

# Leadership Styles for Deming-Based Management Systems

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*Quality management pioneer W. Edwards Deming described his system of thought with a series of 14 points. Although his system was meant to replace traditional management practices, Deming failed to recommend a specific leadership style. Others have since attempted to fill the gap. This paper reviews several leadership styles, specifically in relation to the 14 points. Traditional management based in transactional leadership appears to be inconsistent with Deming's thought, whereas a flexible leadership style, incorporating both transformational and distributed leadership, appears to be consonant with his 14 points. Recommendations are made for professionals who are interested in incorporating Deming's system into their organizations.*

*Keywords: leadership styles, Deming, total quality management, TQM, transformational, distributed, participative, teams*

## INTRODUCTION

Quality “guru” W. Edwards Deming, a statistician from the U. S., was invited to Japan in the wake of World War II to conduct a census, but in 1950 he began to share his philosophy of management with Japanese business leaders (Baker, 2017). Although Japanese industry was destroyed in the war, and the inhabitants were facing starvation in a land poor in natural resources, Deming preached a message of hope: The greatest resource that a nation can possess is its people (Walton & Deming, 1988). This humanistic outlook proved fruitful, and by the late 1950s the Japanese economy was second only to the U. S. (Deming, 1986).

Immediately after World War II, the U. S. was the only nation whose industrial infrastructure remained intact, and as a result, the U.S. enjoyed a buyer's market, and an industry based on quantity over quality took hold, since there were no competitors (Goetsch & Davis, 2013). When the results of Deming's work reached fruition in Japan, U. S. industries found that they could not remain competitive. In 1980, the investigative television show NBC White Paper aired the program *If Japan can, why can't we?* through which Americans learned for the first time about the work of W. Edwards Deming (Baker, 2017).

After the White Paper was aired, Deming began teaching a series of 4-day seminars for interested companies (Baker, 2017). Deming would refuse to collaborate with a company unless the top management was involved—He was nearly 80 years old when the NBC White Paper was aired, and he decided that he didn't have time to waste on firms that were unlikely to embrace his ideas (Walton & Deming, 1988). He first introduced his teachings to a wider audience through the publication of the book *Out of the Crisis* (Deming, 1986).

Instead of expounding a theory, Deming (1986) originally illustrated his teachings through a series of 14 “points.” Although these points continued to be influential, Deming later augmented them with his system of profound knowledge (SOPK), which was introduced with the publication of *The New Economics for Industry, Government, Education* (Deming, 1993). Deming believed that his 14 points, quoted below, could be viewed as consequences of the SOPK (Deming, 1993).

1. Create constancy of purpose toward improvement of product and service. . .
2. Adopt the new philosophy. . . Western management must awaken to the challenge, must learn their responsibilities, and take on leadership for change.
3. Cease dependence on mass inspection to achieve quality. Eliminate the need for inspection on a mass basis by building quality into the product in the first place.
4. End the practice of awarding business on the basis of price tag. . .
5. Improve constantly and forever the system of production and service. . .
6. Institute training on the job.
7. Institute leadership. The aim of supervision should be to help people . . . to do a better job.
8. Drive out fear, so that everyone may work effectively for the company.
9. Break down barriers between departments. . .
10. Eliminate slogans, exhortations, and targets for the work force. . .
11. Eliminate work standards (quotas). . .
12. Remove barriers . . . to pride of workmanship.
13. Institute a vigorous program of education and self-improvement.
14. Put everybody in the company to work to accomplish the transformation. The transformation is everybody’s job. (Deming, 1986, pp. 23-24)

The SOPK consists of four parts: “appreciation of a system, knowledge about variation, theory of knowledge, and psychology” (Deming, 1993, p. xix). Systems thinking declared that the whole is greater than the sum of the parts, and that management of the system required holistic thinking. The statistical theory of variation posited that variation can be broken into two parts, variation that is inherent to the system and variation that intrudes into the system. When one is confused for the other, blame is placed where it does not belong, and improvement is difficult or impossible. Epistemology, or the theory of knowledge, recognized the importance of the scientific method for organizational learning. By psychology, Deming recognized the importance of human flourishing, as well as the acceptance of individual differences; it was this aspect of his teaching that separated him from other management specialists (Deming, 1993).

