distributed free guides and kits that assist and encourage schools embarking on an implementation (Johnson, 1996). Several states, including Florida, New Jersey, and Arizona, have sponsored statewide quality conferences that give schools and districts

the opportunity to form networks and learn from others' efforts and successes. Prior to the publication of national criteria for education, New York, North Carolina, and Rhode Island converted the business terminology and references to educational terms and references to make it "friendlier" to educators. Although few details were available regarding the translation, education-friendly language was critical because of the criticism regarding the adoption of a business model to education. Applications for state-level awards have entailed payment of fees used to support the programs. There is concern that fees could prevent schools and districts from applying, particularly small or poor institutions. At present, Maryland and Rhode Island waive application fees to encourage applications from schools.

Six states—Illinois, Indiana, Maryland, New Mexico, Ohio, and Texas—are part of the Baldrige in Education Initiative (BiE IN) (Siegel, 2000). BiE IN is a partnership of 26 national education and business organizations, six state pilots, and growing numbers of states and communities that are using Baldrige to raise student achievement. Managed by the National Alliance of Business and the American Productivity & Quality Center, BiE IN aims to transform American education into a high performing system (Baldrige in Education Initiative, 2002). This national initiative seeks to improve educational management and student achievement by accelerating the adoption of Baldrige (NIST, 2002d). Three strategies guide the effort:

- Forge a national leadership infrastructure of key business and education organizations to align education reform policies and successful practice.
- Help states and communities use Baldrige to lead and sustain long-term improvement efforts.
- Provide targeted products and services to key stakeholders engaged in implementing Baldrige-based improvement efforts (Baldrige in Education Initiative, 2002).

Many states and organizations have encouraged districts and schools to adopt Baldrige. Those involved in these efforts, certain that such adoptions can dramatically improve education and educational outcomes, are working to ensure the spread of Baldrige throughout their states and the entire nation.

7

A Model with Promise

Detailed information and comprehensive data are the keys to fulfilling the promise of Baldrige. Although some information and data are now available, much more are required. As the literature reviewed for this report reveals, implementing Baldrige successfully involves a long-term perspective and a focus on changing core processes, especially teaching and learning. Training in Baldrige concepts and utilizing quality tools are essential, as is working together in diverse and dedicated teams toward common objectives. Leadership, particularly the principal's role, is crucial for success (Abernethy & Serfass, 1992; Andrade & Ryley, 1992; Bayless et al., 1992; Detert et al., 2000; Dinklocker, 1992; Freeston, 1992; Harris & Harris, 1992; Hixson & Lovelace, 1992a&b; Rappaport, 1996).

Successful implementations are not easy to achieve. Educators have found that utilizing accumulated data in decision making is difficult (Hackman & Wageman, 1995; Detert et al., 2000). Efforts to actually change the teaching and learning process are arduous and often unsuccessful. Failing to use data in decision making and not changing teaching and learning are two reasons why many reform efforts do not succeed. For the potential of Baldrige to be realized, it is critical to address these two areas.

Information about the effects of Baldrige implementation is limited. Very little empirical data exist that detail how, why, or in which contexts an implementation can succeed. Although training is considered critical, few specifics regarding training are provided (Abernethy & Serfass, 1992; Andrade & Ryley, 1992; Bayless et al., 1992; Dinklocker, 1992; Freeston, 1992; Hixson & Lovelace, 1992b; Horine, 1992; Rappaport, 1996). Outcomes and results are often reported with insufficient detail about what specifically changed and how outcomes were achieved (Conyers, 2000; Howze, 2000; NIST, 2002e; Quality Education New Jersey, 2002b; Quattrone, 1999; Shipley & Collins, 1996; Siegel, 2000; Unger & Brunn, 2001).

Recommendations

Since the publication of *A Nation at Risk*, many education reform models have been touted, adopted, and abandoned, but little actual change in teaching and learning appears to have occurred. Although largely anecdotal, the results reported for projects that focus on quality improvements, TQM, and Baldrige are intriguing. Regrettably, these results are often provided with little explanation of how the information was generated and with little context for the actual implementation of core processes in the school or district. Given these findings and conclusions, there appear to be several recommendations for educators, policymakers, and researchers to consider. Although categorized by potential primary interest group, many of the following recommendations bridge the domains of all three constituencies.

