
I N T R O D U C T I O N

AN EDUCATED NATION

Knowledge in any country is a national resource. Unlike rare metals, which can not be replaced, the supply of knowledge in any field can be increased by education. Education may be formal, as in school. It may be informal, by study at home or on the job. It may be supplemented and rounded out by work and review under a master.

—W. Edwards Deming, *Out of the Crisis*

The United States of America has experienced a slow but definite decline in its global economic and political influence, a decline that has occurred in concert with another disturbing trend: the decreasing abilities of U.S. high school and college graduates. Especially at the elementary and high school level, U.S. education suffers in comparison with many other industrialized nations. Evidence shows that students in this country have less factual knowledge, cannot reason as well, and are less aware of the current world around them than their counterparts around the globe. As only one example, many eighth graders in Japan are reportedly more fluent in mathematics than graduates of some

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U.S. business schools.¹ This state of affairs has evolved while expenditures per student in public schools more than tripled from the 1949–1950 school year to 1985–1986.²

The link between this nation's decaying educational system and our declining global influence may be only tenuous, but the total downward trend is not entirely coincidental. Industry and government have been forced to institute costly remedial education and training programs to bring graduates up to minimum levels of performance. In addition to the significant up-front cost of administering such programs is the hidden cost of lost opportunity from the time these individuals are in training and not doing productive work. This situation has saddled both the private and public sectors with a competitive disadvantage that our industrialized neighbors do not share.

It is certain that mediocre education, by producing workers who are inept, has contributed to the crippling of U.S. industry; industry, though, has contributed its share to the decline of education in this country. By investing as little as possible of its own money in research, innovation, and improvement—thereby maintaining a status quo—industry has implicitly shown that increased and improved knowledge is only marginally desirable. And by relying more and more heavily on corporate mergers, leveraged buyouts, and hostile takeovers to boost profits—rather than actually producing valuable goods and services—industry has sent the message that clever manipulation rather than true innovation is the key to success.

The debilitating effects of poor education have also shown up far from the factory floor and corporate boardroom. There is a tendency to point to such phenomena as the crack houses and gang warfare that have entered even small-town life in the United States, the rising numbers of teenage pregnancies and abortions, and the alarming numbers of suicide attempts among young people as further evidence of the decay of our educational system; but to lay all of these problems on the head of education is certainly to find a scapegoat to bear the blame for our societal transgressions. Poor education may have exacerbated some of these problems, but it did not cause them.

For much of the 1980s, educators, parents, and students were bombarded with educational “reforms” designed to foster excellence in education. This move toward quality, or excellence,

in education gathered momentum late in the decade but actually started long before the much-heralded publication of *A Nation at Risk* or the activities of the National Commission on Excellence in Education.³ Many states and municipalities started local reform movements designed to improve school conditions and instruction, but the results of these efforts were mixed, and they were not coordinated enough to effect change on the national level. The collective results of these isolated programs prove that national change will be required to complete the educational transformation; while this became clear in 1989, the resulting Education Summit only served to perpetuate negative elements of the existing system.⁴

We are essentially ignorant about our own educational system and are unfortunately doomed to remain so. We can never know how many students have been shamed into submission by competition, grades, and class ranking, or how many will blossom when these external motivators are replaced by joy in learning. We can never know what revolutionary answers to today's problems are lost forever in the murky depths of poor self-esteem, or what innovative solutions will come from students and teachers whose confidence and self-image are reinforced by parents and administrators. We can never know how much tax money has been spent in futile attempts to correct the failures of the educational system—that is, those “failures” who walked out of the schools having been robbed of the chance at a good education⁵—or how much will be saved by investing in education and its continuous improvement.

Those who hope to lead the education transformation (and by this I am referring to you, the reader) must recognize the elusive nature of these figures. They are among the “unknown and unknowable” figures that are most important to the task of leadership and change.⁶ (Of course estimates of the figures may be generated, but such estimates are only useful when we all agree on how they are derived. Still they only serve to call attention to the problems, not to produce useful solutions.) As leaders of the transformation process, we must focus on improving quality in education, knowing it will stimulate successive improvements in every area of life. In the end it will not be necessary to quantify how much the education transformation has accomplished, because we will realize our purpose is not to look backward at where we have been but to look forward to the next improvements we can make.

