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ABSTRACT

Those engaged in school restructuring can find direction in the philosophy of W. Edwards Deming, which has guided the operations of many American corporations. This paper provides an overview of Deming's Fourteen Points of Total Quality Management (TQM) and discusses their applications to education. To develop a successful TQM system, the school needs a clear plan of action for reaching long- and short-term goals, staff training, quality improvement teams, management involvement, and continual assessment. Schools using TQM have reported improved test scores, reduced dropout rates, and curricular innovations. The principles of TQM have broad applications in education and have the potential to produce positive results. School improvement becomes a continual process that created an environment characterized by unity, change, and trust. (Contains 17 references.) (LMI)

USING TOTAL QUALITY MANAGEMENT PRINCIPLES TO IMPLEMENT SCHOOL-BASED MANAGEMENT

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Abstract

The task of transforming our schools is within our reach today. We can find direction in the theories and principles that guide our corporations. Many of these organizations are making a sustained effort in applying the philosophy of W. Edwards Deming, the man who helped Japanese industry achieve world-class standards of quality.

Deming's fourteen principles of Total Quality Management are powerful universal axioms. They are based on the assumptions that individuals want to do their best, and that it is management's job to enable them to do so by constantly improving the systems in which they work. Each school corporation must translate these fourteen principles into action statements tailored to fit their own needs. This is accomplished by involving administrators, teachers, staff, parents, students, business and civic leaders.

Total Quality Management is not a short-term solution to change in our schools. By using the fourteen principles and six basic steps, schools can develop a successful Total Quality Management System. To accomplish this the school needs a vision; a clear picture of what the school wants to achieve and an image that all stakeholders can share. An audit is done by taking a good look at the present culture in developing a plan for transition. This plan is to establish short and long-term goals to move toward the vision. Training is most effective when it is provided as people are ready for it. When implementing Total Quality Management, it is critical to form quality improvement teams as soon as possible after the initial training has taken place. The monitoring of Total Quality Management is reinforced with continuous top management involvement. This is a new way of life with top management setting the example by getting involved in the improvement projects.

Schools using Total Quality Management share their success stories with improved test scores, reduction in their dropout rate, and curricular innovations. The emphasis is shifting to school-based management with the teachers and staff empowered to contribute their best efforts in providing a quality education for the students.

The principles underlying Total Quality Management have broad applications in education and can yield positive results. School improvement becomes a continual process that creates an environment that promotes unity, change, and trust.

USING TOTAL QUALITY MANAGEMENT PRINCIPLES TO IMPLEMENT SCHOOL-BASED MANAGEMENT

Suddenly, it seems, the name of W. Edwards Deming is everywhere. From relative obscurity in this country a dozen years ago, Deming's name has become synonymous with the movement he calls Total Quality Management, better known as TQM. This movement is spawning a new American revolution, as quality becomes our watchword in every aspect of life.

American schools have the same problems and are faced with the same challenges as American corporations. In order to improve schools, we must be committed to high performance in the processes and products along with the development of motivated and highly skilled young people. For this to be achieved, teachers must be given greater managerial freedom. Reformers have pointed to the need for fundamental structured changes in the way we conduct the business of education. When Deming's philosophy is applied to educational organizations, it provides a path to employee empowerment and educational improvement. In their efforts to reform schools, should school administrators embrace a philosophy of organizational improvement developed by statisticians primarily for the business sector? Is Total Quality Management the answer to the problems in American schools? (Ireh, 1994)

The Birth of Total Quality Management

The story of TQM is entwined with the legend of Japan's resurrection from the ashes of World War II. Japanese industrial leaders insist this could not have happened without the help of W. Edwards Deming and his fellow American statistical experts, Joseph M. Juran and Armand Feigenbaum. Deming and Juran lectured throughout Japan in the years following the war, teaching manufacturers how to reverse their well-established reputation for cheap goods by designing quality into their work system. Deming pledged to the nation's top industrial leaders that, if they would embrace the philosophy of Quality Management, they would "capture markets the world over within five years." (Bonstingl, 1992, p.4)

Deming's quality crusade in Japan was virtually unknown in the United States until the 1970's. It was at that time American manufacturers discovered customers the world over registered their preference for Japanese goods over American products. The reason was simple: Japanese items had consistently better quality at competitive prices. Deming had accomplished his goal!

