

# FOCUS ON EXCEPTIONAL children

## Do Schools Have Learning Disabilities?

*Jim Knight*

In the past 15 years, great gains have been made in the development and validation of curricula and instructional methods for students who have disabilities. Despite these gains, as the literature on educational change all too vividly reveals (Fullan, 1994; Sarason, 1990), the rate at which teachers learn and implement research-validated practices remains disappointing. Commenting on organizations generally, Senge (1990) made the provocative observation that organizations may fail to learn because they are structured or cultured in ways that inhibit organizational learning. Schools may fail to incorporate research-validated practices for students with disabilities because schools themselves suffer from learning disabilities:

It is no accident that most organizations learn poorly. The way they are designed and managed, the way people's jobs are defined, and, most importantly, the way we have all been taught to think and interact (not only in organizations but more broadly) create fundamental learning disabilities. . . . Learning disabilities are tragic in children, especially when they go undetected. They are no less tragic in organizations, where they also go largely undetected. (Senge, 1990)

Senge and many others (e.g., Fullan, 1993; de Geus, 1997; Tobin, 1993; Watkins & Marsick, 1993) have proposed that organizational learning disabilities might be overcome if companies become learning organizations. In his seminal work, *The Fifth Discipline*, Senge proposes a vision of an organization that is a humane community, one whose culture empowers its members to grow and learn and realize their potential. He proposes that learning organizations could be places

where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together (Senge, 1990, p. 3).

As attractive as this new vision is, we still do not know whether the vision can concretely improve the way students with disabilities are taught in schools. According to Garvin (1993), for example, learning organization recommendations are "far too abstract, and too many questions remain unanswered" (Garvin, p. 79). Even Senge notes that, "There is no such thing as a 'learning organization'" (Kofman & Senge, 1995, p. 31).

Two things concerning the learning organization idea are clear, however. *First*, the learning organization concept is attractive and has captured the imagination of business leaders as well as many educators. For example, an Internet search conducted through the AltaVista search engine, produced 2,169,383 references to "learning organization." Similarly, in educational discourse, although seldom mentioned prior to 1990, the learning organization concept now attracts a great deal of interest (e.g., Dalin, 1996; DuFour, 1997;

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Keefe & Howard, 1997; and Louis, Kruse, & Raywid, 1996), with a recent ERIC search surfacing 157 references to the topic between 1990 and 1998.

*Second*, the concept of learning organization, because it offers such a broad and attractive vision, brings to light unexploited strengths and unnoticed barriers to change that exist in schools. That is, by illuminating what schools are, what they can be, and what keeps them from realizing their potential, the learning organization concept enables educators to see aspects of their schools that they may have never seen before.

This article, then, has been written to serve two purposes: (a) to present a summary of the key themes described in the learning organization literature, and (b) to discuss the ways in which each theme illuminates how schools might be better organized to deliver services for students with disabilities. Specifically, this paper addresses the following themes and their implications for schools: (a) organizational learning, (b) knowledge, (c) authentic communication, (d) vision, (e) steward leadership, (f) systems perspective, and (g) self-organizing systems.

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## ORGANIZATIONAL LEARNING

In discussions of organizational learning two concepts surface repeatedly: mental models (Johnson-Laird, 1983; Senge, 1990) and single-loop versus double-loop learning (Argyris, 1993). Both of these themes build upon Polanyi's distinction between tacit and explicit knowledge, which has been summarized as follows:

Tacit knowledge is personal, context-specific, and therefore hard to formalize and communicate. Explicit knowledge . . . on the other hand, refers to knowledge that is transmittable in formal, systematic language . . . knowledge that can be expressed in words and numbers represents only the tip of the iceberg of the entire body of knowledge. (Nonaka & Takeuchi, 1995, pp. 59-60)

### Mental Models

In the second half of the 20th century, several authors (Bernstein, 1991; Feyerabend, 1975; Kuhn, 1970; Polanyi, 1966) have proposed that tacit knowledge governs, focuses and limits people's perceptions of the world around them. Pascale notes that tacit knowledge can inhibit the growth of new knowledge:

The human mind has an inherent tendency to perceive patterns: over time, these patterns form a mental infrastructure—or mindset. . . . Danger arises when our mental maps cease to fit the territory. The problem with mindsets or paradigms is that we tend to see through them, and so the degree to which they filter our perception goes unrecognized. (p. 42)

Kuhn's (1970) discussion of the paradigm concept is now so well known in North American discourse that the word *paradigm* has almost become a cliché; nevertheless, the concept is central to writing on learning organizations and, therefore, cannot be overlooked here. Drawing on Polanyi, Kuhn noted that perceptions are inescapably shaped by paradigms, the mindsets of the world that individuals hold. Because people see the world only through their paradigms, their understanding of reality is only partial and incomplete. That is, people see what is within the frame of their paradigm, but only what sits within that frame. The way paradigms limit and shape perception is illustrated by one writer's description of the Peruvian Indians' first sight of their Spanish conquerors:

The Peruvian Indians . . . seeing the sails of their Spanish invaders on the horizon, put it down to a freak of the weather and went on about their business, having no concept of sailing ships in their limited experience. Assuming continuity, they screened out what did not fit and let disaster in. (Handy, 1990, p. 9)

In the learning organization literature, paradigms, renamed "mental models" (Johnson-Laird, 1983; Senge, 1990), are considered problematic because they limit people

to familiar ways of thinking and acting and, hence, limit their openness to new ideas. Tacit knowledge creates habits of thought and, therefore, interferes with learning. Real learning, on the other hand, is described as occurring when individuals learn to recognize, test, and transcend their limiting "internal pictures of how the world works" (Senge, 1990, p. 17). Real learning, then, prompts people to step outside their habits of thought and to rethink the mental models that are shaping the way they are perceiving.

### Single-Loop versus Double-Loop Learning

Argyris's (1993) commentary on organizational learning provides a vocabulary for understanding a kind of learning that enables people to transcend their "internal pictures of how the world works," to use Senge's description. According to Argyris, "Learning occurs when errors are detected and corrected" (p. 49). A teacher is learning if she or he realizes a need for clearer analogies during lessons and then adds better analogies to subsequent lessons.

Argyris, however, extends his definition of learning by distinguishing between what he refers to as single- and double-loop learning. Single-loop learning, he contends, changes only the surface behavior, whereas double-loop learning addresses the "underlying program or master program" (p. 50). Double-loop learning prompts people to reflect and test the assumptions implicit in their mental models. A teacher experiencing single-loop learning uncovers and implements better ways to communicate content; a teacher experiencing double-loop learning asks whether the content should be taught at all.

### Implications for Schools

The powerful hold some mental models have over educators is illustrated all too vividly by how little has changed over the years in the way many schools provide education (Cuban, 1993). Most schools today do not look that much different than those of 25 or 50 years ago. In the typical neighborhood school, students are more than likely divided into separate classrooms, divided by grade level, regardless of their demonstrated abilities. Probably a teacher will be leading discussion at the front of the class, or students will be working at their desks. In a modern school all students probably are expected to be at the same point in learning, regardless of their interest, ability, disability, or level of mastery. For most students the primary motivation is to achieve a grade—a grade that quite possibly holds no authentic meaning.

