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A Study of the Implementation of Total Quality Management Principles into Training in Virginia Beach Industry

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A STUDY OF THE IMPLEMENTATION OF TOTAL QUALITY MANAGEMENT PRINCIPLES INTO TRAINING IN VIRGINIA BEACH INDUSTRY

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APPROVAL PAGE

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INTRODUCTION

In 1986, Demming stated that,"The biggest problems are self inflicted, created right at home by management that are off the course in the competitive world of today" (Walton, 1986, p. 2). This statement not only applies to the management and line functions of an organization but also includes the training arena. Often the HRD function within an organization is responsible for the implementation and training for process improvement.

The implementation of the process improvement principles into the industrial training environment is of critical importance to the organization's continued success. The impact of high levels of technology into the training field (i.e., computer based training, video tele-training, and computer based curriculum development devices) creates a need for training organizations to adapt quickly to change. The training function must set the example for process improvements or the organization will perceive the process improvement as only a passing fad.

STATEMENT FOR THE PROBLEM

The problem of this study was to determine the degree that Total Quality Management principles were being employed

in industry in the Virginia Beach area.

RESEARCH GOALS

The following goals were used to direct this study:

1. Determine which aspects of Total Quality Management principles were being used in industry education in Virginia Beach.
2. Determine if training departments using some form of continuous process improvement were showing increased benefits to the organization.
3. Determinations if there was a need for more specialized methods of process improvement that could be used in smaller organizations where it would not be beneficial to implement the entire TQM process.
4. Determine who was managing the implementation of process improvement principles in the industrial training.

BACKGROUND AND SPECIFICATIONS

Although TQM has been utilized in industry for more than twenty years, many methods of process improvement have not infiltrated into the training area. As a tool, TQM has been taught by the training function but rarely implemented

internally to itself. Ever since Demming revolutionized the modern methods of management, almost every facet of the huge American industrial complex has been touched by the TQM process.

Exactly how well these processes have been implemented into existing industrial training has not been determined although current publications seem to advocate the position that TQM is in vogue and dominating the management scene. Determining the effects of TQM for training is essential for showing how process improvement is needed for keeping industry improving.

LIMITATIONS

The following limitations were utilized in this research study:

1. The study was performed by interviewing senior training department officials within 20 companies which conduct internal training.
2. The study was limited to Virginia Beach companies that have training departments.
3. The study was limited to companies that manufacture goods.

ASSUMPTIONS

When conducting research, certain circumstances must be assumed. The following assumptions were made in this research paper:

1. Total implementation of TQM is not occurring in industry in Virginia Beach.
2. Some of the companies interviewed may not be aware that they are utilizing TQM principles.
3. Some training departments may be only using outsourcing.
4. Training will benefit the organizations by improving productivity both internally and external.

PROCEDURES

This research was designed to determine how many manufacturing companies in the Virginia Beach area were using Total Quality Management principles in their training departments, either in its complete form or in part, and to what extent the use of those principles was helping their organizations. To obtain that information a survey was designed and utilized during the interview process.

The survey consisted of a series of open ended questions that required the interviewees to define how TQM was implemented into their organizations. The survey also asked the reasons why TQM was or was not implemented into the organization and how well the process was working. The results of the survey were then tabulated and analyzed to determine the level of implementation of TQM into the Virginia Beach industrial sector.

DEFINITIONS OF TERMS

The following is a list of terms that are defined to provide a clearer understanding of the research project.

Quality Control - A system for maintaining a desired level of quality in a process of planning, continued improvement and corrective action.

Variations - A different form of any one thing.

Total Quality Management - A process developed to provide a method of continuous process improvement in a variety of settings.

Organization - A number of persons or groups having specific responsibilities and united for a particular purpose.

Internal Customers - People who receive or service from within their organization.

External Customers - People who receive products or services from outside their organization.

OVERVIEW OF THE CHAPTERS

The determination of whether TQM is implemented into industrial training in Virginia Beach will answer the question is TQL being implemented in the training functions of Virginia Beach industry. The following chapter will review the literature on this topic by other researchers and writers in the field. Chapter III will present the methods and procedures used in this research. In Chapter IV, the survey findings are reported, analyzed, and presented. Finally, in Chapter V, the findings are summarized and conclusions from those findings are drawn.

CHAPTER II

REVIEW OF LITERATURE

Dr. William Edward Demming, an American statistician, taught Japanese management and engineers quality as a system during the 1950's and 1960's. The principles that Demming pioneered during World War II in American wartime industry were not accepted by American business in the years following the Great War. The principle reason for this nonacceptance was because American business valued quantity over quality and because there was no foreign competition to challenge the country's economic supremacy (Walton, 1990, p. 12).

Over the years after World War II, Demming developed his statistical processes into a full-blown guide to management and found a ready audience in the Japanese. The basis of the Total Quality Management concepts was cooperation, which was already a way of life in Japan (Walton, 1990, p. 12). The element of cooperation in the quality improvement process is critical for success because it means that each employee's job has relevance and is critical to quality improvement.