In 1980 Deming's philosophy was discovered in the United States after he appeared on a television documentary, "If Japan Can, Why Can't We?" In the program, he advised Americans to resist the temptation to copy the Japanese. He urged Americans to learn how to "work smarter not harder" by adopting a new quality focused way of approaching the processes of production, the systems in which those processes take place, and the interaction of people within those processes and systems. (Bonstingl, 1992, p. 5)

Deming's 14 Points of Management

Deming's 14 principles are powerful, universal axioms based on the assumptions that individuals want to do their best and that it is management's job to enable them to do so by constantly improving the system in which they work. In his book Out of the Crisis, Deming (1986) stated these 14 points as follows:

1. Create constancy of purpose toward improvement of product and service.
2. Adopt the new philosophy.
3. Cease dependence on inspection to achieve quality.
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.
8. Drive out fear, so that everyone may work effectively for the organization.
9. Break down barriers between departments.

10. Eliminate slogans, exhortations, and targets for the work force asking for zero defects and new levels of productivity.
11. Eliminate numerical quotas for the work force and numerical goals for management.
12. Remove barriers that rob people of pride of workmanship. Eliminate the annual rating or merit system.
13. Institute a vigorous program of education and self-improvement for everyone.
14. Put everybody in the company to work to accomplish the transformation. (p. 23-24)

Designing Deming's 14 Points for Schools

Many school-based models have failed because too little time was spent in developing the philosophical framework prior to implementation. St. Petersburg Public School in St. Petersburg, Virginia, devoted almost a year to this process alone. The school system's mission, systemwide objectives, and expected outcomes were developed by the school board and executive management with involvement from teachers, parents, students, business, and civic leaders. Deming's 14 points were translated to action statements consistent with the school mission, systemwide objectives, and expected outcomes.

1. Establish constancy of purpose. All resources are aimed at student development. All programs are studied with all the stakeholders understanding desired outcomes. There is a willingness to measure progress and to change short-term strategies to accomplish long-range objectives. Schools will have to spend time on the future by using long-range thinking, planning by visioning, and mission development.
2. Adopt a new philosophy. This philosophy is a transformation to a new way of thinking and planning for student learning. All students can learn at higher levels under the right conditions of teaching and learning. Quality must become the new religion in education. We can no longer afford poor workmanship in students, using bad learning materials, fearful and uninformed teachers, poor service and training, and administrative job hopping. If we are to rid the schools of these practices it will require a transformation of management philosophy.
3. Cease dependence on mass inspection. Emphasis is on preventing student failure through continuous improvement. Assessment of student progress occurs on a daily basis. Eliminate the need for supervision on a mass basis by building quality into the teaching process in the first place.
4. Stop awarding business solely on the basis of price. The investment in quality includes all segments of the educational process. In the long run, high quality produces lower costs. End the practice of awarding business on the basis of price tag alone. Induce publishers and vendors to be actively involved with the educational institutions through long-term commitments.
5. Constantly improve every system. Improvement is not a one-time effort. There is potential for improvement in each step taken to create or upgrade school programs or services. Schools must continually innovate so that the best educational processes will be discovered.
6. Institute training on the job. School districts must provide all employees with training in quality leadership, measurement, analysis, problem solving, self-evaluation, and assertiveness training. In-service must be an integral part of school improvement plans.
7. Institute leadership. We need to lead people in the right direction. Emphasis is on the quality of the total program rather than individual behaviors. New relationships between administrators and teachers and teachers and students must be created and maintained. Administrator roles will be to help teachers and students do the best job possible.
8. Drive out fear. The school is committed to rebuilding and nurturing an environment in which trust and respect can be applied to what is said, heard, read, and written. Fear and anxiety are present at all levels of most schools. These feelings result from management's efforts to spur better performance from teachers and principals with the use of numerical goals, ranking, incentives, and slogans intended to stimulate the competitive spirit. By ridding the schools of these old-style management techniques, the fear will be greatly reduced. One of the most harmful is evaluation of teacher performance because it undermines teamwork. Of all the

Deming strategies studied by Bradley, (1993) this is the only one that could not be implemented by schools completely on their own initiative. Even if state law exemption is secured, in many districts, negotiated agreements with teachers's organizations or unions would still prevent the abandonment of teacher evaluation.

