

The Real Message of the Quality Movement

Building Learning Organizations

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Why do many leaders of the so-called "quality movement" hate the term "the quality movement?" The man most often identified as the father of total quality management, Dr. W. Edwards Deming, takes offense at the assumed parentage. "The term is counterproductive," says Dr. Deming, the man who first taught the Japanese statistical quality control. "My work is about a transformation in management and about the profound knowledge needed for the transformation. Total quality stops people from thinking."

"Neither 'total quality' nor 'total quality management' describes what this approach to management is all about," says Dr. Edward Baker, director of Ford's corporate quality office. "It's about improving the total behavior of organizations, about developing the capability of a system to do what its members actually want it to do — anywhere in life."

Without a unifying conceptual framework, the quality movement in the US risks being fragmented into isolated initiatives and slogans. *The voice of the customer, fix the process not the people, competitive benchmarking, "continuous improvement, policy deployment, leadership* — the more we hear, the less we understand.

"Trying to put together the alphabet soup coming out of Japan of SPC, JIT, QIP, QFD, and so on can be hopelessly confusing without a unifying theme," says Analog Devices CEO Ray Stata.

It is not surprising that, for many, it doesn't add up to much more than

management's latest *flavor of the month* that must be endured until the next fad comes along.

Even those firms where there has been significant commitment to quality management for several years are encountering slowing rates of improvement. "We've picked all the low hanging fruit," as one Detroit executive put it recently. "Now, the difficult changes are what's left."

The "difficult changes" are unlikely without a coherent picture of where we are trying to take our organizations through the quality management process.

Our global competitors — Equally troubling, the best of our international competitors are not fragmenting, they are building — steadily advancing an approach to improving quality, productivity, and profitability that differs fundamentally from the traditional authoritarian, mechanical management model.

"Total quality [TQ] is not a closed-ended methodology; its an open-ended methodology," says Shoji Shiba, of Japan's Tsukuba University. "TQ continues to develop according to the needs of society."

The tools American corporations are racing to master today, the frontier of

the quality movement in Japan in the 1960s, are no longer the frontier. The "thought revolution in management," as quality pioneer Ishikawa called it, is still evolving.

Learning organizations — I believe that the quality movement as we have known it up to now in the US is in fact the first wave in building *learning organizations* — organizations that continually expand their ability to shape their future.

The roots of the quality movement lie in assumptions about people, organizations, and management that have one unifying theme: to make continual learning a way of organizational life, especially improving the performance of the organization as a total system. This can only be achieved by breaking with the traditional authoritarian, command and control hierarchy where the top thinks and the local acts, to merge thinking and acting at all levels.

This represents a profound re-orientation in the concerns of management — a shift from a predominant concern with controlling to a predominant concern with learning. Failure to come to grips with this shift plagues the efforts of many US firms eager to jump on the quality bandwagon.

Learning organizations in Japan... Our Japanese competitors have no trouble with this shift. "Japan's greatest long-term comparative advantage is not its management system, Japan Inc., or quality," says C. Jackson Grayson Jr., of the American Productivity and Quality Center in Houston. "It's the Japanese commitment to learning."

More specifically, as management practices in Japan have evolved over the past 40 years, there has been a steady spread of the commitment to learning — starting with statistical process control (SPC) for small groups of quality experts, to teaching quality improvement tools to frontline

workers throughout the organization, to developing and disseminating tools for managerial learning.

"If we fail to grasp the deeper messages of the quality movement, we will one day awake to discover ourselves chasing a receding target."

Learning waves — The evolution of learning organizations can be best understood as a series of waves. What most managers think of as quality management focuses on improving tangible work processes. This is the first wave.

The first wave of quality... In the first wave, the primary focus of change was frontline workers. Management's job was to:

- Champion continual improvement
- Remove impediments (like quality control experts and unnecessary bureaucracy) that disempowered local personnel
- Support new practices like quality training and competitive benchmarking that drive process improvement.