A first step in moving outside this mental model, then, is for educators to call up their own implicitly held internal pictures about how schools should work. Are single, isolated classrooms the best places for students to learn? Is it realistic to expect all students to progress at more or less the same

pace? Should students be grouped into classes by age, or by other categories such as interests and ability? Should students be formally grouped at all? Should schools continue to emphasize grades and other types of formal evaluation, in some cases beginning with kindergarten, or should the entire notion of student evaluation be reconceived?

Skrtic (1991) identifies schools' emphasis on identification of students with disabilities as a particularly problematic mental model. Skrtic suggests that schools isolate themselves from organizational learning by locating the cause of student failure within the student rather than the system. Consequently, when a student is unsuccessful, the student is assessed, diagnosed, and labeled to explain why he or she did not learn.

Educators could question numerous other internal pictures they hold about education for students with disabilities. For example, are IEPs effective? Do adopted methods of evaluation authentically identify student strengths and needs? Are current models for staff development enabling teachers to better teach students with disabilities? Furthermore, within the special education field itself, the mental models people hold about topics such as inclusion or pull-out programs, direct instruction, or constructivist learning, seem to reduce the conversation around best practices for students to a kind of ideological discussion, what Leonard-Barton (1995) refers to as "religious wars."

Argyris's discussion also brings to light ways in which schools may be failing to learn. Indeed, many proposed school improvement projects may embody single-loop learning when what is really required is double-loop learning. For example, the emphasis on improving instructional practice may be a single-loop approach that overlooks the more fundamental question as to whether content is meaningful, useful, or relevant for students. Similarly, the common special education emphasis on remediation, though necessary, may be overlooking more fundamental student issues related to personal motivation, family life, and other social issues. Double-loop learning and mental models both suggest that educators need to keep reinventing their schools by looking at them with the help of still more new ideas.

### KNOWLEDGE

Garvin's definition of a learning organization encapsulates three organizational interactions with knowledge. Thus, he defines a learning organization as "an organization skilled at creating, acquiring, and transferring knowledge" (p. 80). In recent years several authors (Davenport & Prusak, 1998; Edvinsson & Malone, 1997; Leonard-Barton, 1995; Nonaka & Takeuchi, 1995; and Stewart, 1997) have especially clarified how an organization might acquire, create, and transfer knowledge.

### Acquiring Knowledge

Acquiring knowledge is an inevitable part of almost all knowledge management, and any organization improves to a greater or lesser degree to the extent that it effectively and efficiently brings in new knowledge from outside itself. Leonard-Barton observes that, because importing knowledge is so important, organizations have to develop their absorptive capacity: "the ability of a firm to recognize the value of new external information, assimilate it, and apply it to commercial ends" (p. 138).

To improve their "absorptive capacity," organizations have to be clear about their strategic intent and then identify the technology they need, but lack internally, to achieve their intent. Leonard-Barton labels this technological deficit the "capability gap."

That author identifies six strategies that can improve an organization's ability to improve its ability to bridge the capability gap:

1. Creating porous boundaries between the organization and the environment
2. Scanning the environment broadly
3. Developing individuals with broad enough technological expertise in a variety of fields so they can understand how knowledge from one field can be applied in another
4. Fighting NIH (not invented here)
5. Developing expertise at weighing the balance between transferability and desirability
6. Developing the ability to evaluate technology.

Leonard-Barton extends her discussion of importing knowledge by observing that implementation should be seen as an "act of innovation" (p. 92). She contends that implementation improves when there is user involvement because "people are more receptive when they have contributed to [a technology's] design [and] involving users in the design of tools results in superior designs since users have specialized knowledge . . . that should be embodied in the design" (p. 94).

That author observes that a traditional "delivery mode" (when developers deliver a completed technology with the expectation it is ready to use) is often problematic, as developers may overlook user needs, user challenges integrating technology, and thereby fail to communicate a tool's potential. In contrast to delivery mode, Leonard-Barton stresses the importance of *mutual adaptation*: "mutual adaptation is the reinvention of the technology to conform to the work environment and the simultaneous adaptation of the organization to use the technical system" (p. 104). The author comments that "a study of thirty-four development projects suggests that active co-development of tools with users is not only more efficient but more effective" (p. 110).

### Creating Knowledge

Nonaka and Takeuchi (1995) outline a theory of knowledge creation that begins with Polanyi's distinction, mentioned earlier, between explicit knowledge, "which can be articulated in formal language including grammatical statements, mathematical expressions, specifications, manuals, and so forth" (p. viii) and tacit knowledge, "personal knowledge embedded in individual experience and involving intangible factors such as personal belief, perspective, and the value system" (p. viii). According to Nonaka and Takeuchi, although tacit knowledge is more important than explicit knowledge, "tacit knowledge has been overlooked as a critical component of collective human behavior" (p. viii).

Knowledge creation, the authors contend, involves four processes that include the conversion of explicit and tacit knowledge:

1. Socialization (from tacit to tacit), "a process of sharing experiences and thereby creating tacit knowledge such as shared mental models" (p. 62)
2. Externalization (from tacit to explicit), "a process of articulating tacit knowledge into explicit concepts" (p. 64)
3. Combination (from explicit to explicit), "a process of systematizing concepts in a knowledge system" (p. 67)
4. Internalization (from explicit to tacit) "a process of embodying explicit knowledge into tacit knowledge" (p. 69).

According to Nonaka and Takeuchi, in knowledge creation, metaphors and figurative language are extremely important because they enable people to "express what they know but cannot yet say" (p. 13).

### Transferring Knowledge

Davenport and Prusak's (1998) work documents effective strategies for knowledge transfer. Specifically, the authors contend that knowledge transfer is best facilitated through face-to-face informal conversation, in part because the give-and-take of informal conversation enables people to attain some understanding of the tacit dimensions of knowledge. So-called water-cooler conversation, informal knowledge fairs, and open forums are seen as settings where people can learn new knowledge from each other. Mentoring programs are another effective means of transferring knowledge. What counts in each case is that there "needs to be room for choice and time for conversation. Conversation should never be seen as an extra" (Davenport & Prusak, 1998, p. 94).

Nonaka and Takeuchi (1995) contribute to the discussion of knowledge transfer by describing the roles they see as being

important in the transfer of knowledge in the knowledge-creation process. According to the authors, in knowledge-creating companies, knowledge is transferred by teams of knowledge officers. Knowledge practitioners' basic role "is the embodiment of knowledge. . . . They accumulate, generate, and update both tacit and explicit knowledge, acting almost as 'walking archives' on a day-to-day basis" (p. 152). Knowledge engineers are the middle managers who "serve as a bridge between the visionary ideal of the top and the often chaotic market [classroom] reality of those on the front line" (p. 154). Finally, knowledge officers are senior managers who oversee the organization's knowledge transfer process. Knowledge officers establish a knowledge vision that "evaluates, justifies, and determines the quality of knowledge the company creates" (p. 156).

Davenport and Prusak (1998) observe that knowledge transfer can be inhibited by cultures that interfere with transfer. Cultural "frictions" such as lack of trust, absence of meeting places, different vocabularies, or lack of time for meetings can significantly inhibit organizational learning. At the same time, a common language, common ground, and trust can make a difference in how quickly ideas are shared in an organization.