Deming’s management philosophy, as contained in the 14 points and the SOPK, is frequently referred to as Total Quality Management (TQM). This paper will examine Deming’s teachings from the perspective of leadership styles theory. Based on a preliminary review of the literature, Deming-based leadership is consonant with aspects of several leadership styles, though perhaps not identical with any one of them. This paper will attempt to correlate specific leadership styles with the various elements of Deming’s thought. The findings may be of interest to leaders who wish to adopt quality management practices into their work.

## **REVIEW OF THE LITERATURE**

Although leadership features strongly in the 14 points and the SOPK, Deming did not identify his theory with a specific leadership style. Although highly critical of traditional management, his own prescriptions were embedded in a maze of colorful examples. Regarding the identification with specific leadership styles, other researchers have attempted to fill the gap.

Anderson, Rungtusanatham, and Schroeder (1994) acknowledged that the widespread adoption of Deming’s quality management “served to propel practice ahead of formalized theory” (p. 473). In their formulation, the Deming method creates an organization that “fosters cooperation and learning for facilitating the implementation of process management practices, which . . . leads to continuous improvement of processes, products, and services, and to employee fulfillment. . . which are critical to customer satisfaction and . . . to firm survival” (p. 473). They examined Deming’s 14 points and concluded that its strength lay in the combination of behavioral and methodological practices. They found seven

concepts undergirding Deming's management method: visionary leadership, internal and external cooperation, learning, process management, continuous improvement, employee fulfillment, and customer satisfaction.

McNary's (1997) work had the advantage over Anderson, Rungtusanatham, and Schroeder (1994) in that it was written after the publication of *The new economics for industry, government, education* (Deming, 1994), in which Deming expounded his system of profound knowledge. Following up on Deming's statement that the "14 points follow naturally as application of the system of profound knowledge" (p. 96), McNary (1997) developed a survey that tested managers' adherence to the SOPK. McNary (1997) found that the scores of managers who subscribed to the Deming management method were statistically different from those managers who did not: They scored higher in the use of factors related to the four components of the SOPK.

Sosik and Dionne (1997) identified five factors based on Deming's (1986) 14 points: "change agency, teamwork, trust-building, short-term goal eradication and continuous improvement" (p. 447). They compared these with laissez-faire, management by exception, transactional, and transformational forms of leadership. They argued that laissez-faire leadership was negatively related to all five factors; that management by exception was negatively related to the first four factors, but positively related to continuous improvement provided leadership introduces "productive organizational change through error searching, deviation monitoring and process control" (p. 457); that transactional leadership was negatively related to short-term goal eradication, positively related to trust building, and positively related to change agency, continuous improvement, and teamwork, provided leadership considers these "to be appropriate paths for the followers to achieve their goal" (p. 458); and that transformational leadership is positively related to all five factors. Finally, they caution that "the application of a generic leadership style may not result in follower behavior consistent with Deming's TQM process" (p. 460). In other words, the implementation of Deming's 14 points cannot occur in a vacuum—they must be paired with appropriate management styles.

Gapp (2002) explored the evolution of leadership styles in companies whose management systems were based on the SOPK. Using the Total Quality Management Survey (TQMS) and the Leadership Opinion Questionnaire (LOQ), he found that as TQMS scores increased over time, LOQ sub scores also changed. Specifically, Gapp (2002) focused on scores for structure, which measures planning, scheduling, and communicating; and scores for consideration, which focuses on mutual trust and respect. At the beginning of the study, leadership scored higher in structure than in consideration, but as time went on, leaders scored high on both dimensions. Gapp (2002) concluded that adoption of the SOPK was correlated with changes in management styles that were supportive of the SOPK.

