December 1984

An Analysis of the Application of Quality Circles on Education

Anthony O. Anyaocha

East Tennessee State University

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AN ANALYSIS OF THE APPLICATION OF QUALITY CIRCLES
ON EDUCATION

A Dissertation
Presented to
the Faculty of the Department of Supervision and Administration
East Tennessee State University

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

by
Anthony Omenihu Anyaocha
December, 1984
APPROVAL

This is to certify that the Graduate Committee of

ANTHONY OMENTHU ANYAOCHA

met on the

15th day of November, 1984.

The committee read and examined his dissertation, supervised his defense of it in an oral examination, and decided to recommend that his study be submitted to the Graduate Council and the Dean of the School of Graduate Studies in partial fulfillment of the requirements for the degree Doctor of Education.

Chairman, Graduate Committee

Signed on behalf of the Graduate Council

Associate Vice-President for Research and Graduate Studies
ABSTRACT

AN ANALYSIS OF THE APPLICATION OF QUALITY CIRCLES ON EDUCATION

by

Anthony Omenihu Anyaucha

The purpose of this study was to determine the potential effectiveness of implementation of the quality circle concepts and processes to administration of educational systems.

A list was developed of administrators who were reputed to be competent in quality circle concepts. Letters were written to each requesting him/her to participate in a telephone interview. Also, each one on the list was asked to respond with a date and a time when the interview could be conducted. A list of questions to which answers were desired was included in each letter. Answers to the questions in the interview guide were carefully recorded during the telephone interview.

Primary and secondary sources were also used to determine the success or failure of quality circles in the United States. Major emphasis was placed on the use of quality circles in educational administration.

In the field of education, it was not easy for educators to use the word "productivity"; however, due to the changing world and the fact that education and industries are somehow similar in terms of Japanese style of management, the term "productivity" can now be used by both organizations.

In the language of educational researchers recorded by Bellanca, the word "productivity" equated with "effectiveness." He pointed out that effective schools were (and still are) those that produced students who had mastered the required knowledge and skill to move to higher education or to work successfully in a trained vocation. The effective schools, as defined by Harvard's Ron Edmonds, achieved this mastery equally for all students regardless of race, national origin or social class.

An alternative to American bureaucratic philosophy of management came to the United States from Japan during the decade of the 1970s. The philosophy of the Japanese style of management was based upon the use of creativity and talent of others, including the following concepts: (1) Everyone is knowledgeable and wants to share and contribute something; (2) Management does not know all the problems; (3) Management does not know all the answers; (4) The employee has his own way of doing something and is closer to the problems; (5) Workers can contribute their ideas for effective problem solving.
The implementation of these ideas is through the use of quality circles. Quality circles are the medium through which workers share management responsibility for locating, analyzing, and solving problems related to their work area. A quality circle is composed of six to ten or eight to twelve volunteers who meet with their supervisors every week. In this situation the supervisor serves as a circle leader. Initially, they receive training in techniques of problem solving, data gathering and problem analysis.

A participative decision making process should be adopted. Decision making by consensus was the subject of a great deal of research in Europe and the United States of America over the past twenty years, and evidence strongly suggested that a consensus approach yielded more promising and incentive decisions and more effective implementation than individual decision making.
DEDICATION

This dissertation is dedicated to Peace Uloma Anyaocha (my dearly beloved wife), who encouraged, motivated and influenced me to achieve this outstanding goal.

Education should not be regarded as facilities,
But rather the people and the programs within and outside those walls

One of American philosophies of education is to have a change in character.

To Peace, with love -- Anthony
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The author acknowledges with a deep sense of appreciation and gratitude those individuals who contributed immensely toward his achievement of educational goals.

A special expression of gratitude is expressed to Dr. William L. Evernden, Committee Chairman, for his understanding, scholarship, financial assistance, guidance, encouragement and his availability for consultation at the crucial time of need.

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The author expresses his sincere gratitude to Dr. Charles Burkett, Chairman of Supervision and Administration Department, and his outstanding secretary, Ms. Sharon Hundley, for their assistance and encouragement during his telephone interview with the representatives of quality circles in various states within the United States of America.

Special and profound thanks are due to Ms. Madaline Jenkins, secretary/typist, for typing and retyping during these trying periods.

A warm and sincere thanks go to the following children of the author: Chichi Anyaocha (daughter), Aham Anyaocha, Obi Anyaocha and vi
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The author is greatly indebted to many members of his family (Umuagharata) as a whole for their cooperation, contribution, concern, and encouragement throughout his entire educational career.

In conclusion, the author wishes also to express his sincere gratitude to his (late) mother, Mrs. Diana O. Anyaocha for her loving care, encouragement toward him, even though she died when he (the author) was very young. Furthermore, the same kind of appreciation goes to his two sisters, Magret Nwosn (late) of Umuvo-Dwerrinta, and Mary Abraham of Umueleghele, Imo State of Nigeria, West Africa.
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CHAPTER ONE

Introduction

The act or process of theorizing is an effort to provide a scientific base for the practice of administration. It should be understood that while theory is based on experimental data, it does not stop at observation. Due to the nature of education, the movement of the educational structure is entrusted to the administrators rather than to managers. The processes of administration were and still are viewed as organizational variables which are supposed to be organizing, goal setting, decision making, climate or building morale, change initiating, communicating, negotiations, resolving conflicts, supervising and evaluating.¹

Specialists in the field of managerial science define theory as "the systematic grouping of interrelated principles in a field of inquiry."² As theory and practice cannot be separated in performance, it stands to reason that theory is crucial for educational administrators in all categories. Many misunderstandings that confront theory in education could be clarified if (l) each administrator and teacher

could help in identifying the theory utilized in practice and in decision making, and (2) if newly researched theory were exposed, given detailed explanation, and made available to all professional personnel to enhance their performances in making some changes.  

In the field of educational administration, theory has served as a guide to action. A theory that does not provide a way for the school administrator to carry on with a certain project is unproductive theory. In comparison, the school administrator could make use of theory in the same way a physician would utilize a theory developed by researchers in biological laboratories. According to Roald Campbell and Russell Gregg, the physician does not necessarily know the theory of mold growth to be able to use penicillin to cure a streptococcus infection; yet, he would be a very poor physician if he did not use penicillin. In the same way, the educational administrator should look to administrative theory for guidance when solving problems of faculty morale.

Furthermore, theory has provided for cumulative research. It presents an integrating and common framework for development of knowledge. Theory guides action; therefore, it should provide the basis for making decisions about everyday practical questions.

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3 Feyereisen, Florino and Nowak, pp. 10-11.


The Problem

Statement of the Problem

The problem of this study was to determine the potential effectiveness of implementation of the quality circle concept and process to administration of educational systems.

Sub-Problems

The following sub-problems were identified.

1. Through a review of literature in the field, to develop and present a history of the development of the quality circle concept;

2. Through interviews with representatives to educational systems where quality circles have been introduced into the administrative process, to describe some actual examples of their implementation into the administration of educational systems;

3. To develop a suggested plan or model (paradigm) for the implementation of the quality circle concept and process to the administration of educational systems; and

4. To make recommendations regarding use of quality circles in the administration of educational systems.

Significance of the Study

In order to understand theory better, misconceptions about it must be corrected. Quality circles are important because they can be regarded as alternatives to the bureaucratic philosophy of American management. Since quality circles function well in industries and some companies, perhaps they can be productive in education.
The study could lead to enhanced insight into human behavior within the organizations in order to promote greater skills in governing schools and/or expediting the decision making process. One value of the study should be a basis for the introduction of the best from Theory Z and quality circles into the management of school systems. Some public schools in this country have begun using quality circles as means of improving communication among all levels of employees and management.

Theories of educational administration are not well understood by many educational administrators, especially in the Nigerian educational system, where this field is entirely new.

Theory is indispensible in education; therefore, educational administrators must be able to use this important tool for the daily operation of schools.

**Definitions of Terms**

For the purpose of this study, the following definitions were used.

**Administration**

The term administration is used to designate the process (cycle of events) engaged in by all members of the formal organization to direct and control the activities of the members of the organization.⁶

---

Brainstorming

In terms of the quality circle process, brainstorming is the first in a series of steps that transform the meeting environment into an open forum where members can expose their perceptions to analysis without fear of judgment or ridicule.\(^7\)

Educational Administration

Educational administration refers mainly to administrative functions of elementary and secondary school principals, educational supervisors, superintendents, college and university presidents, department heads and all other educators who perform administrative duties.\(^8\)

Jural Rules

These are the organization's procedures and conventions, written or remembered, with which everyone is expected to comply.\(^9\)

Management

Management, in this study, is defined as activities undertaken by one or more persons in order to coordinate the activities of others in the pursuit of ends which could not be achieved by any one person.\(^10\)

---


Productivity

In the language of educational research, the work "productivity" equates with effectiveness. Effective schools are those that produce students who have mastered the required knowledge and skills to move to higher education or to work successfully in a trained vocation.\textsuperscript{11}

Quality Circles

Quality circles are small groups of people from the same work area who voluntarily meet on a regular basis to identify, analyze, and solve problems and recommend solutions to management or implement solutions whenever possible.\textsuperscript{12}

Theory

Theory is a rational explanation of how something is put together, of how it works, and of why it works that way.\textsuperscript{13}

Theory Z in Educational Administration

Theory Z in educational administration, like the operation of Japanese industry, involves long-term development of personnel, trust between workers, participative decision making and shared philosophy.\textsuperscript{14}


Assumptions

The complex organizations of the twentieth century necessitated the study of administration through classical organizational thought, the human relations approach, and the behavioral approach:

1. The delay and failure to take theory into account has retarded efforts to advance educational administration as a profession.

2. In the field of educational administration, theory should serve as a guide to action.

3. Administration is an important function in a highly organized society.

4. Neither schools nor other institutions remain effective for a long period of time without some type of administrative and personnel structure.

5. Quality circles could prove to be a useful method for achieving high quality, improved productivity, and increased employee morale.

Limitations

The following were considered to be the limitations of the study:

1. Selected examples of administrative quality circles from 1950 to 1984 were used for this study.

2. The study was limited to a review of the literature concerning several companies in the United States which implemented quality circles in their respective organizations.

3. The study was further limited by direct contact through correspondence and telephone interviews with personnel from public schools and colleges using quality circles in their administrations.
Procedures

The following were the procedures used for the study:

1. A thorough manual search was conducted at the Sherrod Library at East Tennessee State University and personal libraries of a number of faculty members.

2. An electronic search for dissertation titles was conducted.

3. The theories of several organizations and personalities were examined and summarized.

4. A list was developed of administrators who were reputed to be competent in quality circle concepts. Letters were written to each, requesting him/her to participate in a telephone interview. Also, each one on the list was asked to respond with a date and a time when the interview could be conducted. A list of questions to which answers were desired was included in each letter. Answers to the questions in the interview guide were carefully recorded during the telephone interview. The list of administrators, interview guide, a copy of the letter to the administrators, and copies of their replies are in Appendix A.

5. Primary and secondary sources were also used to determine the success or failure of quality circles in the United States. Major emphasis was placed on the use of quality circles in educational administration.

Organization of the Study

The study was organized into six chapters: An introduction to the study, the statement of the problem, the sub-problems, the significance,
definitions of terms, the assumptions, limitations, procedures, and the organization of the study are presented in Chapter one.

The review of literature is found in Chapter Two.

The process of quality circles is identified and expanded in Chapter Three.

Chapter Four includes a report and analysis of the correspondence and telephone interviews with representatives of educational systems in which the quality circle concept and processes have been implemented in educational administration.

A suggested paradigm for the implementation of the quality circle concept into the administration of an educational system is presented and explained in Chapter Five.