### Implications for Schools

Knowledge transfer is without question an essential component of effective instruction for students with disabilities. Both teachers and students benefit if schools improve the way in which knowledge is imported, created, and shared in schools. Leonard-Barton's description of "capability gaps" suggests a strategy schools might use to begin improving their knowledge-management processes. For example, schools could identify their capability gap with respect to students with disabilities by identifying clearly what they believe the students in their school should be able to achieve and then identifying the research-validated teaching practices and other technologies that teachers and others in a school should learn to ensure that students are achieving at the level the school targets.

Further, Leonard-Barton's observation that implementation is best achieved when it is seen as an "act of innovation" suggests a strategy that schools might adopt to increase the likelihood of knowledge importation once a capability gap has been identified. Specifically, teachers may need to be more involved in designing the innovations and technologies they are asked to implement in their classrooms. If teachers are allowed the opportunity to reinvent technology so it better fits the real demands of their classrooms, perhaps they will be more likely to significantly improve their teaching practices.

Nonaka and Takeuchi's discussion of tacit and explicit knowledge suggests further implications for knowledge

transfer in schools. In particular, perhaps more attention should be paid to the tacit dimensions of teaching practice in schools. As the authors' commentary brings to light, much of what a teacher does in the day-to-day, minute-by-minute running of a classroom may involve tacit knowledge, skills that are acquired through practice and that teachers employ unconsciously. A great deal of important teacher knowledge—the way teachers motivate students, build self-esteem, or resolve conflict, for example—may involve skills that teachers learn and employ through habit, and that teachers do not even realize they possess.

Nonaka and Takeuchi's commentary suggests that educational leaders, researchers, teachers, and staff developers need to gain a better understanding of the tacit dimensions of teaching practice so they can improve the process that enables other teachers to gain an understanding of the artful side of teaching. Also, staff developers need to consider what the best methods are for enabling internalization—learners transforming explicit knowledge into tacit knowledge. Perhaps knowledge transfer does not really happen until explicit knowledge becomes another component of a teacher's repertoire of tacit knowledge.

Davenport and Prusak's observation that knowledge transfer is best facilitated through informal conversation may suggest that traditional staff development should be reconsidered to allow for more face-to-face informal interchange between teachers. For example, schools might consider using the various strategies that Davenport and Prusak suggest, including mentoring programs, open forums, and knowledge fairs.

Finally, Nonaka and Takeuchi's discussion of knowledge engineers points to an essential role in schools that is generally overlooked. Specifically, schools that are serious about knowledge transfer need individuals who translate research into knowledge that is applicable to the immediate concerns of the classroom teacher. There may be too large a gap between research documents and the specific pressing challenges teachers face. A knowledge engineer, who translates research so that teachers can quickly see how the research addresses pressing concerns, might significantly accelerate knowledge transfer in schools.

### AUTHENTIC COMMUNICATION

As noted above, a number of strategies enhance knowledge transfer in organizations. Nevertheless, sharing of knowledge in organizations involves one key strategy in particular: Knowledge transfer "comes down to finding effective ways to let people talk and listen to one another" (Davenport & Prusak, 1998, p. 88). Davenport and Prusak's comments are echoed by Webber (1993), who states that:

*In the new economy, conversations are the most important form of work. Conversations are the way knowledge workers*

discover what they know, share it with their colleagues, and in the process create new knowledge for the organization.

According to the literature on organizational learning, if schools are going to become genuine learning organizations, the quantity and quality of conversations taking place between educators will have to improve. Two themes in particular have surfaced in the learning organization literature: creative abrasion and dialogue.

### Creative Abrasion

Several authors (Leonard-Barton 1995; Nonaka & Takeuchi, 1995; Pascale, 1990; Watkins & Marsick, 1993) have proposed that organizational learning can be accelerated by constructive conflict during group discussion. For example, Leonard-Barton (1995) observes that, although mental models can be significant barriers to communication, problem solving actually can be improved when there is creative abrasion, "conflict [that] can be channeled into creating rather than destroying, into synthesis rather than fragmentation" (p. 63).

Creative abrasion should enable a "new level of creativity" when problem-solving teams include team members with (a) specialized skills, as "specialization provides the deep reservoirs of knowledge necessary to solve extremely complex problems" (pp. 69-70), (b) cognitive differences, and (c) preferences in tools and methodologies.

Recognizing that a team such as the one she describes will inevitably involve "religious wars" and other forms of conflict, Leonard-Barton asserts that managers need to utilize integrative mechanisms:

Abrasion is guaranteed. . . . Managers must be able and willing to intervene in the interactions among opposing groups—not to smooth over differences but to channel the energies in a positive direction. (p. 78).

According to Leonard-Barton, "A manager's most powerful ally in focusing creative energies is a very clear destination," (p. 86) which can be embodied in prototypes, a product concept, or a project-guiding vision.

Pascale (1990) echoes Leonard-Barton, observing that leaning organizations should weave "a fabric of beliefs and practices that encourage employees to reexamine assumptions and chip away at . . . inefficiencies" (p. 47). He asserts that team learning requires a new understanding of the role of contention and conflict: "We remain in the Dark Ages in grasping the value of contention. . . . A discontinuous improvement in capability is needed for the development of constructive internal tension" (p. 55). For Pascale,

the critical insight is that what have heretofore been regarded as hardships (owing to their paradoxical nature) or chronic sources of aggravation to managers are, in fact, the well spring of organizational vitality. Yet to harness this fuel . . . requires a different mindset—a shift in paradigm. (p. 79)

Pascale offers four concepts as a means of harnessing the fuel of contention: fit, split, contend, and transcend.

- *Fit* "refers to the consistencies and coherence of an organization" (1990, p. 48). Simply put, "fit" refers to how cohesively various individuals in an organization come together. "When the gears engage, and all . . . elements mesh, fit is attained" (p. 48).
- *Split* "pertains to a variety of techniques used to sustain autonomy and diversity" (p. 49). In organizations, split often involves assigning different, stand-alone entities "responsibility for specialized products and markets outside the parent company's mainstream" (p. 50).
- *Contend* refers to the constructive conflict that should exist in organizations. "There are some tensions in organizations that should never be resolved once and for all" (p. 51). Moreover, "we are almost always better served when conflict is surfaced and challenged, not suppressed" (p. 51).
- *Transcend* refers to "an approach toward management that can cope with the complexity entailed in orchestrating fit, split, and contend. . . . It looks to the tension . . . between contradictory opposites as the engine of self-renewal. It is predicated on the notion that disequilibrium is a better strategy for adaptation and survival than order and equilibrium" (p. 53).

### Dialogue

A second frequent theme in the organizational learning literature on authentic communication is dialogue. Some writers (Bohm, 1996; Ellinor & Gerard, 1998; Isaacs, 1993) contend that people must learn to voice their concerns in ways that encourage authentic dialogue. Bohm, for example, proposes that Westerners are experiencing a crisis of communication and suggests dialogue as a visionary solution to that crisis:

It is clear that if we are to live in harmony with ourselves and with nature, we need to be able to communicate freely in a creative movement in which no one permanently holds to or otherwise defends his [or her] own ideas. (Bohm, 1996, p. 4)

According to Bohm, dialogue is a unique form of communication in which groups "think together." Such communal thinking occurs when groups of individuals use a number of communication strategies. People engaged in dialogue have to recognize that they bring assumptions to the conversation; therefore, to facilitate dialogue, participants need to suspend their assumptions.