The second wave of quality... In the second wave, the focus shifts from improving work processes to improving how we work — fostering ways of thinking and interacting conducive to continual learning about the dynamic, complex, conflictual issues that determine system wide performance. In the second wave, the primary focus of change is the managers themselves.

The third wave of quality... These two ways will, I believe, gradually merge into a third, in which learning becomes *institutionalized* as an inescapable way of life for managers and workers alike (if we even bother maintaining that distinction).

We are still in the first wave... American industry is, with a few exceptions, pri-

marily operating in the first wave. "Despite all our improvements, the basic behavior of our managers, especially our senior managers, hasn't really changed much," laments the head of a major corporation's quality office.

Japan and the second wave... By contrast, the second wave is well under way in Japan, driven by their *seven new tools for management*, as distinct from their traditional *seven quality tools* that drove the first wave.

America's challenge... The challenge today, as American companies endeavor to master the basic tools and philosophy of quality management, is not to be caught short-sighted with mechanical "quality programs."

If we fail to grasp the deeper messages of the quality movement, we will one day awaken to discover ourselves chasing a receding target.

The roots of the quality movement

A close look at the roots of the quality movement shows that it has always been about learning.

"The prevailing system of management has destroyed our people," says Dr. Deming. "People are born with intrinsic motivation, self-esteem, dignity, curiosity to learn, joy in learning."

Intrinsic versus extrinsic motivation... Intrinsic motivation lies at the heart of Deming's management philosophy. By contrast, extrinsic motivation is the bread and butter of Western management.

The holiest of holy for the American manager, "People do what they are rewarded for," is actually antithetical to the spirit of quality management. This doesn't imply that rewards are irrelevant. Rather, it implies that no set of rewards, neither carrots nor sticks, can ever substitute for intrinsic

motivation to learn. A corporate commitment to quality that is not based on intrinsic motivation is a house built on sand.

Motivate them or loose their own motivation? Consider, for example the goal of continuous improvement, which remains an elusive target for most American corporations.

Motivate them... From an extrinsic perspective, the only way to get continuous improvement is to find ways to continually motivate people to improve, because people only modify their behavior when there is some external motivation to do so. Otherwise, they will just sit there — or worse, slide backwards. This leads to what workers perceive as management continually raising the bar to manipulate more effort from them.

Loose their motivation with information and appropriate tools... However, from an intrinsic perspective, there is nothing mysterious at all about continuous improvement. If left to their own devices, people will naturally look for ways to do things better. What they need is adequate information and appropriate tools.

From the intrinsic perspective people's innate curiosity and desire to experiment, if unleashed, creates an engine for improvement that can never be matched by external rewards.

Learning and intrinsic motivation to learn have always been the roots of quality — A management system based on intrinsic motivation to learn is as befuddling to Western economists as it is to Western managers.

Princeton economist Alan Blinder recently cited an impressive list of Japanese "violations" of economic orthodoxy — tolerated monopolies and cartels, single suppliers, salary scales that do not differentiate adequately between ranks, keeping

promising young managers waiting too long for promotion, and "almost nothing gets you fired."

"We did the opposite of what American economists said," Blinder quotes a top Ministry of International Trade & Industry (MITI) official. "We violated all the normal rules." But the puzzle of how a nation that does so many things *wrong* can get so many things right dissolves when we realize that Western economic theories, from Adam Smith on, are based solely on extrinsic motivation.

The way we thought it was... Adam Smith's *homo economicus* is presumed to maximize his income, not his learning. The following are some maxims of *US homo economicus*:

- If there is no opportunity for significant salary increase by climbing the corporate ladder, he will have little motivation to do his best or to improve.
- If there is no fear of dismissal, there will be nothing to drive him to be productive.
- If his company, made up of lots of greedy little buggers just like him, does not have to compete against other companies, they will have no motivation to continually lower costs of production, nor to improve their products.

In short, no competition, no innovation. But, if the drive to innovate comes from within, all this changes — especially if a management system can nurture and harness this drive.

Shewhart's and Dewey's roots to quality — But we don't have to look just to subtleties like intrinsic motivation to see that the quality movement has always been about learning.