Included in Chapter Six are the summary, findings, conclusions, and recommendations regarding the use of quality circles in the administration of educational systems.
CHAPTER TWO
Review of Related Literature

Introduction
For the purpose of this study, Chapter Two is divided into four topics:

Origin

Early History
In the 1940s the basic notion of worker participation was used effectively by a lot of people. Prominent among them was Walt Disney. He was fond of calling the wives and children of his employees every week for a talk. He would say, "I get good, useful ideas from children and mothers." It was assumed that he might have obtained his best ideas from them. ¹

Administratively, Disney encouraged worker participation in all his projects. Any time a new attraction was built, he would call the employees together for their impressions and suggestions. One particular time, one of the key attractions was reviewed by several employees. A janitor did not like the setup, mainly the atmosphere. When asked why, he replied, "It does not resemble the actual conditions."² He then explained the differences between what Disney had

² Ingle, p. 6.
built and the way conditions had been. When questioned as to how he knew so many details, he said, "I was born there and lived there for twenty years; I should know something about the place." The attraction was then modified according to his suggestions. This practice of worker involvement enabled Disney to establish a record for quality and near perfection in his work.4

Other great businessmen used similar techniques to promote employee involvement. Although no formal records exist, one can readily see that communication within the companies was good and that employees were closer to management.5

Peter Drucker, in his book on management, reported details of group activities that took place in Germany during the late 1800s. One of the companies that Drucker highlighted was Zeiss Company, known for its optical products. Ernest Abbe collaborated with his workers, turning the responsibility for working out jobs to the employees themselves. He gathered the plants' masters and journeymen together, outlined the procedures and principles, and left the organization and the actual work up to them. He insisted that the machinery be developed by the skilled workers, aided by scientists and engineers. Using group problem-solving techniques as well as feedback from workers and respected craftsmen, he helped Zeiss Company achieve recognition in the optical business.6

---

3 Ingle, p. 6.
4 Ingle, p. 6.
5 Ingle, p. 6.
Writing in *Quality* magazine, Frank Squires reviewed the origin of statistical quality control techniques achieved through group participation. After the acquisition of Bell Laboratories in 1925, AT&T appealed to them for assistance in solving the massive inspection problem at Western Electric. As a result, statistical quality control was developed by Doctors Shewhart, Dodge, Romig, and others of Bell Laboratories.7

In the late 1940s, IBM also used group problem-solving techniques. As one of the first electronic computers was being developed, the great demand for it caused production to begin before the engineering details were completed. Engineers, foremen, and workers cooperatively worked out the details, resulting in a superior design in which the production engineering was significantly better, cheaper, and faster. Because each worker shared in the engineering of the product, each employee's total level of involvement increased, as seen in the better and more productive work.8

The growth of companies after World War II created problems, and mass production resulted in a loss of closeness between management and the workers.9 "Participative Management System" was started in the late 1950s by Sidney Rubenstein. Using the same basic idea as that used in quality circles, Rubenstein began the program in many small companies. A glass factory, for example, achieved higher production,

---


8 Ingle, p. 7.
better quality, and improved communication. Another company not only
achieved higher production but also reduced the cost of production
and was thereby able to achieve a higher level of competitiveness.

In his program Rubenstein used the philosophy that workers knew their
own jobs best and that they had the knowledge needed to improve
quality. Some of the components of Participative Management System
are as follows:

1. Concepts of participative problem solving
2. The study of a problem as a group
3. The organization of information
4. A strategy for planning the process when the end product is
   well defined
5. A strategy for understanding and controlling the process
6. A strategy for solving goal-oriented problems
7. The general sequence of problem solving:
   a. Identification of the problem
   b. Analysis of the problem
   c. A plan for the solution
   d. Implementation of the solution
   e. Evaluation of the solution
8. Case studies and examples\textsuperscript{10}

Quality Circles in Japan

After World War II, people in Japan were more interested in surviv­
ing the aftermath than in maintaining a high level of quality control

\textsuperscript{10} Ingle, pp. 7-8.
of their products. The quality of goods became so poor that the identification MADE IN JAPAN came to symbolize poor and shoddy quality to the rest of the world.\footnote{11}

General Douglas MacArthur felt that something could and should be done to improve the nation's image as well as its products, and he requested assistance from the government of the United States. The United States government complied and sent Dr. Edward Deming, a government statistician, to teach quality control methods to Japanese management leaders. Deming worked with the Japanese from 1948 to 1950 and was honored for his services in 1951 when the Japanese government created the Deming Prize. Deming's system, also known as the Deming Wheel, is that everyone should plan, collect data, analyze data, construct the work, and keep the circle rotating.\footnote{12}

From 1954 to 1955 another prominent consultant, Dr. Juran, made a series of visits to Japan. While there, he lectured and preached what is known as Total Quality Control. In this program, quality begins in the design stage and ends only after satisfactory services are provided to the consumer; for a company to be successful, quality must be viewed as a total, all-encompassing concept. At this time, the Japanese government was also deeply involved in this service aspect for a quality improvement program. Under a comprehensive plan, many programs on quality control, statistics, and related subjects

\footnote{12 Ingle, p. 8.}
were broadcast on radio and television. The month of November was proclaimed Quality Month with "Q" flags, slogans, seminars, and conventions initiated during the month to promote the drive for quality.13

During 1961 Kaoru Ishikawa and the Union of Japanese Scientists and Engineers (JUSE) tied the theories of the behavioral scientists together with those of the quality sciences. The result was the concept of quality circles, commonly known in Japan as quality control circles. The first circles were registered with JUSE during May of 1962. The phenomenon grew in Japan to involve millions of employees.14

Gradually, the Japanese image began to change. Additional requirements and special checks were added for products that were to be exported. By the 1970s, the quality of Japanese products was no longer considered inferior. Today, that quality in a number of fields is considered to be outstanding. This change in quality was not magic, nor was it accomplished overnight. It took Japan thirty years of hardship and dedication to quality for that country to become the third industrial power in the present world.15 (See Appendix B for a brief review of the thirty-year history of quality progress in Japan.)

13 Ingle, pp. 8-9.
15 Ingle, p. 9.
Elements of Quality Circles

The quality circle is a group problem-solving technique in which six to fifteen workers from a given area gather several times a month on company time to study, discuss, and solve problems that affect their production area. Quality circles use the skills and the know-how of the workers who deal with a problem on a daily basis and whose efforts ultimately determine the quality of the product. Due to the greater potential for worker job satisfaction, the common results from the implementation of quality circles include improved quality of products, lower production costs, better labor/management communication, higher productivity, and increased patents and inventions.16

In quality circle programs, membership is voluntary; no member is required to participate, and no one is kept out. The process is perhaps the most democratic one in existence. The following are some of the objectives of quality circles:

1. To reduce errors and enhance quality of work and product
2. To inspire more effective team work
3. To promote individual job satisfaction
4. To increase employee motivation
5. To create a problem-solving capacity within the organization
6. To build an attitude of "problem preventiveness"
7. To develop harmonious manager/worker relationships
8. To improve communications within the organization

9. To promote personal and leadership development

10. To develop a greater safety awareness on the part of employees

There is no limit to the number of circles in a given area, even if all of the people in the area do basically the same work. Circles are created as they are needed to accommodate all those who desire to participate. Most circles are advised to stick to quality issues; however, any problem that could directly affect work or work environment is considered appropriate provided the issue is not within the province of the union. Each circle determines its own code of conduct, and the meetings are conducted along fairly structured lines.

The circle is comprised of four interrelated segments: a facilitator (or program coordinator), circle leader(s), the members, and a steering committee. While the facilitator trains circle leaders and acts as backup to them during member training, the circle's first leader is most often a supervisor from the work area. Because the supervisor is already accepted as one who is in a leadership role in the organization, he/she is usually able to expedite acceptance of the quality circle concept. Even while acting as the group's leader, however, this person still functions as a member of the circle, receiving his/her share of the responsibility for analyzing the problem and working on solutions to the problem.

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17 Trades Union Congress, p. 11.
18 Trades Union Congress, pp. 11-12.
19 Trades Union Congress, pp. 11-12.
In approaching a situation, a circle follows a prescribed step-by-step procedure:

1. Identification of a number of problems
2. Selection of the one with the highest priority
3. Collection of the required data
4. Analysis of the problem
5. Selection of the recommended solution
6. Presentation to management

When a circle has dealt with all immediate problems, they then work with problem prevention and productivity improvement.  

Theory Z

Characteristics

Theory Z is not, strictly speaking, a real theory; it is a model based on four highly interdependent characteristics:

1. **Commitment to an overall philosophy.** The philosophy statement includes objectives of the organization, its operating procedures, and the constraints and expectations placed on the organization by its environment. Through the application of its stated philosophy, the organization ensures consistency in its direction and activities.

2. **Emphasis on the long term.** A long-term development of an organization's employees as well as its products is planned and provided for.

3. **Trust.** This basic prerequisite comes from the understanding that everyone in the company shares fundamentally compatible goals.

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20 Trades Union Congress, p. 12.
Essential to Theory Z is the belief that a person treated with trust will perform more efficiently not only on the job but also in all other areas of life.

4. Participative decision making. According to Theory Z, a participative approach to decision making yields more creative decisions and more effective implementation than does individual decision making.\(^{21}\)

The Application of Theory Z to Schools

Unlike industries and companies, educational organizations have had to contend with a lack of promotion opportunities, creating the potential for serious motivational problems for teachers. With Theory Z, as with the quality circle concept, the emphasis is on shared responsibility for decision making, thus providing a meaningful alternative to direct promotions.\(^{22}\)

Ouchi has suggested that the "excitement and challenge of a task" can be used as an acceptable substitute for promotion and specialization considerations.\(^{23}\) This alternative could be accomplished by "changing teachers' assignments every few years so that they

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experience the challenge of different grade levels, courses, ... school settings," as well as supervisory and "administrative duties." In varying the teachers' experiences, these opportunities will not only stimulate the teachers but will also show them how educational experiences are interwoven and how they lead to students' overall development. Teachers would then be able to see the nature of the school as it should be seen—holistic rather than segmented.

Implementing Theory Z

Theory Z is not an overnight solution to a school's problems. Beginning with the top of the organization and working its way down through all parts, a Theory Z implementation process is slowly worked out over a period of several years. The process calls for much more than a verbal commitment: administrators and teachers must learn the skills of participative decision making; strategies for collecting feedback must be identified and established, and a system for long-term faculty development must be instituted. All parts of the organization must be taken into account and must be involved in the process.

Quality Circles In Industry

American Need

In spite of modern technology, the United States as well as other industrial nations in the 1980s experienced serious economic problems because of decreased productivity and increased foreign competition.

24 O'Hanlon, p. 17.  
26 O'Hanlon, pp. 17-18.
The situation was not entirely new; in terms of competition, industries in the United States had seen a gradual decline in productivity growth rate. In the 1960s the United States accounted for more than 25 percent of the manufacturing exports of industrial nations while supplying 98 percent of its domestic market. In the 1970s the United States industries encountered 125 billion dollars in lost production and a loss of at least two million industrial jobs. Since 1950 the United States has had one of the poorest growth rates of the industrialized nations, and during the past ten years, nineteen nations have surpassed the United States average annual productivity growth rate of less than 2.5 percent.

Japanese Model

While United States industries' fortunes have waned, Japanese industries have experienced growth; productivity in Japan has increased at 400 percent the rate in the United States since World War II. By 1980 the market was completely dominated by Japanese products, clearly substantiating Japan's claim as leader in quality workmanship in the world.

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27 Ingle, p. 1.
29 Ingle, p. 1.
30 Ouchi, pp. 3-4.
31 Ingle, p. 2.
Japan's spectacular rise in quality and productivity is credited to the six-point program developed to maintain a quality image:

1. Quality audits
2. Nationwide promotion for good quality
3. Quality training
4. Use of higher statistical methods
5. Nationwide quality control activities
6. Quality circles

Although quality circles are listed last in the six-point program, their importance to Japanese industrial growth cannot be overstated. From the first quality circle conference in 1963, the movement has grown to include over 100,000 registered circles and possibly up to 1,000,000 unregistered circles throughout Japan. The movement has also broadened its base, first encompassing only production level workers and now including workers in white collar positions.

Implementation in American Industries

Clinical data from ten years of testing show that productivity can be improved through a change in the way work gets done and a change in the values and management philosophy of an organization. Although behavioral scientists have extolled the benefits of participatory management for thirty years, American industries have been slow to listen. They are listening today, however, and in greater numbers all the time

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32 Ingle, p. 3.