The object of a dialogue is not to analyze things, or to win an argument, or to exchange opinions. Rather, it is to suspend your opinions and to look at the opinions—to listen to everybody's opinions, to suspend them, and to see what all that means. (Bohm, 1996, p. 26)

The goal of dialogue is shared understanding, with everyone experiencing ideas in the same way, without assumptions. In dialogue, there is no reason for persuasive rhetoric simply because "if something is right, you don't need to be persuaded" (Bohm, 1996, p. 27). Furthermore, because dialogue depends upon participants suspending their assumptions, Bohm suggests that "you could say that if you are defending your opinions, you are not serious" (p. 41).

Isaacs (1993) builds on Bohm's discussion, observing that dialogue

can serve as a cornerstone for organizational learning by providing an environment in which people can reflect together and transform the ground out of which their thinking and acting comes. (p. 83)

Dialogue can be facilitated through the use of a number of strategies. Specifically, Isaacs suggests that dialogue is more likely to occur when participants (a) suspend their certainties, (b) observe the way in which they are listening to ensure that they are listening empathetically, (c) keep the inquiry from moving too quickly, (d) attend to their thoughts during dialogue, and (e) maintain peripheral attention.

Ellinor and Gerard (1998) agree that dialogue involves specific strategies, including (a) suspension of judgment, (b) release of the need for specific outcomes, (c) inquiry into and an examination of underlying assumptions, (d) authenticity, (e) a slower pace with silence between speakers, and (f) listening deeply to self, others, and for collective meaning (p. 26).

The authors also describe balancing advocacy and inquiry as an essential approach for enabling dialogue. Similarly, Senge (1990) contends that "the most productive learning usually occurs when managers combine skills in advocacy and inquiry" (p. 199). Often, what occurs in organizations is that when individuals openly assert their views, their advocacy provokes an equally strong counteraction that inevitably creates a vicious escalation of argument and miscommunication.

According to Senge, dialogue can be enabled through "reciprocal inquiry."

By this we mean that everyone makes his or her thinking explicit and subject to public examination. This creates an atmosphere of genuine vulnerability. No one is hiding the evidence or reasoning behind his views—advancing them without making them open to scrutiny. . . . When operating in pure advocacy, the goal is to win the argument. When inquiry and advocacy are combined, the goal is no longer "to win the argument" but to find the best argument. (p. 199)

### Implications for Schools

Many authors writing on school and organizational development have addressed the importance of authentic communication. In the past 15 years, for example, many

have stressed the value of schools becoming collaborative work cultures in which authentic communication is an integral component of the organization. Based on a study of 78 schools in eight Tennessee districts, Rosenholtz concluded that deep, authentic collaboration in learning-enriched schools leads to increased teacher certainty, higher teacher commitment, and higher student achievement. Fullan (1993) extends the rationale for team learning one step further:

You cannot have students as continuous learners and effective collaborators without teachers having these same characteristics. This is not a matter of teachers having more enjoyable jobs. It is simply not possible to realize the moral purpose of teaching—making a difference in the lives of students—without similar developments in teachers. (p. 99)

Some of the literature on educational reform echoes Leonard-Barton and Pascale's observation that contention is useful and constructive. For example, Hargreaves (Hargreaves & Dawe, 1989) has warned against "group think," commenting that, "Contrary to popular opinion, it can reduce innovation and imaginative solutions to individual situations, as susceptibility to the latest chosen innovation and 'group think' carry the day" (p. 202). Similarly, Nias (1989) has observed that

effective collaborations operate in the world of ideas, examining practices critically, seeking better alternatives and working hard together at bringing about improvements and assessing their worth. (p. 242)

Bohm (1996), Isaacs (1993), and Ellinor and Gerard's (1998) discussion of dialogue suggests several ways in which dialogue may be realized between educators and between educators and students. Through approaches such as *socratic dialogue* (Strong, 1996), some teachers are experimenting with new instructional strategies to create classrooms that enable authentic, meaningful conversation. Perhaps if students are taught the specific strategies required for suspending assumptions and judgment, they will find themselves engaged by profound and important conversations.

Also, perhaps something like dialogue can be approached when teachers or counselors meet with students to discuss the student's experiences, goals, and dreams. If students think they can authentically and openly discuss what is important in their lives, that dialogue may serve as a foundation for more successful school experiences.

Dialogue suggests additional opportunities for teacher interaction. To be sure, much teacher conversation is shaped by the assumptions teachers have about their schools, students, and education in general. Perhaps a more profound kind of organizational learning could take place if teachers were able to reflect on the meaning of their assumptions. Along these lines, a more authentic form of staff development might use a form of communication similar to what Senge refers to as "reciprocal inquiry."

Anyone who has sat through a typical staff meeting recognizes that there is room for improved communication and collaboration in schools. To create more authentic communication between educators, however, schools have to bring about certain changes. *First*, schools have to create time for team learning. Too many teachers do not have the time necessary to engage in the kind of dialogue that Bohm identifies as essential. *Second*, schools have to experiment with new organizational structures that allow for authentic learning between different disciplines (Skrtic, 1991). Schools should experiment with structures that allow for Pascale's (1990) "fit, split, contend, transcend." Too often, school employees are rewarded, implicitly and explicitly, for repressing contention. A school that is a learning organization learns how to harness and use constructive contention.

## VISION

Vision, at both the individual and the organizational level, is considered the glue that holds together a learning organization (Kline & Saunders, 1991; Senge, 1990; Watkins & Marsick, 1993) and a starting point for creating one. Watkins and Marsick (1993) note, "The learning organization begins with a shared vision" (p. 88). Absence of vision is a major learning disability from which many organizations suffer.

Vision need not be a carefully worded mission statement that is framed and pasted onto every wall, though. Indeed, too much commitment to a particular vision can be counterproductive given the unpredictability of the future. If a vision ties everyone to certain narrow goals for the future, and the future does not turn out the way everyone expects, an organization can find itself in problematic times (Stacey, 1992). However, without a vision, any organization or individual is fighting an unarmed battle against the vicissitudes of the future.

For individuals, at the most fundamental and personal level, vision means having a clear understanding of how work enables one to lead a meaningful life (Covey, 1989; Leider, 1997; Senge, 1990). Thus, personal vision is an individual's articulation of what matters personally, and how his or her work provides a medium for achieving ends that are meaningful.

Through personal vision an individual makes a statement about what he or she hopes to achieve. Such a statement becomes a standard for reflection on the effectiveness of actions and a goal, perhaps never entirely attainable, for which to strive. Thus, personal vision is the mechanism for personal improvement and growth (Covey, 1989; Leider, 1997; Senge, 1990).

At the organizational level, vision can increase productivity (Tichy & Sherman, 1993; Watkins & Marsick, 1993).

In the best case scenario, an organization in which all individuals clearly understand their goals for personal development and how their work allows them to achieve much of what matters in their lives could have a tremendous competitive advantage. But if every individual's personal notion of what matters and how to get there is at odds with every other individual's, that state could lead to unprecedented fragmentation, conflict, and disarray. This is why shared vision is an important component in a learning organization (Senge, 1990; Watkins & Marsick, 1993).