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The desirability of quality in education is rarely debated; no school operates on the assumption that it will provide a poor education.⁷ Payoffs of improving educational quality will be many. Students will experience joy in learning, and more will graduate. Teachers will enjoy improved self-esteem and status. Graduates will possess skills valued by their employers; they will be able to learn their jobs quickly, participate in quality improvements in the workplace, and keep up with rapid changes in technology. The literacy rate of the country will rise, resulting in improved communication and understanding between elements of our diverse population. It is entirely possible that the United States will experience a renaissance (or perhaps a reformation) that will carry it into the twenty-first century.

COMPETENCE

In the process of applying the quality philosophy to education, we will pay a great deal of attention to the external customers of education. While their specific needs are not exactly the same, we may divide those needs into groups of skills employees must have to thrive on the job (see Chapter 3). In short, employers want to hire workers who are competent, that is, employees who can analyze and solve problems, work effectively in teams, and decipher and retain complex concepts. Their competence may be specific to a job or task, but more likely will be general and exhibit the ability to be trained in specific areas.⁸ Quality education, by providing a sound curriculum of communication, analytical, and human-relations skills, assures that graduates will become competent employees.

As mentioned previously, U.S. businesses and government are spending tremendous amounts of money and time training and retraining young employees—people who have recently graduated from school as well as young people who have entered the workforce without graduating. While the quality emphasis will not remove the need for specialized training, it will give new workers a wide range of skills that will make their training easier. Fewer remedial programs will be needed; thus employees' time will be spent more effectively as they learn job-specific knowledge and skills. In addition, quality education can instill in students the

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ability to press on toward higher levels of knowledge by providing a modicum of challenge rather than intellectual pabulum. The ability to learn effectively will continue to be important throughout graduates' work careers.

Besides basic skills graduates will carry into the workplace, they will bring other important traits that have been reinforced by the quality ethic. Improved ability to work effectively in groups toward successful completion of projects will have been carefully nurtured by relevant team problem-solving exercises and will help employees whether they work on a production line or in a staff office. The new cultural recognition that all elements of the organization work together toward the ultimate aim of the group will enable employees to participate freely in the optimization of the entire organizational system. Strong self-esteem will give employees the ability to suggest changes and improvements with less fear. These factors will spur continuous improvement and subsequently enhance productivity in our service and manufacturing industries.

In order to effectively prepare graduates for life-long careers, education must have comprehensive guidance from the business community. Clear and continuously updated statements of need from industrial (including service and manufacturing) organizations will help the educational establishment prioritize the needs of industry. Symposia that bring together educators, corporations, and the government (for example, the annual symposia on *The Role of Academia in Total Quality Management*) could provide this feedback regularly, but their focus must be carefully considered. Academia must not allow itself to be led by the nose by business, but neither may it remain cloistered in its hallways. The sometimes adversarial relationship between education and industry must turn to collaboration and cooperation.

TECHNOLOGICAL AND TECHNICAL EXPERTISE

Many students who choose to pursue jobs and careers in technical fields will find their disciplines changing rapidly as soon as they enter them. As discussed in Chapter 7, changes over which they have no control can create strong emotional reactions in people. Effective preparation for these inevitable technological changes is necessary for psychological survival in the modern world.

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Quality and excellence in education will help students comprehend the complex technological world and prepare them to keep up with it. Students must be exposed to technology first-hand, in such a way that they are not awed by it but appreciate and have control over it. Part of the curriculum proposed by many reformers is a course in computer science, in which students learn to understand and use this valuable tool. The use of new technological learning tools is one way to introduce students to technology, but the tools themselves cannot guarantee quality education. A number of industries have turned to expensive and complex machinery to save them, only to find that the devices were not the saviors they thought; education must not make this same mistake.⁹ Another good way to expose students to technology is to involve local businesses and utilities in the educational experience through field trips and other exchanges.

Through careful exposure to the technical and social aspects of science and technology (beyond the color television and the compact disc player), students will improve their ability to cope with future advances. Social aspects cannot be ignored; special effort should be made to give students opportunities to consider how improvements in technology have affected previous eras. This is a prime topic through which history, science, and sociology classes may be correlated. By studying how these changes affected previous generations, students will be more able to control their reactions to them. Quality education will introduce students to the excitement and wonder of technology through relevant and personal contact, laying a foundation by which they can find new approaches to and uses for it. Technical expertise and the general competence already discussed form a synergistic whole; because education will give students the intellectual tools they need to keep learning after they leave school, the quality transformation will tend to reduce the crisis of technological obsolescence.