Ehigie and Akpan (2004) found that "in all organizations that have implemented TQM, there had existed another management technique prior to the implementation of TQM" (p. 25). They focused on two aspects of management: performance, which is work-centered, and maintenance, which is employee-centered. This leads to four combinations: (1) high performance-high maintenance, (2) high performance-low maintenance, (3) low performance-high maintenance, and (4) low performance-low maintenance. Their study of TQM and non-TQM based organizations led to the following conclusions: Workers were more likely to embrace TQM when leaders were perceived to be high maintenance, low performance. Surprisingly, high performance-high maintenance leadership was not positively associated with workers' acceptance of TQM (Ehigie & Akpan, 2004).

Hirts, Murray, and Riordan (2007) looked for correlations between transformational, transactional, and Laissez-faire aspects of leadership and quality management principles based on the Malcolm Baldrige Quality Award. They found support for transformational leadership, as well as some aspects of transactional leadership, including contingent-reward systems.

Laohavichien, Fredendall, and Cantrell (2009) studied the relationship between transformational and transactional leadership styles and quality improvement. They found that companies with the highest levels of quality performance scored higher in both leadership styles than in companies with lower levels of performance. The authors were surprised by the correlation with transactional leadership, which rewards

and punishes employees based upon performance, and they conclude that transformational and transactional styles of leadership may complement each other.

Parumasur and Govender (2013) found that a participative management style was critical for the implementation of TQM. Of the factors that they investigated as being related to participative management, they found that TQM-based organizations focused most highly on coaching and supportive leadership, but also on delegation and empowerment. They also recommended clear and regular communication channels throughout the organization.

Psychogios (2022) provided a framework for total quality leadership, arguing that it should be adaptive, proactive, and relational. In particular, investment in social relations would foster “total and inclusive employee involvement” (p. 1).

## **ANALYSIS**

The literature on leadership theory for TQM defends a wide range of management styles. Taken together, this suggests that a flexible management style may be best suited to TQM. Several of Deming’s 14 points draw attention to specific management styles. In the sections that follow, several aspects of leadership will be examined. Because Deming’s philosophy was critical of traditional management, it may be helpful to begin with what is not consistent with Deming-based management.

### **Transactional Leadership (Traditional Management)**

If there is any form of leadership which is inconsistent with Deming’s thought, it would be transactional leadership, which is a traditional form of management based on punishment and reward (Van Wagner, n. d.). Deming opposed several of the mainstays of transactional leadership, including quotas (point #10) and even merit ratings (point #12). These are the most misunderstood and neglected of the 14 points, and to understand them one must acknowledge two of Deming’s most personal beliefs, one philosophical, and the other scientific. First, Deming was optimistic about human nature: He believed that most people wanted to do a good job and to find personal satisfaction and meaning in work (Deming, 1993). On the other hand, he was a statistician by training, and he knew that much of the difference in work performance was due to random variation (Deming, 1993). Deming (1986) wrote about the effect that performance ratings had on workers: “It leaves people . . . crushed, . . . despondent . . . unfit for work for weeks after receipt of rating, unable to comprehend why they are inferior. It is unfair as it ascribes to the people in a group differences that may be caused totally by the system that they work in” (p. 102). In other words, most of the differences between workers were due to the system, and not the workers. By this view, most merit raises reward chance, rather than merit.

Taken together, Deming’s 14 points painted a complete rejection of traditional management, in the transactional sense. Deming believed that 95% of the problems in any business were due to management, not the workforce (Deming, 1986). With a proper system in place, workers were quite capable of doing a good job.