Shared vision is one of the oldest and, ostensibly at least, simplest ideas in organizational theory (Collins & Porras, 1994; Kline & Saunders, 1993; Senge, 1990). The thinking about shared vision has always been that if an organization is going to be effective, every individual in the organization needs to have a clear notion of what the organization means, what its goals are, how it will achieve those goals, and how each employee can contribute to that vision. Recognition of the importance of shared vision has led most large and many small organizations to hold extensive, expensive retreats, for the purpose of developing their own vision. Indeed, some organizations spend months developing narratives or artistic and musical works to capture the ineffable and unique nature of their organization.

The trouble is that writing a vision and enacting it are two very different activities. Most people who work in organizations that have gone through a visioning process recognize that, left unattended, a vision becomes a symbolic vessel that no longer holds meaning (Meyer & Rowan, 1978).

In a learning organization, the enactment of the vision is far more important than its articulation (Stacey, 1992). What matters is that all employees share a mutual commitment to the larger purposes of their work. Although this larger commitment is difficult to create in a 3-day workshop, it might be the natural outcome of an organization with a collaborative structure, an organization in which all employees feel they have ownership, where everyone is encouraged to find new ways to look at problems and to continually grow—a learning organization.

## Some Implications for Schools

Rosenholtz (1989) found that schools that encourage collaboration, teacher growth, and student success are schools where teachers and employees have shared vision: In

high consensus schools . . . shared goals, beliefs, and values led teachers through their talk to [an] ennobling vision that places teaching issues and children's interests in the forefront. (p. 39)

In recent years, several writers (e.g., Barth, 1990; Fullan, 1993) have emphasized the importance of personal vision in schools. Barth emphasizes the importance of personal vision

as a methodology for teacher improvement and school improvement:

I can think of nothing so conspicuously missing in the effort to improve our schools as the engagement of teachers and principals in constructing visions. (p. 148)

Several writers (Fullan, 1993; Senge, 1990; Sergiovanni, 1992) contend that personal vision is prerequisite to shared vision. The logic underlying their thinking on this issue is easy to follow: If reformers wish teachers to adopt an organization's explicitly stated notions of purpose and meaning, the reformers must recognize each individual's need to have his or her own explicitly stated notions of personal purpose or meaning. When individuals recognize a natural relationship between their inner vision and an organization's vision, they may develop a deep, personal commitment to implementing their organization's vision. On the other hand, individuals who are uncertain about their personal goals and purposes may be uncertain about their commitment to their organization's goals and purpose.

Fullan (1993) and Barth (1990) suggest several questions that might launch an individual's exploration of his or her personal vision. These questions could be excellent points of departure for teachers considering developing personal vision:

1. Do I have a personal vision?
2. What are the essential elements of my personal vision?
3. What can I do to make my vision coherent and legitimate?
4. What kind of school would I like my children to attend?
5. What kind of school would I like to teach in?
6. What would happen if I made my vision public?
7. How does my vision compare with my current school and my personal teaching practices? (Barth, 1990, pp. 155-56)

Just writing a statement about beliefs is not enough. Teachers must carry their vision into the classroom as a tool for analyzing practices. Skrtic (1991) suggests a technique that teachers might use to become more aware of their practices: immanent critique. *Immanent critique* involves analyzing current teaching practices and comparing them to explicitly stated visions or beliefs. This strategy provides a way for teachers to apply practically the personal vision they develop over time. In some settings, facilitators of change might encourage teachers to discuss what they discovered when they used their vision to analyze both their individual teaching practices and the various professional practices the school encourages.

In a school with a carefully constructed collaborative work culture and structure, where teachers feel they have authentic ownership, feel empowered, in a school that is a learning organization, shared vision should naturally evolve.

In a "learning-impooverished" school (Rosenholtz, 1989), on the other hand, there is the distinct possibility that personal vision could significantly increase a teacher's feelings of frustration, resentment, and burnout.

## STEWARDSHIP LEADERSHIP

In the learning organization literature, the traditional notion of leadership—which requires managers to take on the patriarchal responsibility for setting the direction of the organization—is rejected as another organizational learning disability (Block, 1993; Pinchot & Pinchot, 1994; Senge, 1990). Instead, partnership is considered a much healthier approach to leadership.

The call for stewardship is founded on the belief that patriarchal/hierarchical relationships are incompatible with human behavior (Block, 1993; Eisler, 1987; and Senge, 1990). Block summarizes this sentiment as follows:

In an organization where those around us are all adults, taking responsibility for others' performance, learning and future is a care-taking role that undermines the most effective distribution of ownership and responsibility. (p. 27)

Block (1993) and others (Greenleaf, 1996; Senge, 1990; Sergiovanni, 1992) propose stewardship as an alternative to patriarchy.

Stewardship begins with the willingness to be accountable for some larger body than ourselves—an organization, a community. Stewardship springs from a set of beliefs about reforming organizations that affirms our choice for service over the pursuit of self-interest. When we choose service over self-interest, we say we are willing to be deeply accountable without choosing to control the world around us. It requires a level of trust that we are not used to holding. (Block, 1993, p. 6)

A primary argument for steward leaders is the notion that hierarchical leadership creates dependency (Block, 1987, 1993). That is, the traditional, centralized, decision-making model inhibits each individual's ability to act independently, simply because each individual must depend on a leader to make decisions. In contrast, in a learning organization, employees in all likelihood will have much more meaningful work experiences if they can have more say in what they do.

Doing work that has meaning need not be reserved as a luxury or fringe benefit for the ruling class, or postponed until later in life. Offering people at the bottom more choice and control over what they do gives them the means to find purpose at work. (Block, 1993, pp. 48-49)

To create an organization that offers such meaningful work experiences requires a radical shift in the way organizations are understood. As Block (1993) states:

Suggesting that people live out their personal beliefs without a shift in the governance system is using participation as

a means of getting people to adapt more cheerfully to their helplessness. If all we do is seek input from time to time and engage in strategic or situational involvement, our invitation to participate becomes manipulation. Patriarchy as usual with a human touch. (p. 49)

In asserting the superiority of partnership over patriarchy, Block stresses six key points:

1. Every individual longs to have a meaningful life, and this meaning is possible only when people have ownership of their actions. In a hierarchy, because a few have most of the responsibility, ownership does not exist.
2. The starting point for reform involves developing governing systems that balance power and accountability. A learning organization is based on partnership rather than patriarchy; therefore, everyone should be accountable because everyone should have power.
3. In a true learning organization, the empowerment that each individual experiences means that each individual bears a responsibility for shaping the organizational culture. Each individual is also responsible for creating the quality of his or her own experiences at work.
4. Traditional organizations, explicitly separate thinking and work (see also Hammer & Champy, 1993; Skrtic, 1991). A partnership reintegrates managing and acting by involving everyone in the managing.
5. Solutions for the problems that organizations currently face can come only if new management strategies are created for solving them. Too often, "the very system that has patriarchy as the root problem uses patriarchal means to try to eliminate its symptoms" (Block, 1993, p. 51). This approach is doomed to fail from the beginning.
6. The practices that most organizations have created localize responsibility, ownership, and power at the top, even though this orientation impedes quality and service. A learning organization that embodies decentralized leadership—partnerships—could be a step in a more effective and humane direction.

### Implications for Schools

Several authors have suggested some of the implications of stewardship in schools. Sergiovanni (1992), for example, contends that "the true school leader is one who builds substitutes for mythical leadership," promoting leadership that "enables people to respond from within" (p. 118). Sergiovanni sees community norms and professional ideals as two meaningful substitutes for school leadership and also suggests other organizational learning strategies.