Since the advent of quality circles in the United States, some 200 companies have instituted the circle concept in their organizations. ³⁴

One of the first organizations to become involved in the quality circle movement in the United States was Hughes Aircraft Company. After eight years of working with quality circles, the company had expanded its program to include over 500 circles, with about 40 percent of them in white collar areas. ³⁵ The most famous implementation, however, is perhaps that of General Motors' Tarryton, New York, plant. Over a period of years the plant went from one of the worse to one of the best in the system by using the participatory problem solving techniques of quality circles.³⁶

Other examples abound. All or part of the quality circle concept was used in each of such diverse business organizations as Rockwell International/Collins Transmission Systems Division, Hoechst Fibers Industries,³⁷ Rushton Mining Company, General Foods' Topeka pet foods plant,³⁸ Bethlehem Steel, National Steel Corporation,³⁹ Honeywell, Martin Marietta Corporation/Michoud Division, and General Dynamics/Pomona Division.⁴⁰


³⁶ Cohen, p. 54.

³⁷ Mohr and Mohr, pp. 144-45, 157.

³⁸ Cohen, p. 58.

³⁹ Dreyfack, p. 142.

Quality Circles in Education

Application to American Education

Growing public concern over the decline in student achievement scores has forced educators to seek a more productive method of conducting the "business" of education. If, as Cawelti asserts, "Productivity means . . . accomplishing more while using the same amount of resources," schools cannot expect the public to believe they are being productive when they continually ask the public to provide more and more in the way of resources.

Many educators are seeing the decline in achievement scores and the decline in business growth as the two sides of a cause-and-effect relationship. They see the investment in human capital in the form of education and the rate of growth and productivity in the United States as inevitably tied together. Because of this close link, those educators are taking a close look at the success of quality circles in industry, seriously considering the feasibility of the application of the concept to American education.42

Two of the major issues facing educators who are studying the quality circle concept with regard to education are 1) whether American and Japanese cultural and societal differences make adoption or adaption possible and 2) whether management practices from industry are

42 Cawelti, pp. 63-64.
transferable to education. The answer to both issues lies in the universality of human needs in organizations.

The Japanese approach is based on McGregor's now-classic Theory Y management approach. Theory Y maintains that people "are capable of self direction; exhibit self-control; are naturally creative; and strive for excellence." Taken as an administrative tool, this theory provides for a formal structure that "allows individuals greater freedom to act or to express themselves ... and motivates through encouragement and recognition." Theory Y, then, leads to a humanistic or democratic approach—in short, a participative style of management as seen in quality circles.

Schools are "people places" where people work for, with, among, and beside other people, all responding to the same basic set of needs; and "Quality circle activities have no socioeconomic or cultural limitations. Human beings are human beings." The participative style of management can be used to help people in the organization work together toward improving those policies that affect procedures, the work environment, and teacher-administrator relations as well as reaching solutions to achievement, discipline, and instructional problems.


45 Knezevich, p. 57.


47 Cawelti, p. 67.
Existing Educational Quality Circles

Although the Northwest Educational Cooperative, an agency which serves more than 500 midwestern school districts, calls quality circles a promising method to upgrade quality, productivity, and morale in schools, the quality circle concept is still slow to catch on in education. The key issue in establishing quality circles in a school setting is that of top level trust and support.\(^{48}\)

Still, schools experimenting with quality circles have reported success. From the program instituted at Lawrence North High School in Indianapolis, Indiana, came two major changes: 1) inservice participation attained an all-time high in numbers as well as in enthusiasm when the activities were designed and executed by teachers and 2) a parent-student exchange program included more than 50 percent response from the targeted parent group in a program that resulted from group efforts by parents, students, and teachers.\(^{49}\) A larger, somewhat more ambitious program has been initiated in the Muskegon Public Schools in Muskegon, Michigan. Called quality interaction circles, their circles are working with voluntary participants on both the middle management and the staff levels. Based on the success of the existing circles, quality circles are also scheduled to be introduced in selected classrooms soon.\(^{50}\)


\(^{50}\) James S. Bonner, "Japanese Quality Circles: Can They Work in Education?" Phi Delta Kappan 63 (June 1982): 681.
In higher education institutions, quality circles have already proven themselves at Central Piedmont Community College in Charlotte, North Carolina, and at Lane Community College in Eugene, Oregon. Believed to be the first quality circle program (by name) in an American educational institution, the program at Piedmont was implemented in the Media Production Department in December 1980. The success of the pilot program led to a grant proposal to implement quality circles throughout the college. As of February 1982, ten circles were in full operation; three departments were involved, and eighty staff members were actively participating.\(^{51}\) The program at Lane actually began years before the first circles got underway. Their campus productivity center, originally established to increase efficiency, laid the groundwork for the six quality circles that were implemented in the fall of 1981. The overall plan is to establish circles throughout the college as leader training is expanded and as understanding of the concept is spread.\(^{52}\)

**Implementation of Educational Quality Circles**

Quality circles can be implemented in a school setting to deal with a variety of problems, from student discipline, increasing time on task with students, orienting new teachers, library organization, and graffiti on lockers and bathroom walls to reducing student waste of school food. Writing for *Educational Leadership*, Larry Chase


cites seventy-six typical problem areas for quality circle consideration by teachers, principals, librarians and library aides, central office secretarial staff, bus drivers, and food service workers. The topics are limited only by a school system's needs and resources.

In a six-step plan, Chase further outlines the procedures for implementing a quality circle program:

1. Obtain top administrative support. While the top administrator does not have to participate directly as a circle member, the administrator's support is crucial for any long-range commitment of organizational resources.

2. Establish a steering committee. Composed of representatives from various organizational power groups, this committee is responsible for monitoring the installation and evaluation of the program.

3. Appoint the facilitator. This person is the key individual in the process, being the most knowledgeable and resourceful regarding the quality circle concept.

4. Present recommendations to management. In this presentation, the circle members present their recommendations and supporting data to their assigned supervisor. The individual receiving the presentation must be open and willing to go along with valid recommendations. If the process has proceeded appropriately, all-out rejection of a recommendation is very unlikely.

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5. Evaluate the effectiveness of the program. One of the responsibilities of the steering committee is to establish criteria for evaluation of the program. These criteria often include not only actual cost savings but also participant perceptions of the worth of the project and benefits to morale, job satisfaction, and work climate.

6. Expand the program. Typically, about six months into the program, the facilitator and group leaders in the pilot circles will identify a circle member in each group with the capability and willingness to become a new leader. These individuals are then trained and allowed to set new circles as the demand for participation increases.\textsuperscript{54}

\textsuperscript{54} Chase, pp. 24-25.
CHAPTER THREE

The Processes of Quality Circles

A quality circle is described as a structured problem solving model. After it was developed by Japanese industrialists to improve the quality of their products, the model spread rapidly throughout Japanese, American and European business, government and health service organizations.¹

Philip C. Thompson outlined the following as the highlights of quality circles:

1. Quality circles are small. They range in size from four to fifteen members. Eight is optimum.
2. All members come from the same shop or work area. This shop or work area gives the circle its identity.
3. The members work under the same supervisor who is a member of the circle.
4. The supervisor is usually, though not always, the leader of the circle. As a leader (s)he moderates discussion and promotes consensus. The supervisor does not issue orders to make decisions. The circle members as a group make their own decisions.
5. Voluntary participation means that everyone in a shop or office has an opportunity to join, to refuse to join, to postpone joining, to quit, and to rejoin.
6. Circles usually meet once every week on company time and with pay.
7. Circles usually meet in special meeting rooms removed from their normal area.
8. Circle members receive special training in the rules of quality circle participation, the mechanics of running a meeting and making management presentations, and the techniques of group problem solving such as brainstorming, cause-and-effect analysis, flow charts, and Pareto analysis.

9. Circle members, not management, choose the problems and projects that they work on.
10. Circles collect all the information and help, if possible, in analyzing a problem and developing a solution.
11. Technical specialists and management in general assist circles with information and expertise whenever asked to do so.
12. Circles receive advice and guidance from an advisor who attends all circle meetings and but is not a circle member.
13. Management presentations are given to those managers and technical specialists who would normally make the decision on a proposal.²

The Introduction of Quality Circles

The quality circle process could be a useful tool for an organization or society interested in exploring the process possibilities as a means of realizing quality goals and productivity. A quality circle should consist of a small group of people (four to fifteen; ideally about eight in number) within an organization who should do similar kinds of work. The group of volunteers should meet on a regular basis, about an hour a week, to identify, analyze, and solve problems of its members' work area. Their training should consist of learning techniques: problem solving, data gathering, and problem analysis.

In the circle meetings, members should begin by brainstorming a list of problems to be solved, then narrow the list to a few problems that seem most desirable and practical to attack. If circle members come up with a solution to the problem they choose to work on, the group might present its recommendations to management in a formal presentation. If the recommendations were approved, the circle then should implement the solution.³


In an organization, quality circles should be set up with the guidance of a steering committee or coordinator drawn from, or including representatives from, upper management. It was assumed that a facilitator from outside the department should monitor the meetings, which were guided by a leader who should be typically a first line supervisor of the work group from which members are drawn. Personnel involved in the quality circle process should be trained before quality circles are implemented and should expect to continue to give time and support as the program gets underway.

The quality circle process should be carefully assessed in terms of the organization's and employees' needs before it is implemented. It should be noted that quality circles require sustained support from both management and workers if quality circles are to succeed. Whether quality circles were regarded as appropriate tools for a given organization would depend on the organization itself. If management considered plans for a quality circle program, it would be essential to be aware of what quality circles had accomplished or were likely to accomplish in their environment.

Application of Quality Circles

The aims for using the quality circle process in any organization should vary with the organization's goals. Quality circles could be used for implementing the approach of a type Z organization. They could be used to improve the performance of an organization and its work force, to help the company in a competitive world, or to provide a catalyst for cultural change within the organization.
Similar to participative management, quality circles would require a long term commitment on the part of management. The implementation of the process would take time, careful planning, and sustained and visible management support. Management should be aware that even though the return on investment potential might be good for the long run, productivity might decrease during the initial period, as those within the organization became familiar with and well adjusted to the technique. It should be understood that those operating with quality circles should not expect an immediate result. It would take a while before they show tangible results.

According to William L. Mohr and Harriet Mohr, the gains of the program of quality circles could be considered with patience over the long run. They noted that companies that did a return-on-investment calculation or cost/benefit ratio on quality circle programs found the payback ranged in the order of 2:1 to 14:1. They further pointed out that many companies realized a substantial return after only one year of implementation.\(^4\)

They also observed that it was estimated that over fifty billion dollars was realized in the first sixteen years of quality circle implementation in Japan as a result of quality circle problem solution. More recent reports indicate that cumulative savings exceeded five billion dollars per year. It was believed that the larger United States' economy, coupled with American creativity and ingenuity, could lead to savings in the United States exceeding ten to fifteen billion dollars per year by applying quality circle techniques.

\(^4\) Mohr and Mohr, p. 25.
Obviously, some organizations were drawn to the quality circle process out of a desire to enhance their profitability by making better use of their human resources. The main purpose should be people-building, not people using, thereby enabling workers to become involved in and committed to the organization, and assisting them to meet personal as well as professional goals in the work area.

**Participative Management**

The theory of quality circle process should be regarded as the implementation of a type Z organization. This theory, with its participative management style, should be a step for bringing more democratic values into the world environment and giving workers more of what they value most in the culture: freedom of self-expression, equality, and respect for human dignity and individuality.5

As far as participative management is concerned, the quality circle process could help an organization to make full use of its human resources at any time. Participative management should be regarded as the key to successful quality circle process. It was observed by Sud Ingle that without effective participative management from various levels, the quality circle process could not achieve a high degree of success.

For the successful implementation of participative management, an organization's goals should be in harmony with the goals of employees. As William L. Mohr and Harriet Mohr observed, "Organizational objectives--such as increased productivity--should be attainable

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only if they were consistent with individual objectives, such as self-esteem. To them, quality circles should be regarded as a means of ensuring that workers' needs were recognized and addressed and workers themselves should be committed to the goals of the organization. Through involvement of workers in setting objectives from the bottom up, should come a sense that all the people in the organization should be working together toward common goals.