PDCA... The famous PDCA cycle is evidence enough. No one ever gets far into any introduction to total quality management without learning about Plan-Do-Check-Act, the never-ending cycle of experimentation that structures all quality improvement efforts.

Deming called it the *Shewhart cycle* when he introduced it to the Japanese in 1950, in honor of his mentor Walter Shewhart of Bell Labs. Eventually the Japanese called it the *Deming cycle*.

Of John Dewey, learning and quality... But the roots of the PDCA cycle go back further than Deming or Shewhart, at least as far as the educator, John Dewey.

Dewey posited that all learning involves a cycle between four basic stages:

- Discover: the discovery of new insights, invent, creating new options for action.
- Produce: producing new actions.
- Observe: seeing the consequences of those actions, which leads to new discoveries, continuing the cycle.

This is how we learned to walk, to talk, to ride a bicycle, to act skillfully wherever we have achieved some proficiency. The young child first must discover that they want to walk, invent ways of getting started, act, and observe the consequences of her or his action.

Interrupting the cycle interrupts the learning. If the toddler is supported so they do not fall, they also do not learn.

Learning is moving from thought to action... In effect, Dewey canonized the simple fact that all real learning occurs over time, as we move between the world of thought and the world of action. Learning is never simply an intellectual exercise. Nor is it a matter of changing behavior. It is an interactive process linking the two, in a spiral of continually expanding our capabilities.

It is not altogether irrelevant to note that this is a far cry from the common image of *learning* inculcated in the schoolroom, where most of us

conclude that learning is synonymous with *taking in information* and being able to produce the *right answer* on cue — little wonder that for most adults, the word *learning* does not quicken the pulse.

The PDCA cycle takes Dewey's theory of learning one step further, saying, in effect, that in an organization it is often wise to distinguish *small actions* from wide-spread adoption of new practices.

The *do* stage then becomes pilot tests from which new data can be collected and analyzed (*checked*). Gradually, a series of such pilots results in more general learnings and the *act* stage moves to broader and broader application of new practices.

PDCA American style... While simple in concept, the PDCA cycle is often practiced quite differently in the US and in Japan.

Impatient for quick results, American managers often jump from *plan* to *act*.

The rush to act undermines efforts... We conceive new programs and then begin rolling them out throughout the organization. In fact, that's exactly what many US firms are doing with their total quality programs.

While rolling out new programs makes us feel good about doing something (*acting*) to improve things in our business, in fact we are actually undermining possibilities for learning. Who can learn from an experiment involving thousands of people that is only run one time?

PDCA Japanese style... By contrast the Japanese are masters of organizational experimentation. They meticulously design and study pilot tests, often with many corporations participating cooperatively.

Through repeated cycles, new knowledge gradually accumulates. By the time for organization-wide changes, people adopt new practices more rapidly because so many more have been involved in the learning.

For Americans, this whole process often seems unnecessarily time consuming and costly. As one manager pointed out to me recently, the statement "I'm running an experiment" in most American companies is a code word for "Don't hold me accountable for the results." Consequently, while we may go through the motions of quality improvement, we often get the facade without the substance. At best, we get limited bursts of learning.

Improving how we work

The first wave — Improving tangible work processes (from the production line, to order entry, to responding to customer inquiries or coordinating the typing queue) was the predominant theme of the first wave in building learning organizations.

The initial tools were derived primarily from statistics, including SPC, and related methods for diagraming, analyzing, and redesigning work processes to reduce variability and enable systematic improvement.

As the first wave has unfolded, the focus has broadened to include more complex processes like product development. By and large, the customer was outside the system of production and the system was designed to meet customer needs.

First wave strength... The strength of the first wave lay in achieving measurable improvements in cost, quality, and customer satisfaction through rigorous and reproducible processes of improvement.

First wave limitation... The limitation lay in the relatively passive role of management and the limited impact on the larger *systems* whereby processes interact — for example, how sales, order entry, manufacturing and customer satisfaction interact.