For example, "purposing" is proposed as a strategy for reinforcing decentralized leadership. Purposing is "that continuous stream of actions by an organization's formal leadership that has the effect of inducing clarity, consensus and commitment regarding the organization's basic purposes" (Sergiovanni, 1992, p. 95). Learning schools transcend traditional work contracts and develop partnerships that rest on "a shared commitment to ideas, to issues, to values, to goals" (Sergiovanni, 1992, p. 108).

Sergiovanni (1992) and Fullan (1993) embrace Senge's (1990) three re-conceptualizations of leadership: First, leaders should be designers, individuals who "design the learning processes whereby people throughout the organization can deal productively with the critical issues they face" (Sergiovanni, 1992, p. 117). Second, leaders should be stewards of the organization's purpose stories and "may start by pursuing their own vision, but as they learn to listen carefully to other's visions, they begin to see that their own personal vision is part of something larger" (Sergiovanni, 1992, p. 122). Finally, leaders should be teachers. "The role is not so much about 'teaching' but rather about fostering learning. . . . Much of the leverage leaders can exert lies in helping people achieve more insightful, and more powerful views of reality" (Senge, 1990, p. 108).

In a learning organization, stewardship may have a significant impact on how schools are governed. For example, it could mean that:

1. Classroom decisions on issues such as class size, curriculum, and placement would be decided through partnership rather than dictated.
2. The superficial ceremony (Meyer and Rowan, 1978) of teacher evaluation would be replaced by more effective peer coaching.
3. School districts would employ fewer administrators or specialists, instead using school-based decision-making teams and diverting funds into classroom necessities.

Stewardship suggests that staff development should also be reconceptualized. As Block (1993) has suggested, the problems of patriarchal organizations cannot be resolved with patriarchal methods. In learning organizations—and schools that are moving toward becoming learning organizations—professional development has to be driven by teachers' concerns, interests, and needs.

### A SYSTEMS PERSPECTIVE

Learning organizations also emphasize transcending organizational learning disabilities by viewing schools systemically rather than linearly. In this new way of seeing organizations, cause-effect relationships are no longer the

critical purpose of analysis; instead, the viewer looks for dynamic complexity.

The learning organization literature draws on systems theory and cybernetics theories that have been popular since, at least, the 1960s (Bertalanffy, 1968; Kaufmann, 1980; Senge, 1990). The discoveries of chaos science and nonlinear dynamics (Gleick, 1988) further enrich this new way of making sense of how organizations work (Stacey, 1992; Wheatley, 1992). For some, a systemic perspective is a way to break the mold of old cause-effect thinking. Senge sees it as "a framework for seeing interrelationships rather than things, for seeing patterns of change rather than static 'snapshots'" (p. 68).

Because systems thinking emphasizes the system rather than the individual, it is anthropomorphic. Thus, an individual analyzing an organization from a systemic perspective does not look for someone to blame for a problem, or attempt to root out the chief cause of a problem.

The discovery of the complex behavior of dynamic systems . . . must lead us to challenge the view that [problems are] due solely to incompetence and ignorance. When the behavior of a system is driven by certain kinds of feedback mechanisms, that behavior may be unstable purely because of the nature or structure of those feedback mechanisms. (Stacey, 1992, p. 46)

Systems thinking is like a new language for discourse on organizations, and at first blush the theory may seem as inscrutable as Sanskrit is for a Western reader. Nevertheless, a basic understanding of the elements of systems thinking (negative feedback, positive feedback, and delays) enables one to see some of the potential of this new method of analysis.

### Positive Feedback

Positive feedback is what most think of when they hear the word "feedback." Positive feedback refers to systemic structures in which one event increases the intensity of another event, which in turn increases the intensity of the original, which increases the intensity of the second event, and so on. Guitar feedback at a rock concert is an example of positive feedback. The wonderful situation that occurs when an act of kindness increases the compassion of another, and so on, is another example of positive feedback. But so is the situation in which a careless comment prompts a rude comment that provokes a harsh retort, which in turn fuels an angry outburst. Thus, a positive feedback cycle can actually be either viscous or virtuous.

### Negative Feedback

Negative feedback contrasts with positive feedback. Within positive feedback cycles, the system is structured in such a way that, once events are swept along by the structure of the

system, they rapidly increase in intensity. Negative feedback occurs when the system is structured so as to regulate the intensity of events. The cruise control on a car is an excellent example of negative feedback. When a driver turns on the cruise control, the mechanism ensures that the car remains at more or less the same speed. When the car starts to climb a hill, the cruise control increases the intensity of the motor. When the car starts to pick up speed on the down side of a hill, however, the cruise control limits the intensity of the motor, keeping the car's speed always more or less constant. Systems thinkers point out that resistance to change in an organization is an excellent example of negative feedback (Stacey, 1992).

### Delays

In addition, many feedback cycles contain delays—interruptions in the flow of influence that slow down the appearance of the consequence of actions. This simply means that the consequences of an action often are not apparent until some time after the action has taken place. Also, even though most feedback cycles contain delays of one sort or another, most are difficult to see or understand. For example, a teacher might misunderstand the delay between the amount of time a child needs to process information and the child's response in class as a lack of motivation or intelligence, lack of engagement, or an obstinate refusal to learn.

### Value of Systemic Perspective

A systemic perspective is valuable because it enables individuals to see how all of the elements of a situation cooperate to create results. Thus, problems arise not because an individual is at fault but, rather, because all the elements of the system that the individuals are in create the results. By learning how to recognize positive and negative feedback cycles, individuals teach themselves to see more than those who are looking for linear relationships. In this way, a systemic perspective is also important in a learning organization.

### Implications for Schools

Systems theory provides a new way for educators to understand how children learn, how teachers and students interact, and how schools support or suppress the way teachers learn. It provides a different vantage point from which to view the learning process. Looking systemically, educators can see that learning is a negative feedback process for many students. In numerous cases, regardless of the teachers' attempts, students react to prompts for learning in the same way that the cruise control reacts to a small hill: The system within which the teacher and students are interacting will maintain equilibrium and students (and perhaps teachers) will miss the opportunity to learn.

One value of a systemic perspective is that it is anthropomorphic. Educators viewing the negative feedback cycle of the classroom do not ask, "Why don't those students get motivated and start learning?" Instead they ask, "What is it about this system that keeps everyone locked into a negative feedback cycle?" Senge (1990) suggests that the way to break out of a negative feedback cycle is to look for points of leverage. Thus, educators might look at how they indirectly support the negative feedback cycle, whether counterproductive norms have sprung up in the class that diminish the value of learning, and so on. Systems thinking helps the teacher see that problems are neither the student's fault nor the teacher's fault. Both parties are caught up in a cycle that can be broken only when the teacher learns to identify leverage points.

Not all relationships between student and teacher are negative feedback cycles. Actually, teacher-student relationships more frequently look like positive feedback cycles with viscous or virtuous implications. A simple anecdote illustrates how teachers and students can become entrapped in a positive feedback cycle with unhappy implications. Imagine a student who is restless on the first day of school, partly as a result of his (unfounded) fear that the teacher dislikes him. The teacher notices the student's restlessness, suspects that he is trying to cause a disturbance, and frowns. The student sees her frown, decides that his assumptions were correct (she doesn't like him), and rebels. The teacher sees the student's rebellion as requiring severe punishment; and so on. Of course, this cycle could move in a virtuous direction as well, with student and teacher becoming locked into an escalating positive situation.