9. Break down barriers between departments. This is done by problem solving through teamwork and combining the efforts of people from different school areas. Personnel switches between buildings and departments must occur so that people can learn about the problems others have. The school system must have common goals, and its members must work as a team to solve problems, set policies, and map out new directions.
10. Abandon slogans. School employees should always strive to continually improve. Slogans only generate frustration and resentment. Teachers perceive slogans as signals that management not only doesn't understand their problems, but doesn't care enough to find out about them.
11. Eliminate numerical goals and quotas. Goals are based on individual student progress. All educational employees are more actively involved in identifying problems, designing programs, planning, budgeting, and selecting materials.
12. Remove barriers between departments. The school encourages non-threatening, two-way communication on quality outcomes between all levels of the organization. Too many people are blaming the failures of American education on teachers. The last thing teachers need is to hear this same charge of incompetence from their own administrators. What teachers really need is an ally to defend them and to make them feel that they are a valued part of the total management team.
13. Promote education and self-improvement. A comprehensive understanding of the past, the ability to assess the events that led to the present, and the ability to forecast future needs are necessary. Employees must be continually acquiring new knowledge, skills, and methods.
14. Structure management to accomplish the transformation. Educational leaders must move toward processes that are geared toward problem prevention. Everyone in the system is responsible for helping to bring about the transformation. The most frequent cause of failure in any quality improvement effort is the lack of involvement on the part of top and middle management. (McLeod, Spencer, and Hairston, 1992, p. 36-37; Bradley, 1993)

Success of Total Quality Management

James Law (1993) gives a step-by-step guide to make TQM work for a school district. He stresses that TQM is not a program or a short-term solution. TQM is a whole new way of thinking and working. It is a change in organizational culture. We can learn from organizations who have been successful with TQM and what it takes to make a change.

There are six key elements that are critical in making TQM efforts successful. These six steps are: vision, audit, plan, train, implement, and monitor. Following these steps without understanding TQM basics will not guarantee a successful TQM effort. The elements in these steps are not too difficult to master. However, these steps have been found to be essential to the development of a successful Total Quality Management System.

Vision, the first key element, must present a clear picture of what the school wants to achieve and an image that all members can share in, take pride in, and use as a daily criteria for assessing their work. Principals who want to implement TQM in their schools find that developing a vision statement is difficult to do. The term vision means many things to many people, and the term quality education also conveys its own set of meanings. The goal, according to Weller, Hartley, and Brown (1994) is to develop a shared vision that is owned by all and embraces the hopes and aspirations of each of those associated with the school.

An audit is done by taking a good look at the present culture in order to develop a plan for the transition. TQM cannot make a poor organization into a good organization. TQM can, however, help a good organization become a great organization. The following questions will be helpful according to Law (1993):

1. What is the level of employee awareness of TQM?
2. What is the current culture?
3. Is there good communication?
4. What do your employees want to change?
5. What is poor quality costing? (p.49)

The plan is to establish short and long-term goals to move toward the vision. Top management must lead by example, establishing their own quality improvement team, taking the same training offered to the employees, and very publicly addressing some critical quality challenges that everybody in the organization is aware of.

TQM training is most effective when it is provided as people are ready for it. This is called "just-in-time" training according to Law. (1993 p.50) If everyone is trained at the initiation of TQM, many may be alienated who are not ready for it, and training may be wasted on others who are not going to use it for some time.

The initial program should cover TQM awareness. This includes training sessions on quality processes, concepts, and tools. These can usually be done in-house and will form a basic foundation for employee's understanding.

To implement TQM, it is critical to form quality improvement teams as soon as possible after the initial training has taken place. Simulation training gives people great confidence and enthusiasm, and it's very important to take advantage of that. Coaches must be assigned to teams, and teams must be empowered by their manager to make changes.
Team empowerment is what makes TQM different from most previous improvement efforts and it is what makes TQM effective. Talking about empowering teams is easy. Doing it is the hard part! Most people have tried to improve their work situations many times before but have given up trying new programs. The reason for this is the resistance to change by managers and the organization's culture. Change is often discouraged with responses like, "That is the way we do it here," or "We tried that once and it didn't work," or "We're already doing it well enough." (Law, 1993, p. 50)

Once employees realize they can make meaningful changes, TQM will begin to work. People will want it, and they will not want to give it up. In the school setting, administrators will realize that in giving up some of their authority they also will be empowered by the improvements being made in the school.

The monitoring of TQM is reinforced with continuous top management involvement. It is a new way of life with top management setting the example by getting involved in the improvement projects. (Law, 1993, p. 51)

Schools Using Total Quality Management

The St. Petersburg Public Schools located in St. Petersburg, Virginia, moved away from a highly centralized organizational structure to a system of Total Quality Management. They have been proud of the progress made throughout the school system as shared decision making became the dominant philosophy, and eventually, with more emphasis placed on school-based management. Test scores have improved significantly, and the dropout rate has been reduced by over 50 percent. As they worked to empower the employees, pride and performance of teachers, staff, and administrators soared far past their expectations. This approach has created an atmosphere for individual creativity, intellectual growth, and self-fulfillment. Teachers and staff were empowered to contribute their best efforts in providing a quality education for students. McLeod et al. (1992)

In 1970, the Johnson City Schools were the lowest achieving among the fourteen districts in Broome County, New York, with less than half their students performing at grade level. This lower middle class district, with virtually no managerial or professional citizens, suffered from the lowest per capita income in the country.