The second wave unfolds — The initial profile of the second wave could be seen in Japan as early as the 1960s when leading firms began to undertake mass deployment of quality tools. Previously, only small groups of quality control experts learned how to analyze work processes, reduce variation, and improve quality and cost.

Japanese quality circles and learning... "Beginning with quality circles," says Massachusetts Institute of Technology's Alan Graham, "that changed. Everyone began to participate in quality improvement." This was the time when *kaizan* (organization-wide commitment to continuous improvement) was born. This also was the time when Japanese organizations began extensive training in team learning skills, to develop the norms and capabilities needed if quality circles were to be effective.

US quality circles and a lack of emphasis on learning... Interestingly, when US firms began to organize production workers in quality circles, 10 to 15 years later, the emphasis was on forming teams, not on developing team learning skills. Consequently, "The skills and practices, both among workers and managers, necessary for QC circles to be effective," according to Graham, "were not present in the introduction of QC circles in the US. This has been typical of the general underemphasis here on skills and practices, as opposed to official programs and management goals."

The result was that many initial efforts at quality control circles in the US failed to generate lasting commitment or significant improvement. "Mid-level

managers," says USC's Ed Lawler, "saw QC circles as a threat to their authority, and workers saw them as a gimmick to elicit increased effort and undermine union influence."

The second wave arrives — In Japan, the second wave arrived in full force with the introduction of the *seven new tools for management* in 1979.

The seven new tools... These tools, the work of a committee of the Society for QC Technique Development that operated from 1972 to 1979, focus specifically on how managers think and interact. They particularly emphasize developing better communication and common understandings of complex issues, and relating that understanding to operational planning.

"There are a lot of methodologies for measuring, analyzing, and testing quantitative data," says the leader of the group that developed the new tools, Professor Shiba, "but the area of qualitative methodologies, how to create hypotheses, is very weak. Professor Jiro Kawakita, a Japanese anthropologist, developed methods for analyzing non-numerical data and making sense of that data."

For example, the *KJ method* or affinity diagram, as taught by Professor Shiba and other experts on the *seven management tools*, help teams gather large amounts of non-quantitative data and organize it into groupings based on natural relationships or affinities. Other tools help to clarify interrelationships, establish priorities, and think through and plan the complex tasks required for accomplishing an agreed upon goal.

A new perspective of the customer... Along with these new tools for thinking and interacting, a new orientation toward the customer has gradually emerged. The new perspective moved from *satisfying the customer's expressed requirements to meeting the latent needs of the customer.*

The Miata as a second wave example... As one Detroit executive put it, "You could never produce the Mazda Miata from market research. You have to understand what the customer would value if he experienced it." In the second wave, the customer becomes part of the system. There is an interplay between what the firm seeks to produce and what the customer desires.

The second wave in America... Today, a small number of American companies are starting to experiment with the seven new management tools.

They are discovering a whole new territory for increasing organizational capabilities — how we think and interact around complex, potentially conflictual issues. This is the real message of the second wave — leverage ultimately lies in improving us, not just improving our work processes.

Engelbart's A, B and C work — "There are three levels of work in organizations," says computer pioneer and inventor of the *mouse* Douglas Engelbart, who has spent the better part of 20 years studying the nature of collaborative work.

"The most obvious level, *A work*, involves the development, production, and sale of a firm's products and services. Most of a company's people and resources are focused at this level.

Effective *A work* would be impossible, however, without the next level, *B work*, which involves designing the systems and processes that enable a company to develop, produce, and sell its products and services.

But, the subtlest and potentially most influential level is *C work*, improving how we think and interact. Ultimately, the quality of *C work* determines the quality of systems and processes we design and the products and services we provide."

The first wave and B work... The major contribution of quality management in the first wave was to focus time and energy systematically on Engelbart's *B work*, especially on improving processes, and to provide tools for the task.

The second wave and C work... The major contribution of the second wave will be to systematically focus on Engelbart's *C work*. This, too, will require appropriate tools. But, before such tools can be developed, we must first understand the *core competencies of learning organizations*, those distinctive capabilities in thinking and interacting which will enable us to "continually improve the total behavior of organizations."