A systemic perspective also helps educators reconceptualize staff development. Most effective staff development involves a delay. Even though there are few effective quick-fixes, schools continue to use the one-shot, quick-fix approach to staff development. Inevitably, a negative feedback system evolves (staff development does not bring about change), which is hidden to those providing the staff development. If school staff development is to be useful, it must be designed to initiate a positive, rather than a negative, feedback cycle. Because the results of effective staff development are not immediately present (a delay), however, schools frequently stick to one-shot presentations. Real change usually takes longer than a 2-hour session on one afternoon.

### SELF-ORGANIZING SYSTEMS

A primary reason for emergence of the learning organization concept is the growing recognition that the world is now so complex, involving so many interrelated factors, that the "future of an innovative system is absolutely unknowable" (Stacey, 1992, p. 79). Indeed, because the future is so

unpredictable, the traditional notion of strategic planning represents another organizational learning disability (Mintzberg, 1994). With an anecdote about a couple's attempt to plan for retirement, Csikszentmihalyi (1993) nicely illustrates the inherent difficulty of planning for the future in a rapidly changing world:

Being sensitive and rational people, they decided to retire to the safest spot on earth they could find. They spent years poring over almanacs and encyclopedias to check out rates of homicide and health statistics, inquire about the directions of prevailing winds (so as not to be downwind of probable nuclear targets), and finally found a perfect haven. They bought a house on an island early in 1982. Two months later their house was destroyed: Their choice had been the Falkland Islands. (p. 186)

What is true for individuals, in this case, is also true for organizations. Thus, an organization that ties itself to one particular vision of the future may be left behind when the future drifts in unexpected directions. In learning organizations, therefore, a goal is to create places that have the capacity to respond effectively to the vicissitudes of the future. Learning organizations re-create themselves to respond to changes when necessary.

Gareth Morgan (1993) finds a metaphor for self-organization in a rather unlikely place—the actions of African termites. Although he recognizes the unpleasant connotations of a metaphor about termites, Morgan finds an enlightening illustration of the positive aspects of self-organization in "the processes through which termites build their nests and engage in mutually supportive activities":

Imagine a termite colony somewhere in the tropics. There are thousands of termites milling around.

The ground on which they start to build their nest is quite flat. The termites begin their work by moving earth in a random fashion.

Gradually, distinct piles of earth begin to emerge. These then become the focus of sustained building activity, resulting in columns located in more or less random positions. These are built to a certain height, then construction stops. When columns emerge that are sufficiently close together, building resumes until they are joined at the top to form a rounded arch. In this way the termite nest evolves as an increasingly complex structure, with the arch as the basic unit.

The approach eventually results in a kind of free-form architecture, [composed] of interlocking caverns and tunnels that are ventilated, humidity-controlled, and beautifully formed. African termite nests may rise 12 feet high and measure 100 feet across. They can house millions of termites. In terms of scale, they're equivalent to human beings creating a building more than a mile high. (pp. 42-44)

The concept of the self-organizing organization (Morgan, 1993; Stacey, 1992; Wheatley, 1992) is drawn from the discoveries of chaos science—the recognition that some turbulent phenomena are not predictable in any linear manner,

thus self-organizing. The discoveries of chaos science (Gleick, 1988) suggest that it is worse than naive to try to predict, beyond the short term, natural phenomena such as, say, the weather. Organizational theorists (Morgan, 1993; Stacey, 1992; Wheatley, 1992) have applied this new theory to organizational theory, noting the chaotic and turbulent nature of most organizations. They suggest that effective organizations do not have beautifully structured 10-year plans; rather, they have organizational competencies that enable them to work through the surprising challenges a changing future might hold.

### Implications for Schools

The implications of this way of thinking begin at the heart of the school, in the classroom. If writers on learning organizations are correct in proposing that the future is far too complex and variable to predict, a primary concern of education must be to give students competencies for adapting to a mutable, unknowable future. This rationale is perfectly summarized by Hoffer's famous commentary:

In times of change, the learners inherit the earth, while the learned find themselves beautifully equipped for a world that no longer exists. (quotation from Marshall, Mobley, and Calvert, 1994, p. 112)

The implications next extend to the teacher. In learning organizations, teachers would have more autonomy so they can make decisions and respond to new demands arising from the changing nature of their students. Also, teacher preparation could focus on directly preparing teachers for change. According to this way of thinking the assumption that the same curriculum is ideal for each new student is unfounded. The effective teacher is able to adapt and change, learn new ways of thinking, even within the class as it evolves itself.

A self-organizing school would be significantly different than most schools operating today. In the contemporary classroom, in theory at least, education is driven by objectives supported by a centrally mandated curriculum, perhaps designed to meet statewide objectives reinforced by standardized testing. In contrast, a self-organizing school would be designed so that individuals would have the personal discretion to respond to the changing demands of their specific area of responsibility. For example, teachers would have more freedom to adapt their curriculum to the needs of the individual students in their classes and schools would have more control over their finances so they could put their resources into the areas where the resources are most needed.

Similarly, a self-organized staff development program would be driven by teacher interests and concerns, not a mandated ceremony. Thus, it would involve many individuals creating learning opportunities that respond to real concerns.

No one would be forced to sit through a full-day session that bears no relevance to her or his classroom concerns. Instead, everyone would be asked, as the year (and years) progresses, to help co-construct staff development that is useful.

### CONCLUSION

Each of the concepts discussed here is an evocative metaphor for reunderstanding schools. Perhaps a school in which all of these concepts are employed simultaneously could move into a positive feedback cycle, with each new insight strengthening the others. If schools are to approach becoming learning organizations, educators will need to look at how they can create positive feedback systems that encourage the reinvention of their schools. Putting a new coat of paint on the tumbling walls of an old structure will not do much to solve the fundamental problems that most see at the heart of schools.

One final word of caution: Thinking that the learning organization concept opens up the only true way to restructure schools is just as naive as thinking that schools do not need to improve. The learning organization concept is only a new way of thinking about schools. The idea of a learning organization opens up new vantage points for viewing schools, but it is only one vantage point. Educators have to keep reinventing their schools by looking at them from numerous perspectives. Perhaps if educators become more able to reconceive schools in innovative and imaginative ways, they will be able to create schools in which students naturally come to learn in innovative and imaginative ways. Perhaps if schools confront their learning disabilities, if they invent better ways for teachers to learn, students will gain better ways to learn as well.

### REFERENCES

- Argyris, C. (1993). *Knowledge for action: A guide to overcoming barriers to organizational change*. San Francisco: Jossey-Bass.
- Barth, R. (1990). *Improving schools from within: Teachers, parents, and principals can make the difference*. San Francisco: Jossey-Bass.
- Bernstein, R. J. (1991). *Beyond objectivism and relativism: Science, hermeneutics, and praxis*. Philadelphia: University of Pennsylvania Press.
- Bertalanffy, L. (1968). *General systems theory*. New York: George Braziller.
- Block, P. (1987). *The empowered manager: Positive political skills at work*. San Francisco: Jossey-Bass.
- Block, P. (1993). *Stewardship: Choosing service over self-interest*. San Francisco: Berrett-Koehler Publishers.
- Bohm, D. (1996). *On dialogue* (L. Nichol, Ed.). London: Routledge.
- Csikszentmihalyi, M. (1993). *The evolving self: A psychology for the third millennium*. New York: HarperCollins.
- Collins, J. C., & Porras, J. I. (1994). *Built to last: successful habits of visionary companies*. New York: HarperCollins.

