



THE TRAGEDY OF OUR TIMES

BY PETER SENGE

Gordon Brown, former dean of the MIT School of Engineering, used to say, “To be a great teacher is to be a prophet—for you need to prepare young people not for today, but for 30 years into the future.” At few times in history has this admonition been more true than it is today. Yet, if we look at the process, content, and achievements of public education, can any of us be confident that we are preparing young people well for the future they will live in? Are we contributing to the capabilities of a 21st-century society to govern itself wisely, to prosper economically and culturally, to generate insight into pressing problems, and to build consensus for change?

A system of public education inevitably rests on public consensus regarding the skills, knowledge, and attitudes that will be needed by future citizens. Today, I believe our traditional consensus regarding the goals and processes of public education leaves us dangerously vulnerable in a world of increasing interdependence. We have all been taught to break apart complex problems and fix the pieces. Our traditional education process—indeed, our theory of knowledge in the West—is based on reductionism, fragmenting complex phenomena into component parts and building up knowledge of the parts. Moreover, our traditional system is based on competition and individual learning.

This process starts in elementary school and continues through the university, getting worse and worse the further one “progresses” in higher education. Literally, to be an expert in our society is to know a lot about a little. Such an educational process can never lay a solid foundation for understanding interdependency and for fostering genuine dialogue that

integrates diverse points of view.

Concern today with public education focuses on achievement relative to traditional standards. But the real problem lies with the relevance of the traditional standards themselves. Preparing citizens for the future with

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the skills of the past has always been the bane of public education. Today, it could be the tragedy of our times.

A Leading Edge of Change

Given the profound changes unfolding around us, it is not surprising that we are witnessing a massive breakdown of traditional institutions worldwide. In a world of increasingly rapid change and growing interdependence, large, centrally controlled organizations have become virtually ungovernable. The Soviet Union, General Motors, and IBM, one-time paragons of power and control, all suffered massive breakdowns in the 1980s. The fundamental problem became the management system itself—the inability to effectively coordinate and adapt in an increasingly dynamic world, to push decision-making to the “front lines,” and to break up power blocks committed to self-interest over common interest.

The breakdown in our traditional system of management is driving extraordinary change in large business enterprises. In fact, no institution has been forced to confront the changes of an interdependent world more rapidly than business. Because businesses compete against one another around

the world, if one company or one part of the world makes significant headway in developing new skills and capabilities for a dynamic, interdependent world, it will quickly gain advantage. Others will have to play catch-up or go out of business.

The basic problem is that it takes years to develop the skills and knowledge to understand complex human systems, to learn how to think and learn together across cultural boundaries, to reverse years of conditioning in authoritarian organizations where everyone looks “upward” for direction instead of “sideways” to see the larger systems of which one is a part. Equally challenging, it takes patience, perseverance, and extraordinary commitment to develop these skills and understandings in the context of corporate environments still largely dominated by authoritarian, control-oriented cultures.

A Lagging Edge of Change

The more one understands the skills, knowledge, and beliefs needed to succeed in an increasingly interdependent world, the more one sees that it is folly to focus exclusively on our “system of management” and ignore our “system of education.” Isn’t it silly to begin developing systems thinking capabilities in 35-year-olds who have spent the preceding 30 years becoming master reductionists? Isn’t it grossly inefficient to begin developing reflectiveness, the ability to recognize and question one’s own mental models, with adults who, in order to be successful in school and work, had to become masters at solving problems rather than thinking about the thinking that generated the problems? Isn’t it naive to think that we can suddenly master collaborative learning as adults, when so much of our lives has been devoted to win-lose competi-

tion and proving that we are better than each other? Shouldn't personal mastery, the discipline of fostering personal vision and working with creative tension, be a cornerstone of schooling? Isn't it hypocritical to espouse personal vision and self-assessment when so much of traditional schooling is devoted to learning what *someone else* says we should learn and then convincing *them* we've learned it?