In the organization of quality circles, every person, irrespective of rank, should be invited and encouraged to enter the problem-solving arena and share in the responsibility for achieving excellence. Benefits of participative management could be summarized as follows:

1. Gaining higher levels of excellence and efficiency by increasing quality consciousness throughout the organization

2. Utilizing the company's human potential and talent by offering employees more challenging, interesting, and diverse tasks in which to express their creativity

3. Developing feeling within the world environment, interdependence, and a sense of belonging to a community

4. Fostering worker's identification with the company, its products, and its goals

5. Motivating employees by increasing their responsibility and power in the decision-making process, as well as their authority to bring about change

6. Improving communication within and among various levels of the organization

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6 Mohr and Mohr, p. 25. 7 Mohr and Mohr, pp. 28-29.
7. Providing more visibility and feedback from employees
8. Opening the organization's access to new ideas from employees,
and
9. Building trust among organizational members at all levels.\(^8\)

**Difficulties in Organizing Quality Circles**

Quality circles, a refreshing alternative to the bureaucratic philosophy of American management, could be very exciting; but if not managed properly, the process could result in a number of unforeseen difficulties. Sud Ingle pointed out some of the general problems to be anticipated.

1. **Poor training:** The quality circle program could not start or survive without adequate training of the participating personnel. People should be trained properly and be convinced that it is a "people-building" program based on a sound training system.

2. **History of the previous programs:** Many companies started new programs without adequate planning. These programs began in response to a high level pressure or just to keep up with others. Normally, such programs would not last long.

3. **Union relationship:** Timely help from labor unions could make quality circles a tremendous success. However, the history of quality circles in Japan indicated that the union barely supported this program. It seemed also that there was limited involvement from union leaders. In other countries, where the relationship between unions and management was and still is different, it should be recommended that union leaders

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\(^8\) Ingle, pp. 198-99.
be informed of the basic principles of quality circles such as that it should be a people-building philosophy and that it should aid in the development of a higher quality workmanship. The cooperation between union and management would vary in different companies. It is essential to be patient with union leaders and keep striving for more cooperation.

4. Insufficient Support from Top Management: Top management support of quality circles should be a must. Many companies seemed unaware of what kind of support should be expected from top management. The top management should issue a quality circle policy and attend management presentations to show its interest in the programs.

5. Insufficient Cooperation from Middle Management: The operation of quality circles and the implementation of projects that were completed by quality circles sometimes increased the feeling that middle management was losing its authority in various manufacturing areas. No one should lose his authority in a participative management style; on the contrary, this concept should help to improve cooperation and communication in different departments. In countries like the United States and Nigeria, the success of quality circles would depend on convincing middle management that there should be no limit to what the specific parties could do together.

6. Inadequate Publicity: Recognition of the circle's achievement should be a must. Circle members and circle leaders appreciate being publicly recognized. It is essential to advertise recognition programs adequately. A monthly newsletter, posters, pictures, small seminars, and many other similar programs, such as dinners or picnics, should help to publicize the program throughout the company. However, one must be very careful not to give too much publicity to any or all
programs at the initial stage because there may be many problems later on. Almost everyone is enthusiastic at the start of a program; sometimes dissatisfaction is created in the groups by neglecting some key points in the publicity. Therefore, great care should be taken with publicity, and the advice of the circles should be asked.

7. Difficulty in Unrelated Problems: Quality circles should be regarded like infants in the beginning; they do not know how to talk, walk or laugh. They do not know where to go or what to do. It is necessary for them to be nourished and given proper direction. Problems selected for solution should be simple and work-related in the beginning. Circle members should be guided in the use of statistical problem-solving techniques. At this time, the facilitator should avoid getting circles involved in solving problems like material planning or scheduling. Quality circles could not contribute much since they have little control and knowledge in these areas.

8. Unrealistic Expectations: Circles should not be regarded as panacea for everything. The program has most potential for solving daily problems where members know more than anybody else about the work. However, the program should not solve the research problems or financial problems of the company. One should not expect quick results; it should be regarded as a new management philosophy, and it should take time to build confidence in it.

9. Poor to Slow Response from Management: It is of great importance that circle members present regular reports on their projects to management. There should be interim reports and final proposals or reports on discontinued projects. It is their opportunity to share their pride and happiness with management. Furthermore, management
should make sure that suggestions or proposals are analyzed properly as soon as the occasion permits it. A timely response should be offered to the circle members so that they can understand that a follow-up is in process and their efforts were not wasted. If management did not start a follow-up system, the circle members would get discouraged, communications would break down, and members would soon lose interest in the program, thereby putting it in jeopardy.9

The Implementation of Quality Circle Programs

For this implementation of quality circles, an organization should run a pilot program, which normally would last about six months. The purpose should be to test the philosophy, guidelines, and procedures of the quality circle process in the environment and culture of the company. The pilot program should not be construed as an indication of whether quality circles would work in the organization but as a way of learning what should be modified to make them function in the most productive and effective way.

Immediately after an arrangement is concluded to start a quality circle program within the organization, a steering committee should be formed. In the field of participative management programs such as quality circles, every major organizational element should have its own steering committee. The committee's function and primary objective is to provide the leadership to plan, implement, and maintain a successful and permanent quality circle program for the organization. Normally, the steering committee would consist of about six to twelve members, who would be drawn from within the organization.

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9 Ingle, p. 195.
These people are selected on the basis of their position in the division and ability to represent one segment of it. For example, in many organizations, the steering committee is composed of the division manager's staff.\textsuperscript{10}

To begin a plan for the pilot program is a joint effort among the steering committee, the coordinator, and management. With the plan approved by management and circulated to union officials and others as appropriate to gain their understanding and support, implementation could begin. The pilot program should consist of at least three quality circles and should not exceed eight. Pilot circles should be placed where managers are not just supportive but are champions of the program. It is important that the pilot program be successful and the steering committee should do everything possible to enhance the probability of positive results.\textsuperscript{11}

**The Duties of the Facilitator**

The major success of the pilot program is dependent upon the appropriate selection of facilitators and leaders, the people who are directly responsible for guiding the quality circles' weekly meetings. The facilitator has the most difficult task in the quality circle process, because he or she has several distinct roles to perform: role model for the members, aid in learning facilitation skills, work for the leader's process consultant for the circles, and listen to management. The role of facilitator might be either a part-time or full-time position, and valid argument exists for both. Often in quality circle literature, no clear distinction was made between the roles of coordinator

\textsuperscript{10} Mohr and Mohr, p. 46. \textsuperscript{11} Mohr and Mohr, p. 60.
and facilitator. A full-time facilitator who could facilitate up to fifteen quality circles might be a specialist in the behavioral sciences hired from outside the organization for his or her expertise in group dynamics and process consultation, or someone with appropriate skills within the organization might be trained for the position. Using a full-time facilitator should have some advantages in that it would be a more effective role to fill than having several part-time facilitators. The organization should be assured of professional approach.  

The part-time facilitator, a volunteer from middle management, might guide from one to four circles. In many cases, the middle manager should facilitate only one quality circle outside his or her area of responsibility. The risk to this approach would be that middle managers might lack experience in group dynamics and process orientation. They might have some difficulty at first in counseling the group effectively. As they gain competence, however, these people should become better not only in managing the circle but also in their respective departments as well. The end result should be a stronger management team with the capacity to do a more effective job of managing group dynamics throughout the organization.  

A second benefit of part-time facilitation would be the involvement of middle management in the quality circle process. Quality circles should assist in establishing a new rapport between upper management and employees. The middle managers who did not have a role in the process might be reluctant to support it, especially if the circles were

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12 Mohr and Mohr, p. 63.  
13 Mohr and Mohr, p. 64.
solving problems they perceived as falling in their areas of responsibility. If the facilitators were drawn from middle management, this problem should be alleviated.

A third benefit could be the exposure of middle managers to a different aspect of the organization's business, enabling them to grow beyond their areas of specialization.

The final role of the facilitator should be as a liaison between circle members and management. In this way, he or she would act as a representative of management to the circle members and as a representative of the circle members to management. If the members question management's support, the facilitator should ensure that it becomes more visible. He could also guide the circle members to specialists or managers if they required additional information.  

Mohr and Mohr outlined the following as the criteria for selecting quality circle facilitators:

1. Should be able to train quality circle leaders and members in quality circle techniques
2. Should be able to express ideas and quality circle philosophy, both written and verbal
3. Should have demonstrated leadership and organizational ability in the participative management process
4. Should have demonstrated enthusiasm for quality circles
5. Should have ability to contact and obtain support from all levels of management

14 Mohr and Mohr, p. 65,
6. Should be sensitive to the needs of others

7. Should be able to organize and conduct meetings and presentations.15

Once the circle members mature to the point where they can operate smoothly without intervention on the part of the facilitator, they should be allowed to do so. At this point, the facilitator should diminish his active participation in the circle and assume more of the role of a process observer. This might be very difficult for some individuals because it would mean relinquishing a certain amount of power. Therefore, the facilitator should be someone who could gain satisfaction from intrinsic rewards, as there would be no extrinsic reward system associated with the role. While the facilitator is essential to the circle's ongoing success, he must be able to resist the temptation to foster dependence on the part of members or to take credit for the circle's achievements.16

**The Role of the Leader**

The leader's primary responsibility should be for the content of the quality circle meetings. As the discussion leader, his role is to ensure that everyone in the circle participates and keeps the focus on completing the agenda that has been collectively set. The leader's effectiveness and the program's success would thus be a function of his capacity to inspire self-confidence in the participants, thereby increasing their motivation and commitment to the purposes of the group.

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15 Mohr and Mohr, p. 68.  
16 Mohr and Mohr, p. 68.
The leader would have a difficult dual role to play because he is a guide and at the same time a participating member with the same authority and power as every other member.\textsuperscript{17}

A leader of a quality circle who is also the member's work supervisor might find it difficult to be both a leader and a participating member. As a leader, he has a problem-solving and employee centered orientation and should not rely on traditional hierarchical, top-down authority to direct the circle's activities. Individual circle members should have an equal voice and be expected to contribute to solving the problems; the leader's role should include encouraging and supporting this equal participation.\textsuperscript{18}

The primary task of the leader is to guide the circle in the activities necessary to achieve effective results in problem-solving. He should excel in planning and preparation and be able to encourage and guide the group. It is essential that he possess patience, as ideas must be given ample time to incubate. The qualities of being nonjudgmental and non-authoritarian are essential to the ongoing success of the leader and the group. The leader's purpose should be to serve the members and their goals, not to assert authority. Again, another function should be to keep the meeting under control, to utilize the time in a productive and efficient way. It is important for the leader to organize the material in such a way that the agenda items are given due attention, with as many members participating as possible.

\textsuperscript{17} Mohr and Mohr, p. 69. \textsuperscript{18} Mohr and Mohr, p. 69.
The leadership task should be accomplished in a participatory style by creating situations for optimum growth and learning in members. The leader, with the help of the facilitator, is responsible for teaching problem-solving techniques to the circle members, thereby assisting them in gaining access to information when needed. He should advocate participation and involvement and should be a role model of these ideals.