THE INFORMED POPULACE

In a nation where a large variety of culturally distinct populations live and work together, the ability of the different groups to understand and communicate effectively with each other is absolutely essential. Misunderstanding and miscommunication

only breed intolerance and hatred, while their opposites make peaceful coexistence at least possible. As E. D. Hirsch and his associates at the University of Virginia have argued, consistent treatment of basic knowledge topics can improve everyone's ability to communicate effectively.¹⁰ Adoption of a standard curriculum like that presented in Chapter 5 would give all students a common set of references and improve their abilities to communicate with other members of society.

In this nation, the majority of the power is supposed to be vested in the hands of the people; therefore, it is vitally important that the people know what issues are at stake when they vote. Participation in a democracy certainly requires active citizen involvement; it also requires citizens who understand each other not only in present situations but in light of their history and future possibilities.¹¹ We cannot hope to develop a concerned, active, and effective citizenry without developing an informed populace. Respect for all segments of the population must be cultivated if decisions are to be made that do not arbitrarily harm or short-change any group. Citizens who are intimately familiar with the problems facing society and respectful of the impact of possible solutions on their neighbors will be better able to make appropriate decisions about how to vote on critical propositions and whom to elect as their leaders. The depth of understanding required for this decision making is usually beyond the scope of television; it must be addressed in the schools.

Based on these factors, one positive outcome of improvements in education will be a steadily rising literacy rate throughout the nation. Popular opinion is that the proliferation of television works against such a development, since the visual image has largely replaced the need for reliance on the printed word. Recent scholarship, however, suggests this may not be as much of a factor as once thought.¹² It is nevertheless chilling that increased literacy—the ability to comprehend the written word—might be wasted on a population with easy access to such powerful visual stimulation. (Focusing on the intellectual effect of television, of course, does not even begin to address its moral, social, or emotional impacts.) We must nevertheless work for improved literacy, hoping that increasingly literate adults and children will seek and find enjoyment in newspapers, magazines, and books that stimulate deeper thought and imagination than the shallow television image.

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It would indeed be significant if U.S. citizens delved deeper into political issues than we presently do, instead of relying on the mud-slinging or self-aggrandizement of campaign commercials. Careful perusal of the candidates' political platforms, ideologies, and experience would provide voters with particularly acute insight, as candidates who present themselves as leaders might be exposed as puppets controlled by the political machine. In addition, honest consideration of both sides of controversial issues would open the door to improved communication and eventual solutions.

Other areas of life would certainly benefit from increased literacy. Citizens who better understand the vagaries of the nation's economy, as well as the implications of economic situations such as the rising national debt and trade imbalance, would be able to understand the need for restraint in consumerism, the importance of savings, and the benefits of a long-range outlook. Citizens who understand the inherent difficulties in developing alternative sources of energy might be convinced to save oil and reduce pollution by driving more fuel-efficient automobiles, instead of mindlessly screaming at petroleum and other corporations over environmental accidents. Citizens who take the time to read in detail of the atrocities of U.S. slavery, Communist purges, Nazi death camps, and South African prisons might be more inclined to work for the basic rights of all people rather than their own special segments of the population.

Besides basic literacy, a quality education that provides people with the means to assess and construct their own values (discussed in Appendix C) will give the populace an important tool of discernment: skepticism. If citizens can learn to dig deeper into issues rather than accepting them at face value, their ability to divine the kernel of truth and choose their own position accordingly will be greatly enhanced. The trick will be to instill healthy skepticism without it turning into cynicism.

LIFETIME EDUCATION

Each of the three areas we have discussed (job competence, technical expertise, and an informed citizenry) points to education that does not terminate with a diploma. It is no longer

enough for the youth of the nation to receive only a quality initial education.

But why should adults continue to learn? The question, while basic, is not as naive as it sounds. Besides the internal enjoyment and fulfillment of learning new things, external factors provide some impetus for continued education (for example, as discussed previously, the rate at which current technology and knowledge is progressing presupposes the need for education throughout one's lifetime, just to keep up). Many people still perceive life as a series of stages in which the first stage is for learning, the second stage for working, and the third stage for playing (that is, retirement). To achieve fulfillment in one's life, it is necessary to combine learning, working, and recreation throughout life.¹³ Quality education provides a foundation for the continued education that is essential to personal and professional fulfillment.