Core competencies for learning organizations — The seven new tools point in the right direction. But, our work suggests that they are only a start to developing an organization's capabilities in:

Building shared vision — There is no substitute for organizational resolve, conviction, commitment, and clarity of intent. They create the need for learning and the collective will to learn. Without shared visions, significant learning occurs only when there are crises, and the learning ends when the crises end.

Personal mastery — Shared vision comes from personal visions. Collective commitment to learning comes from individual commitment to learning. An organization that is continually learning how to create its future must be made up of individuals who are continually learning how to create more of what truly matters to them in their own lives.

Working with mental models — Organization become frozen in inaccurate and disempowering views of reality because we lack the capability to *see our assumptions*, and to continually challenge and improve those assumptions. This requires fostering managerial skill: in *balancing inquiry and advocacy* in organizations that have been traditionally dominated by advocacy.

Team learning — Ultimately, the learning that matters is the learning of *groups of people who need one another to act* (the real meaning of team). The only problem is that we've lost the ability to talk with one another. Most of the time we are limited to *discussion*, which comes from the same roots as percussion and concussion and literally means *to heave one's views at the other*. What is needed also is *dialogue*, which comes from the Greek *dia logos* and literally means when a group of people talk with one another such that the meaning (*logos*) moves through (*dia*) them.

Systems thinking — It's not just how we learn, but what we learn. The most important learning in contemporary organizations concerns gaining shared insight into complexity and how we can shape change. But, since early in life, we've been taught to break apart problems.

The resulting fragmentation has left us unable to see the consequences of our own actions, creating an illusion that we are victims of forces outside our control and that the only type of learning that is possible is learning to react more quickly. Systems thinking is about understanding wholes, not parts, and learning how our actions shape our reality.

Creating an organizational symphony — The intrinsic limitations to each of these capabilities is only overcome if they are developed in concert:

- Empowering people (an organization-wide commitment to personal mastery) empowers the organization, but only if individuals are deeply aligned around a common sense of purpose and shared vision.
- Shared vision will energize and sustain an organization through thick and thin, but only if people think systemically: once people are able to see how their actions shape their reality, they begin to understand how alternative actions could create a different reality.
- Individual skills in reflection and inquiry mean little if they cannot be practiced when groups of people confront controversial issues.

- Systems thinking will become the province of a small set of *systems experts* unless it is tied to an organization wide commitment to improving mental models, and even then nothing much will change without shared visions.

- A commitment to seeing the larger system only matters when there is a commitment to the long-term. In the short run, everyone can just fix their piece. Only with a long term view can an organization see that optimizing the parts, one at a time, can lead to sub-optimizing the whole.

A short study on learning as a way of organizational life

In 1970, Royal/Dutch Shell was arguably the weakest of the *big seven* oil companies. Today, it is one of the strongest. A key to Shell's ascent has been reconceiving *planning as learning*, a conscious process of bringing operating managers' mental models to the surface and challenging those models.

Shell's scenario planning — This conceptual shift has been operationalized by tools like scenario planning. Through its use of scenarios, Shell's planners help managers continually think through how they would manage under multiple possible futures. Today, it is hard for a Shell manager to do business planning without engaging in a conscious learning process.

Shell has become perhaps the first global corporation to realize the leverage the institutionalizing learning as the most effective approach to strategy in a turbulent world. "The corporate one-track mind," says former planning chief Arie de Geus, "is the single primary reason why so many once successful corporations fail to survive beyond their infancy."

From a foreboding view to a new form of planning... Shell's innovations in institutional learning were driven by necessity. As early as 1971, Shell's

planners became convinced that major shocks in supply and price were becoming a possibility in world oil markets. But, they were unable to convince managers conditioned by the stability of world markets in the 50s and 60s.

This led the planners to develop scenario planning *exercises*, wherein managers thought through how they would manage if there were a shift from a buyer's market to a seller's market, where sudden changes in price would be a part of life, regardless of whether or not they expected such a change.