The following list describes the leader’s responsibilities in keeping the quality circle meeting productive and efficient:

1. Balance the discussion by drawing out the least verbal participants.
2. Do not allow the more verbal members to dominate any issue.
3. Focus the discussion on meaningful goals and direct the participants toward a successful conclusion.
4. Check the meeting room availability and have the meeting begin and end on schedule.
5. Ask for a volunteer to take minutes and be sure that they are distributed to the circle members prior to the next meeting.
6. Communicate the agenda and goals at the beginning of each meeting.
7. Review action items and action addresses at the conclusion of each meeting.
8. Whenever appropriate, make maximum use of quality circle techniques.
9. Shortly before adjournment, solicit group discussion on the good and bad points of the meeting.\textsuperscript{19}

\textsuperscript{19} Mohr and Mohr, p. 69.
Some of the major functions of the leader:

1. Generate enthusiasm for circle activities.
2. Take care of operation of the circle.
3. Meet with the circle once a week.
4. Use facilitator for assistance.
5. Be responsible for circle records.
6. Generate coordination and harmony in the circle.
7. Be key link between members and management.
8. Attend leadership training.
9. Work closely with the foreman.
10. Seek advice and help if required.
11. Keep the meeting on track.
13. Maintain a good attitude about circles.
15. Start and end meetings on time.
16. Help get new members for the circle.
17. Promote quality circle.
18. Visit other companies.
19. Attend quality programs.
20. Teach others useful materials to better the society and surroundings.\(^{20}\)

\(^{20}\) Ingle, p. 45.
Quality Circle Membership

Following training, members should be responsible for attending the weekly circle meetings. The leader and the facilitator should help them to apply the concepts they learned in the training. The members' main job should be to identify, analyze and solve problems related to their work area. It is essential that causes of problems be within the circle members' work area, as these are the only problems members could be reasonably sure of having the capacity to solve.\(^{21}\)

Quality membership is essential for the smooth running of the organization. The members should be the heart of the program, and the proper utilization of their untapped brain power is the key to their success. Membership should be voluntary, and individuals who wish to join should be welcomed.\(^{22}\)

Even though quality circles are usually made up of members from the same work group, this is not always the case. The definition of quality circles stressed that members who do similar kinds of work experience similar kinds of problems. Experience showed that when the problem differed from the work that some members did, they lost interest in the problem-solving process. The key point should not be which work area the members come from, but the type of work they do. For example, Hewlett Packard had a quality circle of production engineers that included members from three different production engineering groups. Since all the engineers did similar kinds of work, they experienced similar kinds of problems and, therefore, were an effective working team in the circle format.

\(^{21}\) Mohr and Mohr, p. 72. \(^{22}\) Ingle, p. 47.
The Function of Management

The responsibility of upper management should be to provide positive and visible support for the quality circle process. It should flourish whenever management is seriously and sincerely committed to people-building productivity and quality improvement within a participative management style. Management must be committed to the philosophy and practical application of the program.

Management should also give approval to start the program and should offer basic guidelines so that the quality circles can operate within the company's administrative policy. The program should have its greatest potential for success when management focuses on human resource development and acknowledges its importance to both individual job satisfaction and achievement of the organization's goals. Management behavior should reflect the basic characteristics and humanistic philosophy of the quality circle process. If the management were sincere in supporting the concept of decision making at the lowest possible level, then it should be in alignment with the very core of the quality circle philosophy and structure.

In this way, they should promote an attitude exemplifying their concern for employees becoming involved in all matters affecting them. It should encourage them to contribute suggestions for improvement. The following list was brainstormed by a quality circle steering committee at one of the Hewlett's-Packard's divisions when they were asked by upper management what positive and negative support meant.

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23 Thompson, pp. 51-52.
1. Provide employees time away from the job to participate in quality circle activities.

2. Allocate time for management presentations and casual drop-ins on quality circle meetings.

3. Provide timely response to proposals submitted by a quality circle.

4. Be an active quality circle cheerleader—talk it up at functional and interdivisional meetings.

5. Be open to a quality circle's requests for financial support.

6. Provide feedback to the steering committee on quality circle problems, give praise.

7. Allow rewards/recognition to be intrinsic—don't stimulate competition.

8. Do not limit your quality circle support activities to this list. 24

Building a Successful Quality Circle Program

During the early 1980s, quality circles became an increasing interest in the United States. Reports showed that more and more companies, school systems, and universities were and still are initiating quality circle programs. Attendance at the annual conference of the International Association of Quality Circles consistently increased during those years. In January 1982, 6,300 sites were reported to have quality circles, and the attendance at the Fourth Annual Conference of the International Association of Quality Circles was 2,000, up from 1,100 the previous year. A major reason for the

24 Mohr and Mohr, p. 233.
widespread interest in and enthusiasm for quality circles was their success, both in achieving quality and productivity objectives and in increasing worker enrichment.

Although objectives differ and implementation routines vary, successful circle programs share the following attributes:

1. Voluntary participation.
2. Training for members, leaders, facilitators and managers
3. People-building philosophy
4. Problem selection and solution by members
5. Team work
6. Positive and visible management support.

Voluntary participation is of vital importance to any successful start-up and maintenance and should assure participants that quality circles are not just another management program but employee centered and of benefit to each and every level of an organization. For this reason, a quality circle program should be viewed as an image of democracy in action. This also means that its voluntary aspect ensures that every member of the circle is participating because he wants to be involved. Therefore, no one should be forced to join or to be involved in a process he might not be ready for or might perceive as threatening to security and order. Each member should ideally feel committed to the shared goals of the group, should identify with the team, and should want to be there to satisfy psychological and professional needs.

Intensive quality circle training should result in a potential for cost-effective problem solution. In 1981, Joseph M. Juran called attention to the uniqueness of the quality circle concept among all
motivational programs. Quality circles were based on the premise that employees could solve problems but had not been adequately prepared and trained for it.25

Carefully planned quality circle courses, focusing on problem solving and interpersonal communication skills, should be evidence of management's respect for employees and their potential to grow. The training and the increased opportunity for participation should reinforce the basic confidence of management and its belief in the work force. It was observed that when quality circle members attempted to function with little or no training, the results were months of wasted time, confusion, frustration and, in many cases, pronounced failures. Therefore, essential training should enhance members' problem-solving skills and teach them how to be more effective team players. Skilled, intensive, state-of-the-art training in team building and problem solving were virtually a must.

Teamwork should be regarded as an important characteristic of successful quality circles. Americans tend to be more competitive, noncooperative and individualistic than workers in other cultures. Therefore, teamwork should encourage growing beyond this individualistic stance to a more cooperative interdependent attitude. Members experience the reality of achieving personal aspirations by contributing to the purpose and direction of a team. In this way they demonstrate commitment to a larger purpose involving more than their own advancement. Working together as a team and deciding cooperatively on goals lead to

25 Mohr and Mohr, p. 235.
more emphatic awareness and trust of others. The team serves as a mirror to show the effect members have on each other.

New interpersonal relationships associated with quality circles help to overcome traditional blocks to communication and intimacy and reduce mistrust of authority associated with rank and bureaucratic structure. The feeling of friendship and concern between participants of a team should be an integral part of the cohesiveness of a school or company and should be viewed as a springboard for new commitments to organizational goals.

The Momentum of Quality Circles

There are three essential elements necessary to sustain the momentum of a quality circle program and to ensure that it becomes an integral part of the organizational framework:

1. Encourage the maintenance of attributes that were initially instrumental in making the program successful,

2. Maintain an ongoing training program for all levels of quality circle participants,

3. Structure the program for growth.26

At the 1981 International Association of Quality Circle Conference, Michael Donovan emphasized the difficulty of implementing, on a regular basis throughout the organization, the seemingly simple concepts of quality circles:

Most of you here have been able to get your quality circles going. That's the simple part. Making them a way of life in your organization is the difficult part. I have been working

26 Mohr and Mohr, p. 240.
with quality circles for seven years at Honeywell, and I can assure you that we are not there yet.27

As observed in Japan, quality circles were an integral part of an employee's work life and environment. Lifetime employment provided the stability necessary for a program of continuous training in the workplace. The worker's creative contribution and level of conception were examples of some of the positive benefits reaped by Japanese organizations in which individuals were given opportunities to use the training they received to advance toward achieving higher levels of quality and productivity improvement in the workplace. In contrast, in the United States, the process of integrating quality circle concepts within the organizational framework and goals was not well defined. For this reason, quality circles were at one time referred to as just a passing fad similar to other highly touted motivational and work improvement programs.

The Growth of Quality Circles

As the growth of quality circles continued, more people demonstrated their interest in participating. Structuring the quality circle program growth became an essential issue. From the time the pilot programs are successfully completed, growth should be strategically planned for and coordinated. It was observed that as the program grew within a large organization, the need for a coordinating structure and focal point increased. A steering committee might serve in that role, but typically it could not deal with the level

27 Mohr and Mohr, p. 241.
of detail that required attention on a daily basis. At Hewlett-Packard, where decentralization was paramount, most divisions identified a coordinator to serve as the focal point for the quality circle program.

The coordinator should serve not only as the focal point for management and the circle members, but should also be regarded as the interface between the steering committee and the quality circles as well. To a certain degree, he could be the communication focus between the two. If the number of quality circles reached above fifteen, it would become more and more difficult for the coordinator to keep abreast of all the circles' activities and problems while continuing to carry out his regular responsibilities. One way to address this problem, while enhancing the quality circle process and sustaining the growth momentum, was effectively used at Hewlett-Packard's Data Systems Division, where the steering committee established six operating committees as well as a training committee and a publicity committee. Each operating committee, consistent with Hewlett-Packard's participative management style, was chaired by an experienced quality practitioner, and the committee members included one representative from each of the five quality circles that the group monitored.
CHAPTER FOUR

Analysis of Telephone Interviews

A report and analysis has been made of the correspondence and telephone interviews with representatives of educational systems in which the quality circle concept and processes have been implemented in educational administration.

Question 1: Specifically, how did you develop an interest in quality circles?

Responses: Of the ten respondents to telephone interviews, one had discovered the concept of quality circles through his employment in industry. He first heard of it through a visit to his plant by a group of Japanese engineers. He pursued the matter by attending a seminar at Stanford University and visiting Japan to study the concept further.

Five respondents first heard of quality circles through reading, and one discovered it while watching a network television program.

Seven respondents had had some limited formal training in the application of quality circles through institutes and seminars of various lengths in different places.

Six respondents reported that they had been personally involved in the implementation of quality circles through the development of training models which they offered to teachers and administrators as an approach to human resource development.
Question 2: Did you have any formal training in the concept and practice of quality circles? If so, where and with whom?

Responses: Five respondents received training through one-week workshops, services or institutes in Red Bluff, California; Elmhurst, Illinois; and Chicago, Illinois. One attended a seven-hour seminar in Knoxville, Tennessee.

Two respondents were trained by consultants brought to their school system for that purpose. In one instance the consultants were from the Quality Circle Institute, Red Bluff, California; the others were from South Bend, Indiana. Two respondents reported that they had had no formal training but had developed their own programs based on reading, consulting with experts, and relating their efforts to previous knowledge and training in human resource development.

Question 3: How did you introduce the quality circle concept to your school system?

Responses: Among all the ten respondents to telephone interviews, one of them expressed that question three was not relevant to him because he was teaching in the university level, not in the school system. Therefore, he expressed that it was impossible for him to introduce it to any school system.

Two respondents spent a year talking about the quality circle methodology from the institute which used slides that were packaged for people to know in depth about the movement of the quality circles. The school superintendents and board members were asked for recommendations. (1) They found that the methodology used as well as slides for teachers and administrators were not useful. It was not a good instructional model; rather, it was better with industry. (2) It was
found that the cost of training was exorbitant for the schools to get involved with quality circles. They added that these problems were the stumbling blocks for the introduction of quality circles in their schools.

Six respondents held awareness training with their superintendents, central office administrators, and principals. They stressed that the purpose of the awareness training was to give them enough information so that they could make decisions about whether they could proceed further with quality circle investigation.

Eight respondents involved their superintendents with quality circles which at once resulted in an immediate approval of the program. Because of the involvement of the school superintendents, some colleges, individuals, public and private schools, and parents were motivated to join quality circle organizations.

One respondent said that she introduced the quality circle concept in her supervision class, which included teachers, principals and supervisors. Furthermore, she said one of the students in her class came back and reported that he had introduced it in his school system and it was doing fine.

Question 4: What are the roles of teachers? principals? supervisors? superintendents?

Responses: Eight out of the ten respondents confirmed that the role of teachers in quality circles is to become members of the circle so they could identify, analyze and solve the problems using quality circles. They further pointed out that member teachers' duties should be as alike as possible. This means that in a high school, quality circles should be formed in all the departments. They
explained further that in a large elementary school, quality circles should be formed by primary teachers, middle school teachers or junior high departmental teachers. In a very small school, consisting of eight to twelve teachers, all of them would be in one circle except the principal, whose main duty would be to give approval to quality circles and receive management recommendations.

One respondent said he learned from research on change that it does not take place at the district level. He explained that the district provides guidance, but the school principals generate leadership. He further maintained that there must be a difference in each district in what exactly the role of a principal is, depending upon the makeup of that principal and the district. He said that the principal should serve as the manager of a plant and should not be involved in the circles other than for administrative duties, supporting and giving approval to the members of the quality circles.