### **Transformational Leadership**

Deming’s (1986) point #14, “transformation is everybody’s job” (p. 25), placed transformation at the heart of business, but without a unified purpose, what is the goal of transformation? Dynamic leadership would be required to direct everyone to the same end—quality in processes, products, service, and people. According to Al Rahbi, Khalid, & Khan (2017), the dynamic, transformational leader “achieves success by consistently sending clear signals about his or her priorities, values, and beliefs in the business environment. Once employees . . . accept the culture, it becomes a strong and dynamic tool to communicate the organizations’ values and beliefs, especially to new members” (p. 7). Deming’s (1986) point #1, “create constancy of purpose”, would be well served by transformational leadership. This implies, though, that TQM must not be just another fad in a long string of management initiatives.

TQM should be an exciting prospect, and this needs to be conveyed by top leadership. But fear of the unknown is a strong emotion, and it can prevent employees from committing to a new program, especially

if trust in management is lacking. Deming knew this, as his point #9, “Drive out fear, so that everyone may work effectively for the company” (p. 23) acknowledged. But once the transformation is underway, new forms of leadership will be required, as will be argued in the next section.

### **Distributed and Participative Leadership**

According to point #14, “the transformation is everybody’s job” (Deming, 1986, p. 24). If so, then leadership must be distributed throughout the organization. Distributed, or participative leadership, is characterized by decentralization. According to Bass and Bass (2008), “Decentralization usually brings with it more opportunity for its leaders to react quickly and flexibly to opportunities and threats to the organization. The decentralized organization is more likely to adopt an open learning philosophy and recognize the need to invent local adaptations of best practices” (p. 743). This emphasis on learning is consistent with the epistemological factor in Deming’s SOPK.

Distributed leadership differs from other management styles in its embrace of democratic decision-making. According to Al Rahbi, Khalid, & Khan (2017), participative “leaders facilitate collective decision making, involving their followers or employees, and offering them support and choices. Further, this leadership style, unlike the authoritarian style, is characterized by cooperation, active participation, accountability and delegation of responsibilities and tasks” (pp. 4-5). Distributed leadership also helps make effective teamwork possible, which is the subject of the next section.

### **Leading Teams**

Deming (1986) wrote that “There is no substitute for teamwork and good leaders of teams to bring consistency of effort, along with knowledge” (p. 19). Consistent with the SOPK, Deming (1986) acknowledged that, due to individual differences, some otherwise valuable employees were unsuited for teamwork. Nevertheless, effective teamwork was central to his management philosophy: “Teamwork requires one to compensate with his strength someone else’s weakness” (Deming, 1986, p. 64). The issue, then, is what type of leadership style correlates with high achieving team performance? According to Al Rahbi, Khalid, & Khan (2017), “The transformational, authentic and servant leadership styles are positively correlated with team motivation whereas transactional leadership style is found to be negatively correlated” (p. 10). This is consistent with Deming’s criticism of transactional leadership.

Deming’s notion of teamwork went beyond the institution. For example, point #4 advocated for a “long-term relationship of loyalty and trust” with suppliers (Deming, 1986, p. 23). This went against the still popular method of buying from the lowest bidder. Teamwork with suppliers meant that a culture of quality could be spread from company to company.

### **Situational Leadership**

According to Van Wagner (n. d.), “Situational theories propose that leaders choose the best course of action based upon situational variables. Different styles of leadership may be more appropriate for certain types of decision-making.” The analysis thus far indicated that more than one style of leadership would be required to accommodate Deming’s 14 points and his SOPK. Deming (1986) criticized management, and point #14, “institute leadership” (p. 23) suggests that none of the existing leadership theories was satisfactory for his management philosophy. Transformational leadership was required to “adopt the new philosophy,” but his emphasis on teamwork meant that leadership had to be distributed throughout the organization, which leads to distributed and participative leadership. If there is one thing that characterized Deming’s philosophy, it was trust in the common worker. Thus, Deming’s philosophy indicated an adaptive leadership style that cooperated with the workforce to achieve maximum success.