Johnson City is the best example of the application of Deming's principles in schools. Deming's message applies even more urgently to schools than to industry because the crisis in our schools is primarily a management problem. Johnson City takes seriously Deming's point six, institute on the job training, and point

twelve, institute a vigorous program of retraining. Over the years, the district has taken steps to ensure that employees continue to learn and to learn from each other. A teacher new to the district attends a one week orientation. Employees are given ten staff development days per year, which can be taken in the summer and throughout the year. Teachers are paid for the days they work during summer vacation. Collective growth is encouraged through team meetings. Teams may be grade level, department, or ad hoc groups that meet to discuss and experiment with curricular innovations. To encourage such meetings, administrators have reduced the number of faculty meetings to only two or three per year. They have found that they can deal adequately with routine matters through memos.

Giving teachers greater autonomy does not mean abandoning accountability. It does not mean ignoring teachers because you assume they are doing a great job. Research tells us that the majority of teachers do their best work during their first seven years of teaching. After that, they start to decline. The reason is isolation and a lack of professional recognition. Without nurturing, a feeling of helplessness and the inevitable accumulation of negative feelings start to dominate. It is the responsibility of the administrators to be visible and involved in the life of the classroom.

Achievement is evidence by students' standardized test scores. Good test scores are not at the heart of what the Johnson City Schools would rather concentrate on; more authentic and performance based outcomes. They are so intent on this, they recently sought a temporary variance from the state education department that will allow them to put standardized testing on hold while they refine more authentic assessment.

Johnson City Schools believe that quality, not grades, is what motivates effort. Every effort is made to eliminate grading and ranking so that students are not allowed to fail. They may not master a subject or complete a course within the prescribed time, but eventually almost all do.

Another important indication of success is how parents feel about the quality of education their children are getting. Parents speak with conviction about the improvements they are seeing in their children. The students and parents are thought of as the most important customers in
the district.

An impressive indicator of improvement showed that the longer a student is in the Jackson City system, the better they do as they progress through the grades. This study took place in the eighth grade class of 1989 and looked at the average achievement of these students in grades two, four, and eight. The data revealed that in grade two, the average student was 0.3 years above grade level. By grade four, the average was 1.5 years above grade level and by grade eight, the average was 3.5 years above grade level.

Johnson City Schools, by using TQM, has become educational mecca. It is one of the most visited schools in the country. Hundreds of educators visit each year and attend conferences looking for ways to improve. (Schmoker and Wilson 1993)

Mike Walter, superintendent of Tupelo, Mississippi, schools knew he had to find a different way of doing things because the old method was not working. Tupelo had 19 Fortune 500 companies and Walter started talking to the business leaders. The challenge facing businesses in Tupelo was the importance to remain competitive in an increasingly competitive global environment. The tool they were using to achieve that goal was TQM. "Tupelo's business leaders told us what they need to be successful, and I asked them to help me achieve that in the school district," says Walter. (Rist, 1993, p. 28)

One company includes Tupelo teachers in the training on TQM and brings business leaders to speak to the teachers on issues ranging from implementing the total quality approach to preparing students for the demanding work environment of the 21st century. The results are astounding with teachers reinventing the schools and having an open invitation to the superintendent's office. They come with their ideas for improving curriculum or restructuring how they teach. They come with proposals for instituting non-graded primary classes, multiage groupings, cooperative learning, or integrated foreign-language teaching. (Rist, 1993, p. 27)

Walter's teacher-centered approach to reform has instilled an unmistakable sense of pride of Tupelo's teachers. The teachers talk enthusiastically about the changes they're exploring and implementing in their classrooms. "Everybody is having a great time with this. You almost feel guilty because your having so much fun," says an elementary teacher. "You're almost consumed by it," (Rist, 1993, p. 28) offers another as others chime in about working at night, on weekends, and on vacation.