Two respondents stated that question four was not relevant to them because they teach in universities, not in secondary or elementary schools.

One of the respondents stressed that the superintendents, principals, and supervisors should be members of steering committees, such as the board of directors for quality circle activities.

One respondent explained that he does not have the same roles as secondary and primary teachers do. Again, he explained that they had almost fifteen quality circles and that eight of them consisted of faculty members. He pointed out that departmental heads, as organized in elementary or secondary schools, were involved as leaders or people who usually participate in management presentations with quality circles.
He added that not all of his departments have circles within them; however, there are approximately fifteen operations on the college campus. He again explained that many of his departmental heads are middle management and are aware of the situation.

Question 5: How many people are involved in each circle?

Responses: Four respondents maintained that their quality circles vary in the number of participants as they would in industry. They agreed that the number of people included in each circle varies from five to twelve. They also suggested that seven seems to be a nice size.

Two more respondents further suggested that theoretically, there should be somewhere between five and ten involved in the circles. One of them stressed that although membership is voluntary, it is rather difficult to regulate membership precisely.

One respondent pointed out that the question was not relevant to him because he had not introduced it in the university where he teaches and could not possibly predict the number to be included.

Two of the ten respondents said that they had an average of nine people in each circle and that their circles ranged in size from four to thirteen people. One of them added that the quality circle in his social studies department had twelve members and the steering committee was comprised of ten people.

One other respondent said that the number included varied from a low of three people to a high of fifteen. He maintains that if the number is more than ten, it becomes difficult for everyone to be involved.
Question 6: What do you mean by middle management in educational quality circles?

Responses: Eight respondents said that the middle management in educational quality circles should be the following: Building administrators, principals, assistant principals and departmental chairmen. They strongly recommended that the implementation sequence of quality circles should start with middle managers. They stressed that six should be the appropriate number to be included in a quality circle of this type.

One respondent reported that in his institution, middle management are supervisors or departmental heads. In terms of how many people are included, he suggested that six should be a good number.

Another respondent explained that there should be a trained external facilitator who should be regarded as middle management, and his or her work should be to guide the quality circle process in the organization.

Question 7: Who guides quality circle members throughout the process?

Responses: One of the respondents explained that the person who should guide the quality circle members throughout the process should be the person the steering committee identified as a leader. He further explained that in a small elementary district or a small county building, the circle leader may be a teacher or a master teacher who has been selected and trained for the role by the principal or the steering committee. In a department, it may be the departmental chairman. Again, he suggested that in a high school where there are three or four circles, the departmental chairpersons will be the
leaders of those circles. He stressed that since it is common to see many teachers with leadership capabilities, he strongly recommended that the position of chairperson should be rotated.

Eight of the respondents agreed that the circle leader should be a facilitator of quality circles. This facilitator has been identified by the group, in most cases through the consensus process. The group itself determines which of its members seems to be the most appropriate one to be the leader.

Another respondent explained that the question was not relevant to him because he is a university professor, not a high school teacher.

Question 8: What were the strengths of the quality circle process in your situation? (i.e., how is the process better than what you were doing before?)

Responses: Three respondents said that the training they had for quality circles was one of their strengths because they learned how to identify critical concerns that were necessary for them to be an integral part of the decision-making process.

Two of the respondents maintained that a part of their strength was that quality circles provided a structure that was clear, logical, and guaranteed to work if one followed it carefully. Another respondent declared that no one should be seriously criticized by fellow members, the school board, or the community for being involved in quality circles, because serious criticism is minimized in this kind of organization.

One person did not respond to this question because she had not introduced it in the university in which she teaches.
Two respondents said that another noticeable strength is that it has improved communication and boosted the morale of faculty members.

Two respondents identified another strength as gaining control of their environment. They said people now seem happier about their work, and they felt that they were having some impact on their daily lives at work. One of the respondents also stressed that another strength would be in the improvement of his skills. He maintained that people who were formerly not a part of problem solving were now totally involved in problem solving.

Question 9: What are some weaknesses (problems you encountered) in the quality circle process?

Responses: Four of the ten respondents said that one of the noted weaknesses in quality circles resulted when a school started quality circle programs without a real commitment on the part of the school superintendent. One of the respondents stressed that another weakness might be getting into the quality circle program and the superintendent not really involving the union in getting the program set up.

Three of them explained that there would be no systematic implementation plan when middle or top managers were threatened. No matter what language was used, since it was threatening, there could be no successful implementation.

Two respondents suggested that another weakness might be the problem of getting quality circles going. One of the respondents suggested that quality circles would get off to a better start if an awareness session were held. Since membership was voluntary, the facilitator might encourage members to keep their work in better shape.
Two more respondents stressed the weakness of starting quality circles on a shoe string; that is, without proper training. One added that to eliminate this weakness, a thorough and sound training must be provided for members of the quality circles.

Question 10: What processes do you use to evaluate your experience with quality circles?

Responses: Three respondents explained that they used data collection instruments to evaluate their quality circle processes. In this evaluation, once the problem is selected, the members collect data in order to assess the magnitude of the problem.

Two respondents said that they keep some written records. One of them explained that some people consider attendance as an indicator of this aspect of evaluation. Again, he pointed out that some also look at the issues covered and the amount of time it took to deal with issues. They watch for attitude change.

Three more respondents claimed that they used a check list for evaluation. They stressed that these check lists are very long and extensive, and they do examine every facet of their operation and come up with an eventual score which should tell how well they are doing.

Two of the respondents reported that they evaluated in the following ways:

1. By attitude and self report
2. By looking at the product of the quality circles
3. By looking at the problems they had identified and the problems that had actually been solved.
CHAPTER FIVE
Implementation of Quality Circle Concepts in the Administration of Educational Systems

The following paradigm or model for the implementation of quality circles grew out of the information presented in Chapters Two, Three, and Four of this study.

Step 1. Obtain top administrative support for the program. A real commitment to quality circles should include as a long-range attempt to enroll more brainpower and employ creativity in solving critical organizational problems.

Step 2. Establish a steering committee. The steering committee should be responsible for monitoring the installation and evaluation of the quality circle program. It should be composed of representatives from various organizational power groups.

Step 3. Appoint the quality circle facilitator. The facilitator should be the key individual who should be knowledgable and resourceful regarding the quality circle concept.

Step 4. Present the plan to management and the union. As soon as the detailed plan is developed, it is important that the plan should be discussed with the middle management and the union leaders. The discussion should be held as an information session to make them familiar with the program. The people-building philosophy should be insisted upon, and a request should be made that the information be disseminated among all the people in many industries and schools.
Step 5. Present the concept to the group. Immediately, the plan is developed and the training material is prepared by the facilitator, who should discuss the next step in selecting the area with the steering committee.

Step 6. There should be management presentation. The supervisor presentation should provide the appropriate recognition for the completed ritual of the quality circle process. The most essential part should be where the quality circle members present their recommendations and supporting data in a convincing fashion to their assigned supervisor. In a school setting, this supervisor might be a building principal, a central office administrator, or the superintendent.

Step 7. Evaluate the effectiveness of the quality circle program. The establishment of criteria for evaluating and monitoring the effectiveness of the program should be one of the responsibilities of the steering committee.

Step 8. Provide for quality circle expansion. There should be a built-in training process in the quality circle program which should make its eventual expansion to more groups natural and inevitable.

Step 9. Provide quality circle techniques for teacher evaluation. Performance appraisal methods from industry may provide private and public school principals with insight and communication techniques in the post-observation conference.

Some Important Considerations in Implementation

Organizational Personnel

Management. The role of management should be to provide sustained, positive and visible support for the quality circle process, which
should flourish wherever and whenever management is seriously and sincerely committed to people-building, productivity, and quality improvement within a participative management style. Management should be committed to a change effort, and all involved in the change must be involved in its initiation.

**Middle management.** Middle management quality circles should include supervisors and directors. This group should meet one hour each week and should follow a prescribed format.

**Members.** The members' main job should be to identify, analyze, and solve problems related to their work area. The problem areas under consideration by the members should lie within their immediate professional domain.

**Nonmembers.** Nonmembers should become active in many ways. For example, they might be solicited for inputs in the brainstorming phase; subsequently, when the list is narrowed to a few problems, they might be consulted for their opinions on the most crucial issues.

**Leader.** The leader's main responsibility should be to summon a quality circle meeting. The leader's effectiveness and the program's success should be a function of his or her capacity to inspire self-confidence in the participants, thereby increasing their motivation and their commitment to the purposes of the group.

**Specialist.** The specialist's function should be to help them define and resolve only those problems for which they have asked assistance. The specialist should not go beyond the specific request
because too much advice dampens the enthusiasm of the members and hampers the process.

**Training.** Training leaders and facilitators should be a three- to five-day course. Participants should learn leadership skills, quality circle techniques, group dynamics, and how to train members.

The training and increased opportunity for participation should reinforce the basic confidence of the administration and its belief in the efforts of the faculty. Focus must be on people-building. This focus should be regarded as one of the most important elements of the quality circle philosophy and also a characteristic of a successful program.

As the circles mature and the participants begin to feel more comfortable applying the techniques learned, they will want to expand their scope of activity and responsibility. By providing additional training, this need can be met effectively.

**Team work.** Team work should encourage growing beyond the individualistic stance to a more cooperative interdependent attitude.

**Components**

**Research.** It is recommended that the research program should begin with sound data because of its complexity in terms and human management and because of the statistical techniques used in the program.

An extensive study should be conducted on quality circles. Even though formal quality circles were introduced in Japan in 1962, very little attention was paid to them until 1966.
Brainstorming. When managed properly, brainstorming should produce the maximum number of alternative ideas on a given topic. It should increase the originality as well as the quality of ideas.

Voting. The circle voting technique to achieve consensus is an efficient procedure that should work well in any consensus-seeking situation, not just in quality circles.

Cause-and-effect analysis. Cause-and-effect analysis should provide a rational structure through which data are manipulated to determine the true cause of a particular problem.

Power. Power within the organization should aim at changing the distribution and nature of power within an organization. Quality circle processes should give faculty limited power they did not formerly have by bringing them into the decision-making process.

Administration usually controls all the resources and makes the rules. With quality circles, administration should change the rules slightly to grant teachers enough power to participate in decision-making processes on subjects that relate directly to their immediate work.

Theory Z. A series of steps for implementing Theory Z as a management scheme should be reformulated to fit the school situation. While these steps should be carried out by administrators and faculty members working together, the chief administrator is the key to success. Commitment to an overall philosophy should provide the basis for decision making throughout the organization. Theory Z should emphasize
the long-term development of the school's employees as well as its pupils.

Three major benefits which should occur when quality circles are adopted by a school district are as follows:

1. The quality of work life should improve. Circles should provide teachers and other employees a greater control over the day-to-day decisions which affect their working lives.

2. School improvement should evolve. Circles should identify problems and develop solutions which they mutually believe would benefit the school or district.

3. Staff development should become effective. The school leaders should focus on the process incorporated in the circle methodology as a means to an end. This process would help to change attitudes about staff development.

Control. The administration should have faith in its teachers. Administration should not give away decision-making authority or responsibility in a quality circle process. It should provide opportunity for the teachers to have input.

Structure. The structure of the quality circle should be the composition of the group, defined by the positions of its members in a wider organization.

The quality circle process should contain four sub-processes:

1. Identification of problems

2. Review, in an administrator's presentation, of the circle's proposed solution by involved administrators and supervisors to decide whether or not to implement it
3. Implementation of the solution by the wider organization

4. Evaluation of the success of the solution by the circle and organization.

Three crucial elements necessary to sustain the momentum should be established.

1. Encourage the maintenance of the attributes that were instrumental in making the program successful.

2. Maintain an ongoing training program for all levels of quality circle participants.

3. Structure the program for growth. There should be a sustained commitment and effort to ensure that the elements instrumental in building a strong foundation for the program continue to exist.

As the momentum continues to pick up and more people show an interest in participating in quality circles, structuring the quality circle program for growth should become an essential issue.