## **CASE STUDY**

In 2003, University System of Georgia (USG) Chancellor Errol Davis instituted the Service Excellence Program, which focused on providing a high level of customer service through the application of TQM-based methods, and an annual awards program which recognized outstanding projects and teams

([https://www.usg.edu/service\\_excellence/ recognition\\_programs](https://www.usg.edu/service_excellence/ recognition_programs)). Each school within the USG had a designated Service Excellence coordinator, who was responsible for training and program management.

The author was working towards Green Belt certification in Six Sigma, a popular quality improvement tool, and he developed a working relationship with one of the Service Excellence campus coordinators. This coordinator visited every department on campus, instituted several projects, and was recognized by the USG for outstanding contributions to the Service Excellence Program. Oddly, the coordinator, although popular with faculty and staff, received little attention from campus leadership, and was not recognized at the school's annual faculty and staff recognition ceremony. In subsequent years, the on-campus program received little support, and at the system level, the Service Excellence program floundered similarly. It was virtually inactive by the time it was discontinued in early 2019 (J. Jones, personal communication, December 21, 2018).

The program violated several of Deming's (1986) tenets, not the least of which were "adopt the new philosophy" and "institute leadership" (p. 23-24). In Deming's (1986, 1993) view, leadership had to come from the top, and the leader's responsibility was to promote and sustain a system where everyone was responsible for self-improvement and the improvement of the organization. "A quality program for a community, launched by ceremonies with a speech by the governor, raising of flags, beating of drums, badges, all with heavy applause, is a delusion and a snare" (Deming, 1986, p. 21). The USG Service Excellence Program appears to have suffered from an initial rush of enthusiasm, but with little long-term commitment, especially on the campus-level.

## **LESSONS LEARNED AND RECOMMENDATIONS**

After retiring from his work in Japan, Deming settled down in the U. S. to a quiet life as a statistical consultant. When NBC aired its program *If Japan can, why can't we*, even his grandchildren were surprised to learn that Deming was a hero in Japan (Baker, 2017). Deming continued teaching and writing, giving his last four-day seminar only two weeks before his death at the age of 92 (Baker, 2017). *The new economics for industry, government, education* was published the same year he died (Deming, 1993).

Since Deming's death, many tools for quality improvement have been developed, such as Six Sigma and Lean, and these have resulted in many successful applications (Goetsch & Davis, 2013). Unfortunately, like the USG's Service Excellence Program, others have failed. From a leadership perspective, what lessons have been learned, and what can be recommended?

1. TQM is difficult, and those who consider it a panacea should first count the costs. Quality cannot be considered the domain of a quality assurance department. It must guide every decision that a firm makes. If not taken seriously, quality becomes merely a slogan, which is the moral of Deming's point #10.
2. The pursuit of quality requires a flexible management style. Transformational leadership is needed to inspire everyone, from the custodians to the boardroom, to "adopt the new philosophy" (Deming, 1986, p. 23). Distributed leadership is needed to "put everybody in the company to work to accomplish the transformation" (Deming, 1986, p. 24). Although there is some support for transactional leadership (Laohavichien, Fredendall, & Cantrell (2009), that may be because very few organizations have ever attempted a completely non-transactional approach.
3. A combination of technical and people skills is needed. The SOPK requires system-based thinking and the use of the scientific method for organizational learning. However, all organizations consist of individuals with their own personal needs and abilities. The organization that overlooks these individual differences not only invites conflict but fails to tap the rich resources that are available.
4. When in doubt, do not adopt quality management. The workforce has grown accustomed to seeing the "latest thing" rolled out, only to be replaced by the "new latest thing." If quality management is initiated, only to be abandoned, then it will be a long time before it can be reintroduced. Count the cost, do the necessary preparation--understanding that nothing can

supplant quality in processes, products, service, and people--and then, and only then, start the program. Better to wait, than blunder ahead and later lament a lost opportunity.

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