- Covey, S. R. (1989). *The seven habits of highly effective people*. New York: Simon & Shuster.
- Cuban, L. (1993). *How teachers taught (2d ed)*. New York: Teachers College Press.
- Dalin, P. (1996). Can schools learn? Preparing for the 21st century. *NASSP-Bulletin*, 80(576), 9-15.
- Davenport T. H., Prusak, L. (1998). *Working knowledge: How organizations manage what they know*. Boston: Harvard Business School Press.
- De Geus, A. (1997). *The living company: Habits for survival in a turbulent business environment*. Boston: Harvard Business School Press.
- Dogsdon, M. (1993). Organizational learning: A review of some literatures. *Organizational Science*, 14(3), 375-394.
- DuFour, R. P. (1997). The school as a learning organization: Recommendations for school improvement. *NASSP-Bulletin*, 81(588), 81-87.
- Edvinsson, L., & Malone, M. S. (1997). *Intellectual capital: Realizing your company's true value by finding its hidden brainpower*. New York: HarperCollins.
- Eisler, R. (1987). *The chalice and the blade: Our history, our future*. San Francisco: HarperCollins.
- Ellinor, L., & Gerard, G. (1998). *Dialogue: Rediscover the transforming power of conversation*. New York: John Wiley and Sons.
- Feyerabend, P. (1975). *Against method*. New York: Verso.
- Fullan, M. G. (1993) *Change forces: Probing the depths of educational reform*. London: Falmer Press.
- Fullan, M. G. (1994). Coordinating top-down and bottom-up strategies for educational reform. In R. F. Elmore & S. H. Fuhrman (Eds.), *The governance of curriculum: The 1994 A.S.C.D. yearbook* (pp. 186-202). Alexandria, VA: Association for Supervision and Curriculum Development.
- Garvin, D. A. (1993, November/December). Building a learning organization. *Harvard Business Review*, 78-91.
- Gleick, J. (1988). *Chaos: Making a new science*. New York: Penguin Books.
- Greenleaf, R. K. (1996). *On becoming a servant leader* (D.M. Frick & L. C. Spears, Eds.). San Francisco: Jossey-Bass.
- Hammer J., & Champy, J. (1993). *Reengineering the corporation: A manifesto for business revolution*. New York: HarperCollins.
- Handy, C. (1990). *The age of unreason*. Boston: Harvard Business School.
- Hargreaves, A., & Dawes, R. (1989). *Coaching as unreflective practice: Contrived collegiality or collaborative culture*. Paper presented at American Educational Research Association annual meeting.
- Isaacs, W. (1993). Dialogue: The power of collective thinking. *Systems Thinker*, 4(5).
- Isaacson, N., & Bamberg, J. (1992). Can schools become learning organizations? *Educational Leadership*, 50(3), 42-44.
- Johnson-Laird, P.N. (1983). *Mental models*. Cambridge, MA: Cambridge University Press.
- Kauffman, D. L., Jr. (1980). *Systems one: An introduction to systems thinking*. Minneapolis: S. A. Carlton.
- Keefe, J. W., & Howard, E. R. (1997). The school as a learning organization. *NASSP Bulletin*, 81(589), 35-44.
- Kline P., & Saunders, B. (1991). *Ten steps to a learning organization*. Arlington, VA: Great Ocean Publishers.
- Kofman, F., & Senge P. (1995). Communities of commitment: The heart of learning organizations. In S. Chawla & J. Renesch (Eds.), *Learning organizations: Developing cultures for tomorrow's workplace* (pp. 111-122). Portland, OR: Productivity Press.
- Kuhn, T. S. (1970). *The structure of scientific revolutions*. Chicago: University of Chicago Press.
- Leider, R. J. (1997). *The power of purpose: Creating meaning in your life and work*. San Francisco: Berrett-Koehler.
- Leonard-Barton, D. (1995). *Wellsprings of knowledge: Building and sustaining the sources of innovation*. Boston: Harvard Business School Press.
- Louis, K. S., Kruse, S., & Raywid, M. A. (1996). Putting teachers at the center of reform: Learning schools and professional communities. *NASSP-Bulletin*, 80(580), 9-21.
- Marshall, L. J., Mobley, S., & Calvert, G. (1995). Why smart organizations don't learn. In S. Chawla & J. Renesch (Eds.), *Learning organizations: Developing cultures for tomorrow's workplace* (pp. 111-122). Portland, OR: Productivity Press.
- Meyer, J. W., & Rowan, B. (1978). Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology*, 83, 340-363.
- Mintzberg, H. (1994). *The rise and fall of strategic planning*. New York: Free Press.
- Morgan, G. (1993). *Imaginization: The art of creative management*. London: Sage.
- Nias, J. (1989). *Primary teachers talking: A study of teaching as work*. New York: Routledge.
- Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company: How Japanese companies create the dynamics of innovation*. New York: Oxford University Press.
- O'Neil, J. (1995). On schools as learning organizations: A conversation with Peter Senge. *Educational Leadership*, 52(7), 20-23.
- Pascale, R. T. (1990) *Managing on the edge: How the smartest companies use conflict to stay ahead*. New York: Simon and Shuster.
- Pinchot, G., & Pinchot, E. (1994). *The end of bureaucracy and the rise of the intelligent organization*. New York: Berrett-Koehler.
- Polanyi, M. (1966). *The tacit dimension*. New York: Garden City.
- Rosenholtz, S. (1989). *Teachers' workplace: The social organization of schools*. New York: Longman.
- Sarason, S. (1990). *The predictable failure of educational reform*. San Francisco: Jossey-Bass.
- Senge, P. M. (1990). *The fifth discipline: The art and practice of the learning organization*. New York: Doubleday.
- Sergiovanni, T. J. (1992). *Moral leadership: Getting to the heart of school improvement*. San Francisco: Jossey-Bass.
- Skrlic, T. M. (1991). *Behind special education*. Denver: Love Publishing.
- Stacey, R. D. (1992). *Managing the unknowable: Strategic boundaries between order and chaos in organizations*. San Francisco: Jossey-Bass.
- Stewart, T. A. (1997). *Intellectual capital: The new wealth of organizations*. New York: Doubleday/Currency.
- Strong, M. (1996). *The habit of thought: From socratic seminars to socratic practice*. Chapel Hill, NC: New View.
- Tichy, N. M., & Sherman, S. (1993). *Control your destiny or someone else will*. New York: Doubleday.
- Tobin, D. R. (1993). *Re-educating the corporation*. Essex Junction, VT: Oliver Wright Publications.
- Watkins, K. E., & Marsick, V. (1993). *Sculpting the learning organization*. San Francisco: Jossey-Bass.
- Webber, A. M. (1993, January/February). What's so new about the new economy? *Harvard Business Review*, 24-42.
- Wheatley, M. J. (1992) *Leadership and the new science: Learning about organization from an orderly universe*. San Francisco: Berrett-Koehler Publishers.