Continuing education (alternately called *adult education*, *informal education*, *postsecondary education*, *recurrent education*, and a host of other names¹⁴) has its own special problems, separate from education in general. Teaching adults can be both easier and more difficult than teaching children. Adult education is easier because many have made a conscious choice to participate and are motivated to learn for one reason or another; the same may not be true of young people who are required to attend school. Difficulty in teaching adults often arises because they have developed more or less concrete ideas about the world from their previous experience, which teachers have less chance to affect; this is why many teachers prefer working with younger students and why teaching young people offers its own unique challenges.¹⁵ Lacking the skepticism of adults, young people can often be swayed by whatever they are taught, regardless of its merit.¹⁶ In contrast, there are obstacles from the beginning when teaching adults, especially when the material challenges some of the students' ideas or prejudices. I have found this to be especially true with emotional or controversial issues.¹⁷

As with initial education, continuing education suffers from disagreement over its purpose. As you will discover when we consider the meaning of quality in education (Chapter 3), we will consider only briefly its philosophical purpose, instead concentrating on the practicality of pleasing education's customers. When we do, you are encouraged to consider who the customers of

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continuing education are and how they are affected by what the student learns.

The quality transformation in formal schooling will greatly improve the prospects for continuing education. Once students go through school experiencing joy in learning, they will want to continue learning throughout their adult lives. The transformation of educational operations should also extend to continuing education, providing a favorable learning experience for students whether they are 16 or 60.

MEETING THE CHALLENGE

Looking far ahead to the benefits we expect to reach is important; it gives us a reason to continue working. But we must also look critically at the situation as we find it to understand it completely and propose meaningful solutions.

The education community is steeped in paradigms (of school structure, curriculum design, professional relationships, and other aspects of the educational process) that have become entrenched in the education establishment over many years (see Appendix B). Paradigms are unwritten rules, generally accepted and rarely questioned throughout a field, that define the boundaries of the field and explain how to be successful within the boundaries.¹⁸ The paradigm is a powerful force for solidifying approaches to problem solving in a field, but changes in the operational environment can render old paradigms obsolete.

In many schools across the United States, educators are meeting the challenges of today's educational needs with a new paradigm: the quality philosophy. They are using quality improvement methods to improve administrative functions and the learning environment, and are teaching the quality philosophy and allowing their students to apply its principles to their activities.¹⁹ The resistance they have encountered is only slowly being overcome as more educators learn about the power of the new quality paradigm to improve their schools.

This book will introduce you to the quality philosophy and explain how its new paradigm can transform education to better meet the needs of our nation. If you are a teacher or administrator caught in the middle of reform efforts, this book will give you a

clearer picture of the systems within which you work and the paths to improving the systems. If you are a parent, student, or businessperson concerned about education, this book will give you a better understanding of your role in the system and how you can contribute to continuous improvement.

If you are looking for a cookbook to follow as you transform your school, you should look elsewhere; no easy-to-follow recipes for success are included. This book is a guide to the quality philosophy, a book of theory intended to introduce you to the new educational paradigm and prepare you to take a leadership role in the transformation.

OVER THE HORIZON

What changes will improving educational quality bring to life in these United States? Possibly, the advent of quality in education and the incalculable improvement in attitude toward learning and school may spark a resurgence of community life. In the same way that local lyceums were centers of intellectual life in nineteenth-century communities (see Appendix B), today's local schools and community colleges (in addition to libraries, museums, auditoriums, and theaters) may bring more people together to learn and grow. Whether or not a new forum for public learning develops, it is almost certain that the transformation of education will deeply affect U.S. life. The relations between segments of society will be improved, removing fears of hatred and prejudice; many obstacles to personal fulfillment will be removed, and more citizens will finally have the chance to secure the Jeffersonian dream of freedom and happiness; better understanding of the social and political structures of the country will lead to more meaningful public discourse on important issues affecting the entire populace.

Our hope must not be blind, however; we must not fall into the familiar trap of "proclaim[ing] salvation through education" and so neglecting other problems we face.²⁰ While we recognize that many problems plague our nation, problems that must be addressed soon but will not be quickly solved, we must also recognize that quality education is the foundation upon which much of the future of this nation will be built.

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But what impetus do we have to enact the changes that the educational system requires? We may be lacking a critical ingredient of change: a clear and coherent vision of the future of our nation. If it is true that "major changes in educational institutions follow major changes in society's future aspiration,"²¹ then we need to examine critically what our vision for the future is. If in our vision the United States is strong, prosperous and at peace with itself, education must lay a solid foundation upon which that future may be built. With this in mind, let us examine the quality philosophy and how it may help us reach our vision of the future.