Prepared for change in the 70s... When OPEC did become a reality and the first oil shocks hit in the winter of 1973 and 1974, Shell responded differently than any other big oil company. It increased local operating company control rather than increasing corporate control. It accelerated development of reserves, especially in its North Sea fields. While the other major oil companies saw a sudden, unexpected crisis and acted accordingly, Shell's managers perceived a sea change in the basic nature of the business, and acted differently.

Shell's scenario planning and the 80s... The discipline of thinking in terms of alternative futures served Shell equally well in the 80s. Shell planners created a *\$15 a barrel oil scenario* in 1983, at a time when prices averaged around \$30. They considered two alternative futures:

Alternative future one: As managers considered how they would manage in a depressed price world, they quickly concluded that many of their present production processes would have to be shut down because they were too costly.

Alternative future two: A few engineers suggested that radical redesign of their oil platforms using new miniaturization technologies could make them operable at prices as low as \$11 per barrel.

As they considered the plan, it soon became obvious that such a redesign was in fact more desirable under any possible scenario!

Their production people went ahead with the new design concepts. And when prices did fall, hitting an unbelievable \$8 per barrel in 1984, Shell was, once again, one step ahead of its competitors.

Organizational learning alternatives — Institutionalizing learning as part of the planning process is one of many possible approaches. It's clear that many Japanese companies have institutionalized learning around quality improvement teams and related innovations.

There is no shortage of ways by which learning may become an inescapable aspect of organizational life, once the nature of the commitment to learning is understood, and once appropriate tools are available.

Institutionalized experimentation... "Institutionalizing experimentation can make an enormous difference," says Harvard's Dave Garvin. "For example, Allegheny Ludlum, one of the most profitable American steel companies, treats its entire production process as a laboratory for experimenting with new processes and technologies. Production managers can designate experiments they want to conduct and an entirely different set of measures and standards are used to evaluate their efforts."

Managerial microworlds... Another means to institutionalizing learning, the focus of our research at MIT, involves developing *managerial microworlds*, practice fields for management teams.

A financial services microworld: For example, in a microworld designed for a leading property and liability insurance company, managers discover how many of their most trusted

practices, when they interact in the larger systems of which they are a part, actually contribute to runaway settlement and litigation costs.

Using a computerized *management flight simulator*, they are then able to freely experiment, in ways that would be difficult in real insurance offices, with a wide range of alternative personnel, workflow and quality management practices to find where there may be leverage in reversing the growing insurance crisis.

Eventually, we envision such microworlds being as common place in organizations as meeting rooms. There will be places where we gather to think through complex issues and learn through experimentation when trial and error learning is impossible in the real system.

Activity based cost accounting... Another potential breakthrough lies in changing managerial accounting practices to reinforce learning rather than controlling.

"Managers and manufacturing engineers," says Harvard's Robert Kaplan "frequently comment that considerable operating improvements they achieve go unrecognized in their financial results."

If the emphasis is on continuous, system wide improvement, how can we have accounting practices based on historically determined standards? "Traditional cost accounting measures fail when they focus on small, local (but not system wide) measures of efficiency and productivity."

Why becoming a learning organization matters

Seeing quality management as part of a deeper and even more far reaching shift leads to several realizations into why the unfolding changes in American management practices may not produce an enduring transformation.

First wave quality is still not well understood in the US — Despite enormous attention, public commitment by prominent corporations, and even a national award, there is a distinct possibility that American management still does not understand what the quality movement is really all about.

Specifically, we lack understanding of what is required for even first wave quality management practices to take root, and why they often fail to take root in American firms.

Confusion over the connections between learning, teams, standards, motivations and innovation... The total quality management task force at one of America's most successful high-tech manufacturing firms recently came unglued around a question of standards.

The external consultant brought in to help develop and implement the TQM strategy argued that standards and standardization were vital to gain better control of the organization's production processes, so that they could be improved. But, to some of the firm's managers, standardization meant rigidity, and a loss of freedom and respect for workers' creativity and individuality.

"Everything becomes vanilla," argued one manager. "We will kill the spark of individual creativity that has made this company what it is."

