

I've had whole new worlds open up to me as a math teacher. It's really invigorating. And the students notice a change too. When they ask me questions and I don't know the answer, I say 'I don't know. Whom should we ask?' Students are not used to that from a math teacher. It's very hard for mathematics teachers to allow ourselves to get into a situation where we don't know the "right" answer. We don't usually venture far from our textbooks. Reaching beyond my discipline has caused me to develop bonds and relationships with other teachers that I value tremendously, that I don't think would have happened without teaching modeling."

For more about system dynamics in the classroom, see page 231.

This volume, the fourth in the "Fifth Discipline Resource" series, contains 191 pieces of writing by 113 authors, describing tools and methods and reflections, guiding ideas, and exercises and resources that can be adopted to help make institutions of learning more like learning organizations. Many of the articles are intensely pragmatic, geared toward helping teachers, school administrators, or parents solve particular problems. Many of them are deeply reflective, aimed at helping us see the world as we haven't seen it before, so we can operate within it in more effective ways. They are not prescriptive or restrictive and are easily adapted to a wide variety of circumstances, including education and lifelong learning. There are no "top-ten learning solutions" in this book, no schools that have their problems figured out in ways that the rest of us can simply copy. Indeed, no school's experience can be copied to another's situation wholesale. All schools, and their situations, are unique and require their own unique combination of theories, tools, and methods for learning.

We call this book *Schools That Learn* because we are not limiting our vision to schools or colleges as they are even to school buildings. The school, as we see it, is a fulcrum point for educational and societal change. Classrooms can only improve, in a sustainable way, if schools around them improve. Schools depend on the districts and communities of which they are a part. And sustainable communities, in turn, need viable schools for all of their children and learning opportunities for all of their adults. In our view, a learning school is not so much a separate place (for it may not stay in one place) as a meeting ground for learning—dedicated to the idea that all those involved with it, individually and together, will be continually enhancing and expanding their awareness and capabilities.

Senge, P. M. (2000). *Schools that learn: A fifth discipline fieldbook for educators, parents, and everyone who cares about education* (1st Currency pbk. ed.). New York: Doubleday.

We would like to acknowledge the influence of many writers on the theories and the practice of this book, including but not limited to: John Dewey, Jean Piaget, Paulo Freire, and many others whose names you will find in these pages.

## INTRODUCING THE FIVE LEARNING DISCIPLINES

We see *Schools That Learn* as a kind of “prequel” to our other books about learning organizations. During the last few years, people in many companies have been called upon to act with greater autonomy, to draw their own conclusions, to lead as well as follow, to question difficult issues in a safe manner, and to risk failure so that they may build capabilities for future successes. These are the skills that learning organizations and learning communities demand. Schools that train people to obey authority and follow the rules unquestioningly will have poorly prepared their students for the evolving world they will live in.

The previous books in this series identified five key disciplines of organizational learning. These five disciplines are not “reforms” or “programs” imposed from the outside, but ongoing bodies of study and practice that people adopt as individuals and groups. As many teachers and administrators have noted, the learning disciplines offer genuine help for dealing with the dilemmas and pressures of education today:

- **Personal Mastery:** Personal mastery is the practice of articulating a coherent image of your personal vision—the results you most want to create in your life—alongside a realistic assessment of the current reality of your life today. This produces a kind of innate tension that, when cultivated, can expand your capacity to make better choices and to achieve more of the results that you have chosen.
- **Shared Vision:** This collective discipline establishes a focus on mutual purpose. People with a common purpose (e.g., the teachers, administrators, and staff in a school) can learn to nourish a sense of commitment in a group or organization by developing shared images of the future they seek to create and the principles and guiding practices by which they hope to get there. A school or community that hopes to live by learning needs a common shared vision process.
- **Mental Models:** This discipline of reflection and inquiry skills is focused around developing awareness of attitudes and perceptions—your own and those of others around you. Working with mental models can also help you more clearly and honestly define current reality. Since most mental models in education are often “undiscussable” and hidden from view, one of the critical acts for a learning school is to develop the capability to talk safely and productively about dangerous and discomfiting subjects.
- **Team Learning:** This is a discipline of group interaction. Through such techniques as dialogue and skillful discussion, small groups of people transform their collective thinking, learning to mobilize their

energies and actions to achieve common goals and drawing forth an intelligence and ability greater than the sum of individual members' talents. Team learning can be fostered inside classrooms, between parents and teachers, among members of the community, and in the "pilot groups" that pursue successful school change.

- **Systems Thinking:** In this discipline, people learn to better understand interdependency and change and thereby are able to deal more effectively with the forces that shape the consequences of their actions. Systems thinking is based on a growing body of theory about the behavior of feedback and complexity—the innate tendencies of a system that lead to growth or stability over time. Tools and techniques such as stock-and-flow diagrams, system archetypes and various types of learning labs and simulations help students gain a broader and deeper understanding of the subjects they study. Systems thinking is a powerful practice for finding the leverage needed to get the most constructive change.

}} For an overview of the five learning disciplines, see page 59.

Educators have told us that the learning disciplines sound great—"but what do we do Monday morning? How do we create a sense of systemic awareness or personal mastery within our staff? And is it worth even trying with students? How can we integrate these skills and practices with our existing curriculum and all the changes imposed on us? How do we discover exactly what type of learning classroom or school we wish to create? What do we do about the pressures coming from outside? How do we get started?"

Parents who are familiar with the learning disciplines have similar questions: "How do we build a better place for ourselves in the systems of our children's schools? How do we use these disciplines to deal with problems like homework or disputes with other children? How do we use them in working with our children's teachers? What kind of relationship can we build between the school and the workplace, or other places in the community?"

No one person has the answers to these questions. But effective ways of approaching the questions are emerging from the collective experience of people in a wide variety of public and private schools, colleges, and universities. In all, thousands of people—parents, teachers, administrators, experts, politicians, and students themselves—are evolving together into a worldwide community of organizational learners in education. We