Educators. There is clearly the need for more information and data regarding the efficacy of implementing Baldrige in K–12 education before many would feel comfortable with complete implementation of the model. Until such information and data are available, there may be value in involving districts and schools in Baldrige on an introductory or perhaps pilot level. We say this principally because the criteria appear to provide much promise for improving education in a comprehensive, data-driven, and fact-based manner. This report, then, offers practitioners several suggestions toward this intermediate goal:

- The eleven core values for the 2002 Education Criteria for Performance Excellence and the seven categories for education offer a useful paradigm to analyze, evaluate, and consider as the basis for the essential elements of school reform.
- As training in Baldrige principles is crucial, many educators can secure the assistance of businesses that are focused on quality improvements to help them understand and carry out the training aspects of this model.
- Leadership should come from both district-level and building-level administrators who can work to understand, advocate, and implement the Baldrige criteria in systematic and systemic ways.
- An important and common Baldrige implementation strategy is to form and work in diverse and dedicated teams, especially those including various district and school constituencies.
- To change teaching and learning, principals can consider including elements of Baldrige implementations in teacher performance expectations.

Policymakers. Improvement efforts that may require years to demonstrate their efficacy are often problematic in environments of short-term accountability. While understandable, changing deeply-embedded teaching and learning practices takes time. Reform efforts that promised substantial returns quickly have failed in the past decades (Sarason, 1990), making American educational problems seem intractable (Glasser, 1998; Karathanos, 1999; Schafer, 1996; Siegel, 2000; Sumberg, 2000; Summers, 1996). While difficult and complex, educational problems are not unsolvable, and Baldrige offers policymakers and legislators two major potential benefits:

- It is a holistic, systematic, and systemic course of action based upon the principles of accountability and data-driven decision making.
- As an information-based model that focuses on numerous educational processes, Baldrige is compatible with many assessments, including those that are state and federally mandated.

Researchers. Outcomes are difficult to measure, and attributing those outcomes to one specific change in a complex organization is virtually impossible (Hackman & Wageman, 1995). Focusing on changing and improving core processes and linking those processes to outcomes is much more manageable. Such research, properly designed and conducted, could provide needed information and direction for educators and policymakers. Many factors may affect schools and the results they report. Essential issues for researchers that can guide implementation policies and structures are:

- Empirical studies of Baldrige substantiating the available anecdotal reports are needed to legitimize the reported changes in performance, dropout rates, and other areas.
- Substantive studies are needed to increase the understanding of similarities and differences in implementing Baldrige criteria across a range of schools and districts.
- Well-designed, comparative, longitudinal research is needed to enhance and further the understanding and implementation of core educational processes, especially teaching and learning.

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Appendix 1

Comparison of Seven Baldrige Categories for Education, Business, and Health Care

Education	Business	Health Care
Leadership	Leadership	Leadership
Strategic Planning	Strategic Planning	Strategic Planning
Student, Stakeholder, and Market Focus	Customer and Market Focus	Focus on Patients, Other Customers, and Markets
Information and Analysis	Information and Analysis	Information and Analysis
Faculty and Staff Focus	Human Resource Focus	Staff Focus
Process Management	Process Management	Process Management
Organizational Performance Results	Business Results	Organizational Performance Results

Appendix 2

Web-based Information on Baldrige, TQM, and Other Quality Programs

- Information on items, areas to address, and copies of the criteria may be found on the National Institute for Standards and Technology (NIST) URL: http://quality.nist.gov
- Information and resources on implementing quality initiatives can be obtained from the American Productivity and Quality Center (APQC) URL: http://www.apqc.org
- Information on the Baldrige in Education Initiative (BiE IN) URL: http://www.biein.org
- Information on the American Society for Quality (ASQ), which publishes several journals devoted to quality practices, URL: http://www.asq.org

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