Competition among the various quality circles in an organization should be encouraged and perceived as measuring the management participation of one circle against another. The use of predetermined evaluation criteria could be used.

Quality circle members should believe that improvements in such areas as instruction, teaching conditions, or school climate are needed and achievable via the quality circle method.

Essential ingredients should be regarded as personal commitment and trust in the quality circle's ability to make a difference. School boards and administrators should clearly have legal responsibilities and prerogatives that could not be assigned to others. Being sensitive to the need to be as open as possible yet protecting options, the
school administrator should carefully outline negotiable and non-negotiable topics. The school board and administration could reasonably reserve for themselves topics such as personnel selection, evaluation and assignments, district-level budget matters, and items covered by union-board contractual agreements.

**Joint quality circles.** After circle members have become proficient in problem-solving, they should focus their attention on some problems they have in common with other work areas; for example, teaching and research. This would involve establishing task-force circles to enable the organization to analyze and solve intergroup or interdepartmental problems, as well as local ones.

**Conferences.** Quality circle conferences should provide and present opportunities to increase members' knowledge and meet with their counterparts from other industries or schools.

**Measurement.** Better records and documents should be kept as a means of keeping management informed and of reflecting the true worth of quality circles. Continued attention should be given to individual circles as well as the overall quality circle program after the initial implementation has taken place.

**Review.** The program should be viewed as a motivational transformative process with the power to exert important influence on a company's or school's culture and its employees. The review of the program should occur as soon as six months after its initiation.

The monthly review of progress should be regarded as an important step in the implementation process.
Educational Application

Productivity. Productivity in American high schools should be regarded as a means of accomplishing more with the limited resources available. Educators should seriously consider other ways to extend the education dollars.

Changing quality circles to quality education. Colleges, universities, and other organizations need to involve more individuals and recognize and use the individuals' intelligence to solve the problems. This effort might involve the establishment of a Japanese-type shared responsibility and commitment to improve student learning.

School administrators should look at their leadership styles and determine if the quality circle approach is the one they could adopt comfortably. They should consider hiring a competent consultant who would provide advice on planning for the establishment of quality circles.

Application. In order to allow teachers positive input in the educational administration of the 1980s:

1. Principals should involve and obtain commitment from teachers.
2. Principals should work closely with and associate with teachers.
3. A family or team spirit must be developed.
4. Employment security, in the form of a lifetime contract, should be provided.
5. Principals must trust teachers.

6. Head teachers and principals should be able to make decisions without always having to justify them.
CHAPTER SIX

Summary, Findings, Conclusions and Recommendations

Summary

Procedures

This study was conducted to determine the potential effectiveness of implementation of quality circle concept and process to administration of educational systems. A thorough examination was made of the related sub-problems (1) through a review of literature in the field, to develop and present a history of the development of the quality circle concept; (2) through interviews with representatives of educational systems where quality circles have been introduced into the administrative process, to describe some actual examples of their implementation into the administration of educational systems; (3) to develop a suggested model (paradigm) for the implementation of the quality circle concept and process to the administration of educational systems; and (4) to make recommendations regarding the use of quality circles in the administration of educational systems.

A list was developed of administrators who were reputed to be competent in quality circle concepts. Letters were written to each requesting him/her to participate in a telephone interview. Also, each one on the list was asked to respond with the date and a time when the interview could be conducted. A list of questions to which answers were desired was included in each letter. Answers to the
questions in the interview guide were carefully recorded during the telephone interview.

Primary and secondary schools were also studied to determine the success or failure of quality circles in the United States. Major emphasis was placed on the use of quality circles in educational administration.

**Literature**

A quality circle was described as a small group of people from the same work area who met voluntarily on a regular basis to identify, analyze, and solve problems of various types. In 1961, in Japan, Kaoru Ishikawa and the Union of Japanese Scientists and Engineers (JUSE) tied the theories of the behavioral scientists together with that of quality science, introduced to devastated post-war Japan by Deming, Juran and others. The result was quality circles, commonly known in Japan as quality control circles. The first circles were registered with JUSE in May of 1962. The phenomenon grew in Japan to involve millions of employees. During the 1970s, it spread to many western world nations. It was adopted in many parts of the world during the 1980s, particularly in the industrialized nations. 1

An alternative to the American bureaucratic philosophy of management came to the United States from Japan during the decade of the 1970s. The philosophy, which was the Japanese style of management, was based upon the use of creativity and talents of others, including the

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following concepts: (1) everyone has a brain and wants to use it; (2) management does not know all the problems; (3) management does not know all the answers; (4) the employee has his own way of doing things and is closer to the problems, and (5) workers can contribute their ideas for effective problem solving.  

The implementation of these ideas is through the use of quality circles. Quality circles are the medium through which workers share management responsibility for locating, analyzing, and solving problems relating to the work area. A quality circle is composed of six to ten or eight to twelve volunteers who meet with their supervisors every week. In this situation the supervisor serves as a circle leader. Initially, they receive training in techniques of problem solving, data gathering, and problem analysis.  

Successful management of an American school, like the operation of a Japanese industry, involves long-term development of personnel, trust between workers, participative decision making, and a shared philosophy. The quality circle is an exciting and challenging way to improve staff satisfaction and quality of service. Below are the steps outlined for school administrators to use in order to establish quality circles:

1. Look at the style of leadership and determine if the quality circle approach is the one that could be adopted comfortably.

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2. Learn everything possible about quality circles; i.e., quality control circle applications, tools, and theory. Then assess the situation for suitability of application.

3. Consider hiring a consultant. A competent consultant will provide advice on planning and establishing quality circles and training for all concerned in quality circle procedures (data gathering, getting priorities, problem-solving methods). Thorough preparation and training of quality circle members in data-gathering techniques and problem-solving strategies is extremely important.

4. Involve the staff in planning for quality circle activities.

5. Form the quality circle from volunteers.

6. Provide training for the members.

7. Establish a steering committee to provide guidelines for the quality circle's performance. A member of the teacher's association or union should be part of the steering committee to make certain that the quality circle stays within acceptably-negotiated agreement guidelines.

8. Establish a meeting time and place.²

Performance appraisal theories from industry may provide principals with insight and communication possibilities in the supervision of teachers, especially in the application of communication techniques in the post-observation conferences. Supervision of classroom teachers should be one of the more important management responsibilities of the principal. Within any of the chosen models, interaction generally

should occur between the principal and the teachers regarding the teachers' performances. Traditionally, the most essential interaction time should occur after the principal has observed the teacher, completed a rating scale and/or made written comments.⁵

In this way, the principal will be optimally prepared to meet the teacher in a conference that should offer productive interaction possibilities for both principal and teacher. It is at this point that the quality circle concept from industrial management theory could offer some insight into the application of communication techniques.⁶

Colleges, universities, or organizations that have established circles enjoy these benefits:

1. Team work atmosphere
2. Job satisfactions
3. Improved communication among workers⁷

Field-Research

Five respondents first heard of quality circles through reading, and one discovered it while watching network television programs.

Six respondents reported that they had been personally involved in the implementation of quality circles through the development of a training model which they offered to teachers and administrators as an approach to human resource development.


⁶ Sadler, p. 2.

Of the ten respondents to telephone interviews, one had discovered the concept of quality circles through his employment in industry. He first heard of it through a visit to his plant by a group of Japanese engineers. He pursued the matter by attending a seminar at Stanford University and visited Japan to study the concept further.

Five respondents received training through one-week workshops, seminars or institutes in Red Bluff, California; Elmhurst, Illinois; and Chicago, Illinois. One attended a seven-hour seminar in Knoxville, Tennessee.

Two respondents spent a year talking about the quality circle methodology from an institute which used slides that provided an in-depth analysis of the movement of the quality circles. The school superintendents and board members were asked for recommendations. They found (1) that the methodology used, as well as the slides for teachers and administrators, was not useful. It was not a good institutional model; rather, it was better with industry; and (2) that the cost of training was exorbitant for the school systems. They added that these problems were the stumbling blocks for the introduction of quality circles in their schools.

Six respondents held awareness training sessions with their superintendents, central office administrators, and principals. They stressed that the purpose of the awareness training was to give them enough information so that they could proceed further with quality circle investigation.

Eight respondents involved their superintendents with quality circles, which at once resulted in an immediate approval of the program.
Because of the involvement of the school superintendents, some colleges, individuals, public and private schools, and parents were motivated to join quality circle organizations.

One of the respondents stressed that the superintendents, principals, and supervisors should be members of steering committees such as the board of directors for quality circle activities.

In response to the question, "Who guides quality circle members throughout the process?", the following summation of responses is made.

One of the respondents explained that the person who should guide the quality circle members throughout the process should be the person the steering committee identified as a leader. He further explained that in a small elementary district or a small county building, the circle leader may be a teacher or a master teacher who has been selected and trained for the role by the principal or the steering committee. In a department, it may be the departmental chairman. Again, he suggested that in a high school where there are three or four circles, the departmental chairpersons will be the leaders of those circles. He stressed that since it is common to see many teachers with leadership capabilities, he strongly recommended that the position of chairperson should be rotated.

Eight of the respondents agreed that the circle leader should be a facilitator of quality circles. This facilitator has been identified by the group, in most cases through the consensus process. The group itself determines which of its members seems to be the most appropriate one to be the leader. Another respondent explained that the question was not relevant to him because he is a university professor, not a high school teacher.
In regard to the weaknesses or problems encountered in the quality circle process, the following is a summation of the responses:

Four of the ten respondents said that one of the noted weaknesses in quality circles resulted when a school started quality circle programs without a real commitment on the part of the school superintendent. One of the respondents stressed that another weakness might be getting into the quality circle program and finding that the superintendent was not really involving the union in getting the program set up.

Three of them explained that there would be no systematic implementation plan when middle or top managers were threatened. No matter what language was used, since it was threatening, there could be no successful implementation.

Two respondents suggested that another weakness might be the problem of getting quality circles going. One of the respondents suggested that quality circles would get off to a better start if an awareness session were held. Since membership was voluntary, the facilitator might encourage members to keep their work in better shape.

Two more respondents stressed the weakness of starting quality circles on a shoestring; that is, without proper training. One added that to eliminate this weakness, a thorough and sound training must be provided for members of the quality circles.

Findings

1. In spite of modern technology, America, as well as other industrial nations in the 1980s, experienced serious economic problems because of decreased productivity and keen competition.
2. It was observed that in the 1960s, the United States accounted for more than one-fourth of the manufacturing exports of industrial nations, while supplying 98 percent of its domestic market.

3. For thirty years, the United States had one of the poorest growth rates of any industrial nation.

4. An alternative to the American bureaucratic philosophy of management came to the United States from Japan during the decade of the 1970s.

5. In 1979, Cole stressed some important reasons for the interest in development of quality circles in high technology companies.

6. In September 1982, Harvey Davis, an assistant executive director of the International Association of Quality Circles (IAQC), estimated that there were over 3,500 firms, both large and small, in the United States with active quality circles. These circles were especially prominent at Westinghouse, Ford Motor Company, General Motors, Honeywell, Martin-Martietta, the United States Air Force, and the United States Navy.

7. Hughes Aircraft Company was among the first organizations to become involved in the quality circle movement in the United States.

8. Lane Community College in Oregon was the first educational institution in the country to establish a campus productivity center.

9. By borrowing a people-building tool from industry to promote student development, Middlesex County College, New Jersey, found a way to demonstrate to faculty the quality circles could prevent staff tugs-of-war for scarce resources and improve institutional excellence.
10. Japanese management approaches that merit reviews are summarized below in the form of educational guidelines:
   a. Principals must involve and obtain commitment from teachers.
   b. Principals must work closely with and associate with teachers.
   c. A family or team spirit must be developed.
   d. Employment security in the form of a lifetime contract should be provided.
   e. Principals must trust teachers.

Conclusions

Based on the findings of the study, the following conclusions were drawn.

1. Quality circles in school administration came from a movement taking place in American industry that had shown evidence of contributing to a turn-around in productivity of the American worker.

2. Schools and businesses in the United States show some similarities when the structure of the two sets of organizations is analyzed.

3. One major goal of the use of quality circles is to improve productivity by collectively seeking better ways to increase efficiency and improve product quality.