Increasingly, business people are beginning to recognize the tragic neglect of fundamental innovation in public education. And they are moving from financial contributions to action. Electronic Data Systems allows employees to take time off to volunteer in public schools. Intel employees have worked to start new public schools in Arizona and in statewide educational reform movements in Oregon and New Mexico. Ford employees are teaching systems thinking and mental models in community colleges in Detroit. Motorola has started its own summer camp, teaching employees' children basic science and technology.

But, little is likely to take hold and grow from such isolated experiments until there is a widespread revolution in professional *and* public thinking about the nature and goals of public education. How will we need to expand the traditional skill-set of the industrial era for the knowledge era? How must our traditional ideas about school give way as more and more of the content of traditional education becomes available over the Internet? What will educational institutions in the knowledge era look like?

There are no easy answers to such questions. My guess is that two cornerstones of the new system of education will be recognizing the importance of the learning *process* in addition to the *content* of what is learned, and making high-level thinking and learning skills, like systems thinking and collaborative learning, as central as the traditional skills of reductionistic thinking and individual problem-solving. These could be two elements of a thought revolution in education.

Who Will Lead the Transformation?

Several years ago, my wife and I attended an awards assembly at our teenage son's school. Our five-year-old son, Ian, was with us. When the winner of the first award was announced, Ian turned to Diane and asked, "Mommy, is only one child getting an award? What about the others?"

What did a young child see that sophisticated educators overlook? Why can he see the system as a whole—all the students—and the educators see only the pieces, the "exceptional" kid? Maybe it's simply that the professional educators have spent their whole lives in school. Maybe, despite their knowledge about learning theory and research, they have a hard time seeing beyond "the way it's always been done." Maybe we all need to be leaders for change.

In 1995, I participated in a series of satellite broadcasts on learning organizations sponsored by the Association of Supervision and Curriculum Development and the PBS Satellite Network. One of these shows involved three students from the Orange Grove Middle School in Tucson, Arizona, which had been integrating systems thinking and learning-directed learning throughout its curriculum and management practices for over five years. The clarity, articulateness, and composure of these young people impressed the other participants, mostly corporate managers doing the same kind of work within their businesses. As the program went on, many of the most penetrating insights were offered by the young people. When the moderator asked for any closing remarks, Kristi Jipson, an eighth-grade student at Orange Grove, said, ". . . We are really excited about what we are learning now. Before, you only needed to learn the 'book and ruler' stuff. But now, as this program shows, businesses are changing and, by the time we get there, this is what will be going on, and we'll need to know it."

Interestingly, one of the more forceful voices for innovation in the Catalina Foothills District, where

Orange Grove is located, has been a group of senior "citizen champions," many in their 70s and older. They formed The Ideals Foundation, with a vision of developing entire curricula organized around "demonstrating how the parts relate to the whole."

These examples demonstrate that the profound rethinking of public education required today cannot be led by any one constituency or professional group. The future is the responsibility of us *all*. And "all" includes those who have seen the most of the past and those who will see the most of the future. All must participate and all must lead. ■

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Peter M. Senge, best-selling author of *The Fifth Discipline: The Art and Practice of the Learning Organization*, is an international leader in the area of creating learning organizations. He is a senior lecturer in the Organizational Learning and Change Group at MIT and chairman of The Society for Organizational Learning (SOL). Peter has lectured throughout the world and written extensively on systems thinking, institutional learning, and leadership.

NEXT STEPS

- With a group of colleagues, talk about the skills and knowledge you gained in school as you were growing up. Discuss some of the messages you remember hearing about what makes a person successful in society.
- Identify the types of skills that you predominantly use in your job. Do they mostly involve analysis and problem-solving? How often do you employ systems thinking, reflection, and collaborative learning in the workplace? How might you develop and use these skills more frequently on the job?
- According to this article, for enduring innovation to occur, we need to radically rethink how we're educating our young people. In what ways might you, or your organization, help prepare young people to succeed in an increasingly interdependent world?