Excellence: It's in the Cards

By Christopher Storey

A new training exercise illustrates an important principle of total-quality control as taught by W. Edwards Deming: most of the errors attributed to individual employees are actually the responsibility of management.

I faced a challenge in 1985, when I was an organizational development and training specialist for a health-maintenance organization. Top management wanted to improve the HMO's competitive position, and asked me to develop an excellence program to train managers and physicians in skills that would result in better-quality care and service, and lower costs for the organization.

At the same time, I learned about the teachings of W. Edwards Deming, an expert on quality, productivity, and competitive position, who seemed to have practical answers for the achievement of excellence.

Deming is revered in Japan for his statistical and managerial methods, which have governed Japan's economic growth since World War II. Already known to the Japanese as an expert on industrial quality control, he was invited to Japan in 1950 to speak

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to 50 top executives on the continuous improvement of quality and the resulting increase in productivity. Japanese industry leaders created important awards in Deming's name, which have been presented annually since 1950.

Deming became nationally known in the United States in 1980 when he was featured on an NBC White Paper called "If Japan Can, Why Can't We?" Now 89, Deming maintains a schedule of seminars around the world and consults with clients such as Ford Motor Company and Polaroid Corporation.

The "Deming Way" is a system of continuous improvement, based on statistical methods, that must be initiated by top executives and implemented throughout a company. It brings out the best in people, eliminates fear, and allows employees to take pride in their work.

The red bead game

For an all-day management workshop to launch my new excellence program for the HMO, I planned to borrow Deming's red bead game. William B. Gartner and M. James Naughton



describe the game as follows:

"Deming asks for 10 volunteers from the attendees. Six of the students become workers, two become inspectors of the workers' production, one becomes the inspector of the inspectors' work, and one becomes the recorder. Dr. Deming mixes together 3,000 white beads and 750 red beads in a large box. He instructs the workers to scoop out beads from the box with a beveled paddle that [has indentations for] 50 beads at a time. Each scoop of the paddle is treated as a day's production. Only white beads are acceptable. Red beads are defects.

"Invariably, each worker's scoop contains some red beads. Deming plays the role of the manager by exhorting the workers to produce no defects. When a worker scoops few red beads [he or she] may be praised. Scooping many red beads brings criticism and an exhortation to do better, otherwise 'we will go out of business.' The manager reacts to each scoop of beads as if it had meaning in itself rather than as part of a pattern..."

"The actual number of red beads scooped by each worker is out of that worker's control. The worker, as Dr. Deming says, 'is only delivering the defects.' Management, which controls the system, has caused the defects through design of the system [all aspects of the organization and environment, including personnel, equipment, procedures, processes, raw materials and schedules]."

(From "The Deming Theory of Management," *The Academy of Management Review*, January 1988.)

People draw various insights from the red bead experiment. Mary Walton lists the following in *The Deming* Management Method (1986):

- Variation is part of any process.
- Planning requires predictions of how things and people will perform.
- Tests and experiments of past performance can be useful, but not definitive.
- Employees work within a system that is beyond their control. The system, not individual workers' skills, determines how they perform. Workers are responsible for only 15 percent of the problems; the system is responsible for the other 85 percent.
- Only management can change the system, because management is responsible for it.
- Some workers will always perform above the average, some below.

The trade poker game

I couldn't conduct the bead game because I had neither the beads nor the special paddle, so I decided to use playing cards. Instead of dipping for beads, my workshop participants would draw cards, with face cards instead of red beads counted as defects.

The game is part of a seminar for managers. The leader asks five people to play the role of workers for a hypothetical company; a sixth person is designated as their manager. The seminar leader has a dual role—CEO of the company, and game leader.

Each of the five workers is given a sealed deck of poker playing cards. Just for fun, the game leader asks everyone to inspect the seals carefully for tampering and acknowledge that none

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is evident. That bit of hoopla gets people involved initially in the game. Next, the leader draws a score sheet with places for each worker's name and scores for each of five days of work. Each employee opens his or her deck and removes the two jokers and instruction cards. After shuffling their decks, employees place the decks face down on the table.