"If you're not operating in a learning orientation," observed MIT's Dan Kim, "you hear *standardization* differently than if you are. People internalize the need to improve as, *I must be deficient*. Naturally, they then resist what they perceive as an effort to make their deficiencies public and *fix them*."

Confusion over the meaning of continuous and control... The same happens with continuous improvement. Within a learning culture, continuous improvement is a natural by-product of people's

commitment and empowerment. Within a controlling culture it is an admission of deficiency. "Why must I improve, unless I'm not good enough now?"

From such a view point, continuous improvement is about becoming less deficient. It is not about learning. This is why it is so deeply resisted by workers in many US companies.

In response to this resistance, managers with good intentions resort to exhortation and to driving *highly mechanized* quality programs through their organizations. This creates a vicious cycle of increasing exhortation and increasing resistance. What is needed is understanding and changing the source of the resistance, which stems from bringing tools for learning into a managerial system based on controlling.

We still believe controlling people is more important than creating a learning environment — The second realization is that there is nothing in the American bag of quality tools today that will cause the shift to a learning orientation. And causing such a shift is exactly what is needed in most American corporations. Without a shift of mind from controlling to learning, or as Kim puts it, from "protect and defend" to "create and learn," we "get the tools for quality management without the substance."

Learning cannot be switched on... Creating such a shift is an organic process, not a mechanical one. It demands penetrating to deep levels of the corporate psyche and unearthing and examining deep fears.

What will it take to change? To put it bluntly, the shift will not occur if it is not within us. It cannot be faked. It cannot be achieved by public declarations. If at some basic level, we do not genuinely value and truly desire to live life as learners, it will not happen.

My experience is that it can only be caused by small groups of thoughtful leaders who truly desire to build an organization where people are committed to a larger purpose and to thinking for themselves.

Such thoughtful groups then must be willing to become models of continually learning, with all the vulnerability and uncertainty that implies. They become lead users of new learning tools and approaches.

Public and organizational learning/education are linked — The last, and potentially most important, realization is that the transformation in corporate and public education may be linked.

"Humans are the learning organism *par excellence*" according to anthropologist Edward T. Hall. "The drive to learn is as strong as the sexual drive — it begins earlier and lasts longer."

If the drive to learn is so strong, why is it so weak in our corporations? What happened to our "intrinsic joy in learning," as Dr. Deming puts it. The answer according to Deming, Hall, and many educators lies, surprisingly, as much in the classroom as on the factory floor. "The forces of destruction begin with toddlers," says Deming, "... a prize for the best Halloween costume, grades in school, gold stars — and on up through the university."

Performing versus learning... The young child in school quickly learns that the name of the game is not learning it is *performing*. Mistakes are punished, correct answers rewarded. If you don't have the right answer, keep your mouth shut.

If we had operated under that system as two-year olds, none of us would have ever learned to walk. Is it any wonder the manager or worker shows little intrinsic motivation of *learn* — that is, to experiment and discover new insights from *mistakes*, out-

comes that don't turn out according to plan.

If the conditioning toward performing for others rather than learning is so deeply established in schools, it may not be possible to reverse it on the job. If knowledge is always something somebody else has and I don't, then learning becomes embedded in deep instincts of self-protection not free experimentation.

If the identification of *boss* with *teacher*, the authority figure who has the answers and is the arbiter of our performance is so firmly anchored, we may never be able to roll up our sleeves and all become learners together.

Today, there is no lack of corporate concern for the erosion in our public education. But, there is a lack of vision as to what is truly needed. It is not enough to go back to the 3R's. We must revolutionize the school experience so that it nurtures and deepens our love of learning, develops new skills of integrative or systemic thinking, and helps us learn how to learn, especially together.

Final thoughts

I recently asked Dr. Deming if he thought it was possible to fully implement his philosophy of management without radical reform in our schools, as well as in our corporations. "No" was his answer.

However, if we come to a deeper understanding of the linkage between school and work in the 21st century, we may be able to generate a wholly new vision and commitment to the vital task of rethinking both. This may be the real promise of the *learning organization*. ♦