Teachers even use personal time during the month of August, without extra compensation, to participate in staff development programs. Walter says, "Teachers are creating their version of the vision and that is what is important. I can't sell my vision to everybody in the school district, nor should I. Everybody has different talents, interests, and everybody deserves his/her version of the vision." (Rist, 1993, p. 28)

Executive Learning is building a solid reputation for providing outstanding training and strategic consultation in the Deming-based philosophy. They are doing this by successfully helping the customers bridge the gap between continual quality improvement theory and application. Their program, "Quality Schools Through Continual Improvement" is practical, hands-on, and linked to education through the use of hundreds of examples, applications, application exercises, and simulations specific to the world and work in K-12 schools. The curriculum consists of 13 modules with 36 hours of instruction divided into 18 two-hour segments. (Quality Schools, 1995)

Problems With Total Quality Management

Any school district considering quality management needs to struggle with its own issues and develop its own model based on Deming's 14 principles. Quality has already become a marked term in educational circles. Journals, workshops, and consultants have popularized, and thus diminished, its significance. In a very short time, some educators have taken a long-term, continuous improvement model, converted to a quick fix, and killed it. (Freeston, 1992)
One mistake is to bring employees in too early, providing them with initial training in TQM tools and philosophy, but not with an immediate opportunity to use them. (Brigham, 1993) The Westinghouse Vocational and Technical High School introduced TQM in stages to avoid this problem. The first year the staff of the school was trained, followed by parents being trained the second year, and the third year the students participated. During the three years, they were able to customize TQM to address the needs of the staff, parents, and students enhancing the success of the program. (Rappaport, 1993)

Barriers were encountered when implementing the philosophy of empowerment according to Herbert Moyer, (1993) the superintendent of Bedford Public Schools, Temperance, Michigan. These included lack of communication, low credibility, opposition from religious fundamentalists, over-reliance on property taxes, and low self-esteem of students and staff. Overcoming these problems required one-on-one diplomacy by the school administrators. They became involved in the community and interviewed hundreds of individuals for their ideas on the needs and direction of the district.

The Kate Sullivan Elementary School in Tallahassee, Florida, under the guidance of principal, Nancy Duden, effectively handled obstacles to TQM. People do not like to change and the resistance to Deming's principles can be extremely fierce. This is because the philosophy behind the principles depart so radically from the traditional education system. Nancy Duden dealt with the resistance by encouraging teachers, staff members, and parents to explore Deming's quality principles with her at their own pace. She provided workshops, reading materials, support groups, and community volunteers to help everyone become familiar with Deming's work. (Blankstein & Swain, 1994)

Grades are difficult to let go of because educators are pressured by legislatures to use quantitative goals, such as standardized test scores, to measure student's progress. Parents can be even more insistent on the need for grades because they have the added fear that their children's future in higher education or the job market depends on grades. As many educators have realized, grades and test score do not reflect what children are learning. Kate Sullivan School has been struggling to let go of grades throughout its restructuring efforts. Three years ago, the teachers in kindergarten through second grade decided to stop giving grades. The results have

been encouraging with standardized test scores remaining high and parents gaining a more accurate picture of their children's progress. (Blankstein & Swain 1994)

William Glasser (1992) pointed out that we must face the fact that a majority of our students believe the present academic curriculum is not worth the effort it takes to learn it. No matter how well the teachers manage them, if students do not find quality in what they are asked to do in the classroom, they will not work hard enough to learn the material. The answer is not to try to make them work harder; the answer is to increase the quality of what we ask them to learn.
W. Edwards Deming passed away December 20, 1993, at the age of 93. Ten days earlier, he finished the last of his famous four-day seminars. (Byrnes, 1994, p.9) These were the principle means of spreading his doctrines. With the death of Deming, his followers are concerned about the future of his mission. Deming left behind a number of books and 175 major papers. Zygmont related in 1994 the crux of Deming was always his personality.

He would never get up in front of a room and tell you something. He would ask questions, pose scenarios, and lead you to question basic assumptions. It was a self-enlightening process. The joy that would come to people was the rediscovery of the patterns and systems of life that we allow our bureaucracies to conceal. p. 25

Even before his death, some consultants attempted to capitalize on his fame by promoting themselves as followers. Quality Enhancement Seminars, the company that organized Deming's public seminars, is continuing the classes using facilitators, assistants trained by Deming himself, and video tapes of the statistician presenting his program. (Zygmont, 1994)

Conclusion

"Quality is everybody's job, but quality must be led by management," stated W. Edwards Deming. (McLeod et al., 1992, p. 40)

One of the most important questions Deming poses for educators is, "Can we produce quality students ready for the world marketplace by the year 2000?" If we are going to improve quality in the classrooms, we must understand that improvement is a year by year process that must be the desire, as well as the primary obligation, of all involved. It must be fully understood that quality is achieved not only by improving the human, technical, and conceptual skills of educational leaders but by acknowledging that education is a business. (McLeod, 1992)

We still face tremendous challenges as we endeavor to prepare our students to compete successfully in the world marketplace. The Deming Philosophy of Management is a valuable process for developing productivity and high morale among those involved in the educational enterprise.

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