Workers are told to draw five cards from the top of their decks. Face cards are counted as defects or mistakes in their work. As in the bead game, the workers are urged to care about the welfare of the company. Naturally, some or all the workers turn up one or more face cards; the supervisor records the number of face cards next to each worker's name.

After the manager records the scores, the game leader puts on his or her CEO hat and exhorts the manager to counsel the workers with the most defects and to praise the ones with just one or zero defects. The CEO can rave on: "Tell those workers to care about the welfare of the company." The manager, who by now is warming to the role, pleads with the workers to do a better job.

For the second round, representing

the second day of work, the game leader relents and says that if the workers draw cards that allow them to form pat poker hands (see "For Poker Novices Only"), then the face cards used in the pat hands will not count as defects. The game leader can display a chart illustrating the pat hands. Workers also have 15 seconds to trade any cards they want with other players in order to make pat hands.

The trade poker game is based on the odds that a professional gambler will be able to make five pat hands every time from a draw of 25 cards.

During the second round, the noise level rises and players are quick to trade cards. Occasionally one or two people are reluctant, possibly because they have no face cards and don't realize they could help someone else make a pat hand. At the end of fifteen seconds, the supervisor again records "mistakes." Day Two usually has the highest error rate of all, because people are not used to trading cards. The CEO acts unhappy and berates the manager, who in turn coaches the workers to pay more attention.

The third, fourth, and fifth rounds run the same way. The manager records errors and the CEO keeps ranting and raving. On each successive round, workers get better at trading cards, and by the end of the fifth round, zero defects are usually recorded and reported to top management. Sometimes the manager will start to take cards from one player to help another make a pat hand. Sometimes a player will stack his or her deck, or save "good" cards from hand to hand, or even report results different from those in his or her hand.

Somewhere between the third and fifth rounds, players and audience start to understand what the demonstration says about their real-life work situations. At the debriefing after the game, someone usually says that cheating was behind the zero-defect scores. As Naughton said in a letter to Deming describing the game, the workers do cheat, but cheating is often the only sensible course open to them, given the system they have to work with, and the result management requires.

Stacking the deck

The deceptively simple game allows participants to gain insight into what they may have perceived in real life but couldn't articulate. In addition to all the points illustrated by the red bead game,

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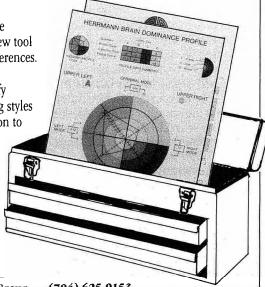
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the trade poker game also demonstrates that

- Part of internal politics on the job is doing whatever makes you look good with the boss. William W. Scherkenbach says in *The Deming Route to Quality and Productivity: Roadmaps and Roadblocks*, "An example I see too often in American industry is the reality of the boss being the employees' most important customer."
- Employees will cover for each other to beat the system, if they cooperate rather than compete with one another.
- Employees are punished for accurately reporting system results, and are rewarded for providing the answers management requires.
- Upper management doesn't know the true number of defects (or mistakes or errors) that are being passed on to the customer.

The trade poker game has been an excellent training exercise. It replicates the real world, involves the participants and the audience quickly, and demonstrates rather than teaches complicated lessons.

For Poker Novices Only

Trade poker is a variation of draw poker. It uses five decks of 52 cards each (no jokers). Each deck has four suits: spades, hearts, diamonds, and clubs. Suits have no effect on the value of a hand; the value is in the ranking of the cards within the suits, with Aces being highest, then Kings, Queens, and Jacks, and from 10s down to twos.

In draw poker, all cards are dealt face down; players draw for cards after the first betting round. A pat hand in draw poker is a hand that doesn't need any other cards drawn to it. Pat hands allowed in trade poker:

- Royal flush—the Ace, King, Queen, Jack, and 10 of one suit;
- Flush—five cards of one suit, not in any particular order;
- Straight—five consecutive cards of random suits;
- Straight flush—five consecutive cards of one suit, for example, the 10, nine, eight, seven, and six of hearts:
- Full house—three of a kind and a pair, for example, three kings and two eights.