

If intrinsic motivation is at the heart of Japanese management philosophy, then extrinsic motivation is the badge of a Western mind-set. Can our old system learn new tricks?

It's the Learning:

The Real Lesson of the Quality Movement

Peter Senge

Why do many leaders of the so-called "quality movement" hate the term? In fact, the man most often identified as the father of total quality management, W. Edwards Deming, takes offense at the assumed parentage.

"The term is counter-productive," said 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."

Without a unifying conceptual framework, the quality movement in the United States risks being fragmented into isolated initiatives and slogans. The "voice of the customer," "fix the process rather than the people," "competitive benchmarking," "continuous improvement," "policy deployment," "leadership"—the more we hear, the less we understand.

Even those firms that have had significant commitment to quality management for several years are encountering slowing rates of improvement. "We've picked all the low-hanging fruit," one Detroit executive said recently. "Now, the

difficult changes are what's left."

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.

The tools U.S. 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 K. Ishikawa called it, is still evolving.

The quality movement as we have known it up to now in the United States 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—and by merging thinking and acting at all levels.

Failure to come to grips with this shift—from a predominant concern with controlling to a predominant concern with learning—plagues the efforts of many U.S. firms eager to jump on the quality bandwagon.

How learning made 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.

The first wave of quality. In the first wave, the primary focus of change has been front-line workers. Management's job has been to:

- **Champion continual improvement.**
- **Remove impediments**, such as quality control experts and unnecessary bureaucracy, that disempower local personnel.
- **Support new practices** such as quality training and competitive benchmarking that drive process improvement.

The second wave of quality. Now 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. And so the primary focus of change

has been the managers themselves.

The third wave of quality. These two waves 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 to maintain that distinction).

U.S. industry is, with a few exceptions, operating primarily in the first wave. By contrast, the second wave is well under way in Japan.

Why quality is an inside job

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 Deming. "People are born with intrinsic motivation, self-esteem, dignity, curiosity to

learn, joy in learning."

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

The holy adage for the U.S. 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.

Consider, for example, the goal of continuous improvement, which remains an elusive target for most U.S. corporations.

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.

From an intrinsic perspective, however, 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. All they need is adequate information and appropriate tools.

"TOTAL QUALITY STOPS PEOPLE FROM THINKING."

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.

Outside evidence

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

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

all quality improvement efforts.

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

But the roots of the PDCA cycle go back further than Deming or Shewhart, at least as far as the educator John Dewey (see sidebar).

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 widespread adoption of new practices.

While simple in concept, the PDCA cycle is often practiced quite differently in the United States than in Japan. Impatient for quick results, U.S. managers often jump from plan to act.

U.S. managers conceive new programs and then begin rolling them out throughout the organization. In fact, that's exactly what many U.S. 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, we are, in fact, undermining possibilities for learning. Who can learn from an experiment involving thousands of people that is only run one time?

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. When it's time to implement organization-wide changes, people adopt new practices more rapidly

because so many more have been involved in the learning.

For the United States, this whole process often seems unnecessarily

rigorous and reproducible processes of improvement. The limitation lay in the relatively passive role of management and

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time-consuming and costly. Consequently, while we may go through the motions of quality improvement, we often get the facade without the substance: we get limited bursts of learning.

First wave: processes made perfect

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

Initial tools were primarily derived from statistics, including statistical process control (SPC) and related methods for diagramming, analyzing, and redesigning work processes to reduce variability and enable systematic improvement.

While the focus has broadened to include more complex processes, such as product development, by and large the customer has been outside the system of production, even as the system has been designed to meet customer needs.

The strength of the first wave lay in achieving measurable improvements in cost, quality, and customer satisfaction through

the limited impact on the larger systems whereby processes

The Dewey learning system

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

- **Discover:** the discovery of new insights.
- **Invention:** 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 learn to walk, to talk, to ride a bicycle—to act skillfully wherever we have achieved some proficiency. The young child first must discover that he or she wants to walk, invent ways of getting started, act, and observe the consequences of her or his actions.

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

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 to continually expand our capabilities.

interact—for example, how sales, order entry, manufacturing, and customer satisfaction interact.

The second wave: going in circles

The earliest signs 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.

“Beginning with quality circles, that changed,” says Alan Graham of Massachusetts Institute of Technology. “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.

Interestingly, when U.S. firms began to organize production workers in QCs ten to 15 years later, the emphasis was on forming teams, not on developing team learning skills. Consequently, “The skills and practices among both workers and managers necessary for QCs to be effective were not present in the introduction of quality control circles in the United States,” according to Graham. “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 QCs in the United States failed to generate lasting commitment or significant improvement.

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

These tools (the activity network diagram, affinity diagram, relationship diagram, prioritization matrices, structure tree, matrix diagram, and process decision program chart), the work of a committee of the Society for Quality Control Technique Development that operated from 1972 to 1979, focus on how managers think and interact. They particularly emphasize better communication and common understandings of complex issues, and in turn relate that understanding to operational planning.

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Today, a small number of U.S. companies are starting to experiment with the seven 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.

These seven tools point in the right direction. But our work suggests that they are only a start to developing an organization's capabilities in:

- 1) *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.
- 2) *Personal mastery.* 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.
- 3) *Working with mental models.* Organizations become frozen in inaccurate and disempowering views of reality because they lack the capability to see their

assumptions and to continually challenge and improve them.

- 4) *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; what's also needed is dialogue, which comes from the Greek *dia-logos*, meaning that when a group of people talk with one another, the meaning (*logos*) moves through (*dia*) them.
- 5) *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 early in life, we were taught to break problems apart.

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.

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 systematically. 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 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.

- 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.

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

Why becoming a learning organization matters

Seeing quality management as

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

Despite enormous attention, public commitment by prominent corporations, and even a national award, there is a distinct possibility that U.S. 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 U.S. firms.

Realization 1: 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 viewpoint, continuous improvement is about becoming less deficient. It is not about learning. This is why it is so deeply resisted by workers in many U.S. companies.

In response to this resistance, managers with good intentions resort to exhortation and driving highly mechanized quality programs through their organizations. This creates a vicious cycle of increasing exhortation and 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 control.

Realization 2: 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 U.S. corporations.

Creating such a shift is an organic process, not a mechanical one. It demands penetration 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.

Change can only be initiated 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 continual learning, with all the vulnerability and uncertainty that implies. They become lead users of new learning tools and approaches.

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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 Deming put it?

The answer, according to Deming, Hall, and many educators, lies surprisingly as much in the classroom as on the factory floor.

The young child in school quickly learns that the name of the game is not learning, but 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 2-year-olds, none of us would have ever learned to walk. Is

it any wonder the manager or worker shows little intrinsic motivation to learn—that is, to experiment and discover new insights from mistakes?

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 "3Rs." 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.

I once asked 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. His answer? A resounding "No."

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 whole new vision and

commitment to the vital task of rethinking both. This may be the real promise of the learning organization.

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