4. Another major goal of the use of quality circles is to improve communication (especially upward). Through this improved communication is built mutual trust, respect, and caring among workers and managers at all levels.

5. Improving productivity in American high schools is a means for accomplishing more while using the same amount of resources. The concept has a central issue in the private sector but is only beginning to be prominent in the thinking of American educators.
6. With a significant reduction in the resources available to help improve schools, educators are compelled to think about other ways to extend the education dollar.

7. Performance appraisal theories from industry may provide principals with insight and communication possibilities in the supervision of teachers, especially in the application of communication techniques in the post-observation conference.

8. Japanese management strives to develop a close working relationship with employees.

9. The goals of quality work programs are to involve employees in improving work and work life, to remove some controls, and to give them information and problem-solving skills.

10. Participatory techniques grew out of thirty years of investigation into how to design work and improve organization.

11. The key to real administration is mutual understanding between teachers and administration.

12. An efficient manager should know that the complex and changing relationships between people cannot be defined in print or fully regulated by rules and regulations.

Recommendations

Based on the findings of the study, the following recommendations are made.

1. Quality circles should be viewed as an exciting and challenging way to improve staff satisfaction and quality of service.

2. A quality circle effort should be initiated only upon the decision of educational administrators.
3. Circle leaders should go through training in leadership skills, adult learning techniques, motivation and communication techniques.

4. American educators should advocate reorganizing departmental and divisional arrangements to allow for semi-autonomous work groups.

5. Extensive research should be conducted on quality circles, especially quality circles in educational administration and education as a whole.

6. It is further recommended that the need for research programs should begin with good data because of the programs' complexity in terms of human management and because of the statistical techniques used in the programs.
BIBLIOGRAPHY
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ADMINISTRATORS

Mr. Del Anderson  
State Technical Institute  
Plainwell, MI 49080

Mr. Bill Babington  
Crystal Lake District #47  
Crystal Lake, IL 60014

Ms. Beth Bandy  
Illinois State Board of Education  
Springfield, IL 62706

Ms. Jeanne Beck  
Wheeling District #21  
Wheeling, IL 60090

Mr. James Bellanca  
Director of Illinois  
Renewal Institute  
500 S. Dwyer  
Arlington Heights, IL 60005

Ms. Ethel Bright  
University of Kentucky  
Lexington, KY 40506

Ms. Elizabeth Coleman  
Grant Joint District  
Sacramento, CA 95813

Mr. Tom Collins  
Brighton Central District #1  
Rochester, NY 14610

Mr. Robert Gentry  
Berwyn District #100  
Berwyn, IL 60402

Dr. J. Merrell Hansen  
Dixon Junior High School  
750 West 200 North  
Provo, UT 84601

Ms. Joann Hospod and  
Ms. Lorraine Waldo  
Windsor Board of Education  
Windsor, CT 06095

Ms. Patricia E. Howlett, Editor  
Association of California School Administrators  
1517 L Street  
Sacramento, CA 95814

Ms. Joanne Hutton  
Director of Purchasing  
California State University at Long Beach  
Long Beach, CA 90840

Dr. Arthur E. Jones  
Superintendent of Schools  
Forest Park Public Schools  
939 Beloit Avenue  
Forest Park, IL 60130

Ms. Debra Merill  
Utah State Board of Education  
Salt Lake City, UT 84114

Dr. H. Lynn Moretz, Director  
Central Piedmont Community College  
P. O. Box 35009  
Charlotte, NC 28235

Mr. Steve Passarell  
Grant High School  
1333 Grand Avenue  
Sacramento, CA 95838

Mr. Ed Poole  
Naperville District #203  
Naperville, IL 60540

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Mr. Larry Romine  
Director of College/  
Community Relations  
Lane College  
Eugene, OR  97405

SMERC Information Center  
San Mateo County Office of  
Education  
333 Main Street  
Redwood City, CA  94063

Mr. James Sork  
Vancouver School District #37  
605 N. Devine Rd.  
Vancouver, WA  98661

Superintendent  
Muskegan Public Schools  
Muskegan, MI  49440
INTERVIEW GUIDE

1. Specifically, how did you develop an interest in quality circles?

2. Did you have any formal training in the concept and practice of Quality Circles? If so, where and with whom?

3. How did you introduce the quality circles to your school system?

4. What are the roles of teachers? principals? supervisors? superintendents?

5. How many people are involved in each circle?

6. What do you mean by middle-management in educational quality circles? How many people are included?

7. Who guides quality circle members throughout the process?

8. What were the strengths of the quality circle process in your situation? (i.e., how is the process better than what you were doing before?)

9. What are some of the weaknesses (problems you encountered) in the quality circle process?

10. What processes do you use to evaluate your experience with quality circles?
October 19, 1983

Dear [Name],

I am a doctoral student at East Tennessee State University, Johnson City, Tennessee. I am writing a dissertation on Quality Circles in Education under the direction of Dr. William Everdon, a professor of Education at East Tennessee State University.

It will be appreciated if you will participate in a telephone interview which will be conducted very soon for this research. I will be delighted if you respond with a date and time for the interview.

The attached is a copy of the interview guide.

Very sincerely yours,

/s/William L. Everdon, Ed.D.  /s/Anthony O. Anyanwu (Mr.)
Research Director  Researcher
ETSU Box 21224
Johnson City, TN 37614

College of Education
Anthony O. Anyaoha
Researcher
East Tennessee State University
Department of Supervision and Administration
Box 21224
Johnson City, TN 37614-0002

Dear Mr. Anyaoha:

Your letter to Larry Romine requesting a telephone interview to gather research information for your dissertation on quality circles has been directed to me as Acting Director of the Productivity Center and coordinator of Lane Community College's Quality Circle Program.

I have enclosed some information that I feel will answer many of your questions; however, I will be available for a short interview by telephone at 9:00 a.m. PST, on October 28, 1993. The telephone number is listed above.

I will look forward to hearing from you on the 28th.

Sincerely yours,

Julie Aspinwall-Lamberts
Acting Director

Enclosures

cc: Larry Romine
   William L. Evernden

Lane Community College is an Equal Opportunity/Affirmative Action/Section 504/Title IX Institution.
November 2, 1983

Mr. Anthony O. Anyaocha
Researcher
ETSU Box 21224
Johnson City, Tennessee 37614

Dear Mr. Anyaocha:

In response to your letter, I will be happy to participate in the telephone interview on Quality Circles in Education and can be available for your call on November 17th at 3:00 p.m., telephone (217)782-3309.

I will be looking forward to your call.

Sincerely,

Beth R. Bandy
Director
Special Projects
October 13, 1983

Mr. Anthony O. Anyaacho
Researcher
East Tennessee State University
Box 21226
Johnson City, Tennessee 37614-0002

Dear Mr. Anyaacho:

Thanks for the invite. I'm most pleased to see that you are conducting Quality Circles research in school. I am not in a school. I train educators to use Circles.

If you want my interview, I can be contacted October 27, 9:15 - 3:00 p.m. at 312-K70-4170. At this moment, that time is available.

Regarding your survey, I note you do not ask about a steering group, steering policy, or how Circles differ from what done before.

Good luck. I'd love to hear your results.

Sincerely,

Jim Bellanca, Director
Illinois Renewal Institute, Inc.
October 27, 1983

Mr. Anthony O. Amorecha
Researcher
ETSII Box 21224
Johnson City, TN 37614

Dear Mr. Amorecha,

If you would like to have a telephone conversation about Quality Circles,
I will make myself available on Friday, November 4, between 9:30 - 10:15 AM.
My telephone number is (716) 442-1500 ext. 231.

Yours truly,

Thomas Collins
Assistant Principal
October 19, 1983

Anthony O. Anyaocha, Researcher - Campus Box 21224
East Tennessee State University
College of Education
Department of Supervision and Administration
Box 19000A
Johnson City, Tennessee 37614-0002

Dear Anthony,

This is in reply to your letter dated October 7, 1983. I regret the delay, but was in Australia at the time your letter arrived.

Yes, I would be quite willing to participate in a telephone interview to help you in your research for your dissertation on Quality Circles in Education. I will be available on Wednesday, November 2 at 10 a.m. California time. If that date is not suitable, please write or call my office and my secretary will arrange another.

Sincerely,

Donald L. Dewar
President

DLD:th
Mr. Anthony O. Anyaoha
ETSU Box 21224
Johnson City, TN 37614

Dear Mr. Anyaoha:

I have received your letter requesting my participation in a telephone
interview regarding the Quality Circle process. I do believe that
this is a management tool which we must carefully review and evaluate,
and I would be quite willing to participate in your study.

In considering my schedule, I have determined that the most appropriate
date and time for our discussion to occur would be Tuesday, November 15
at 10:30 a.m. CST. I will anticipate your call as scheduled unless
notified otherwise. I wish you success with this endeavor.

Sincerely,

[Signature]

Arthur E. Jones, Ed.D.
Superintendent of Schools

AEJ/pg
Mr. Anthony O. Anyaocha  
Researcher  
ETSU Box 21224  
Johnson City, TN 37614

Dear Mr. Anyaocha:

I am in receipt of your letter of October 19, 1983, along with the interview guide related to Quality Circles. I will be happy to participate in the telephone interview. I would suggest 9:00 a.m., November 17, for the interview.

Please let me know if this is a conflict.

Sincerely,

Edward Poole  
Principal

EP: bv
APPENDIX B

HISTORY OF QUALITY PROGRESS IN JAPAN
HISTORY OF QUALITY PROGRESS IN JAPAN

Pre 1940  Japan known worldwide for poor quality

1946-1950  Government declared better quality a national priority
    Dr. W. E. Deming gave lecture series on statistical control
    of quality for Union of Japanese Scientists and Engineers
    (JUSE)
    JUSE offers six-month course to industry
    Government permits "JIS" symbol for high quality products
    Japanese standards association organized to promote Q.C.

1951  Deming awards established by JUSE

1953  Minister of International Trade and Industry (MITI) Awards

1954  Dr. Juran's Lectures of total Quality Circles
    Quality is responsibility of all from top management to
    workers

1956  Weekly radio series on quality--repeated annually

1960  Government declares November of each year as "National
    Quality Month"
    Abundance of "Q" flags, seminars, posters, and so forth
    Weekly television series on quality

1962  Japan "invents" Quality Circles
    Magazine "Q.C. for Foreman"

1963  Top management annual quality audits gain popularity

1973  Fantastic growth in Quality Circles--½ million circles
    6 million members
    Japanese image for high quality is achieved

1974  Annual Quality Circle meetings on international basis
    Top twenty Quality Circle leaders sent around the world
    in recognition of their contribution

1980  Goal is to become undisputed world leader in quality

MESSAGE:  The effort to improve quality begins long before the
    reputation for quality is achieved

One of the key factors that helped Japan in this revolution was Quality
Circles! Quality Circles are not only helping Japan to improve quality
constantly, but are also saving billions of dollars in all types of
industries.

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VITA

ANTHONY OMERI HU ANYAOCHA

Personal Data:
Place of Birth: Umuacha/Mkpuka, Owerri, Nigeria
Marital Status: Married

Education:
St. Michael's School, Umuacha and SS Peter and Paul, Mbutu-Ngwa.

Professional Experience:
Teacher, St. Benedict's Catholic School, Ahiaba Ubi.
Teacher, St. John's Catholic School, Umuakpila, Omuma.
Teacher, St. Paul's School, Umuala-Nsulu.
Teacher, St. Mary's School, Umuoko, Ngwa.
Teacher, Ubakala Central School, Umuachia.
Teacher, Ahiaba Okpuala, Community School.
Teacher, All Saint's School, Abayi-Umuocham.
Teacher, St. Clement's School, Umuojima-Ogbu.
Teacher, Agburukike Community School, Nsulu.
Teacher, Umumba Community School, Omuma.
Teacher, Umuacha Community School, Owerri.
Assistantship, Department of Biochemistry, 1977-1978.
Doctoral Fellowship, Department of Supervision and Administration, East Tennessee State University, Johnson City, Tennessee, 1979-1984.

Honors and Awards:
Selected as Who's Who in American Education.