Americans are accustomed to seeing work projects done in a linear fashion, with a beginning and an end. When the

job is done, onto the next. Continuous or never-ending improvement instead requires a circular approach that continually measures the end result or product for acceptable standards so that the process itself can be adjusted or corrected to maximize performance and reliability (Walton, 1990, p. 21). When measuring quality, standards are often used to judge service as acceptable or unacceptable, good or bad, right or wrong. Quality in the service sector and particularly in the training arena, has much in common with the quality in manufacturing. Both services and products should be free of defects (Lefevre, 1989, p 61).

The training departments in most organizations are normally responsible for teaching the various methods of quality improvement to the rest of the organization. Often those training functions are the last to implement quality improvement internally as they do not view themselves as their own customers. There has to be a compelling reason for improvement in the training area before change can take place and the reasons can be many and varied and in general focused on the negative aspects such as loss of jobs and other benefits (Boyett and Conn, 1988, p 24).

In this chapter, the Total Quality Management processes

that can be used in training are defined and the need for continuous quality improvement as it relates to training will be discussed.

TOTAL QUALITY MANAGEMENT PROCESSES USED IN TRAINING

The Demming method of Total Quality Management is described in a summary called the 14 points and graphically displayed in a graph called the PDCA (Plan, Do, Check, Act) Cycle (See Table 1).

PDCA CYCLE

Plan > Do > Check > Act > Plan > Do > Check > Act

(Note that this is a continuous self-repeating process)

Table 1

Demming devised the 14 points for ease and clarity in understanding the complete process. In his own words, they, "apply anywhere, to small organizations as well as to large ones, to the service industry as well as manufacturing" (Schmoker and Wilson, 1993, p 11). Table 2 lists Demming's 14 points for total quality management.

DEMMING'S 14 POINTS

1. Consistency of purpose toward improvement of product and service.
2. Adopt the new philosophy.
3. Cease dependence on mass inspection.
4. End the practice of awarding business on the basis of price tag alone.
5. Improve constantly and forever the system of production and service.
6. Institute training.
7. Institute leadership.
8. Drive out fear.
9. Break down barriers between staff areas.
10. Eliminate slogans, exhortations, and targets for the workforce.
11. Eliminate numerical quotas or targets for the workforce.
12. Remove barriers to pride of workmanship.
13. Encourage education and self-improvement for everyone.
14. Put everyone in the company to work to accomplish the transformation. The transformation is

everybody's.

(Walton, 1990, p 22).

Table 2

To be of use, Demming's 14 points must be redefined for their specific applications in education. These definations follow:

1. **Consistency of purpose toward improvement of product and service.**
   a. The primary, although not exclusive, purpose for educators should be academic achievement, a commitment to quality of education that we provide to our students.
2. **Adopt the new philosophy.**
   a. A new relationship between management and employees, one in which all decisions and improvement efforts are based on expertise rather than on authority.
3. **Cease dependence on mass inspection.**
   a. Manage the employees in such a way that they are encouraged to monitor and inspect their own work,

4. **End the practice of awarding business on the basis of price tag alone.**

    a. Point number 4 has no direct relationship to the training environment.

5. **Improve constantly and forever the system of production and service.**

    a. From an educator's standpoint, constant improvement means the elimination of waste, which includes time spent on unfocused, unproductive activities and on less-effective teaching strategies. In training, that which adds value includes whatever accelerates, engages, or more efficiently promotes learning.

6. **Institute training.**

    a. Train the trainers to maximize efficiency.

7. **Institute leadership.**

    a. Discover ways that enable employees in finding joy in doing quality work.

8. **Drive out fear.**

    a. Management must relentlessly fight anything that inhibits risk-taking, collaboration and improvement.

9. **Break down barriers between staff areas.**

a. Staff areas, that is academic departments and divisions, compete with each other or often have conflicting goals. The concept of teaming and cross-training is one that can promote organizational efficiency.

10. **Eliminate slogans, exhortations, and targets for the workforce.**

a. The elimination of targets such as training goals can create an artificial fear and a real tendency for manipulation of the system, to strive for quality instead of quality.

11. **Eliminate numerical quotas or targets for the workforce.**

a. Training goals must be closely monitored to ensure that they are motivators and not restrictions. The best purpose for the goals is as a test of various learning models and their effectiveness.

12. **Remove barriers to pride of workmanship.**

a. Anything that disrupts the pride that people take in their work (the most vital but tangible element of quality and improvement) must be eliminated.

13. **Encourage education and self-improvement for**

everyone.

a. Ongoing training is essential for professional growth and personal full.

14. Put everyone in the company to work to accomplish the transformation. The transformation is everybody's.

a. The emphasis on teamwork, consensus building and using everyone's expertise is essential to transforming attitudes to one of quality improvement (Schmoker and Wilson, 1993, p. 11-17).

The utilization of all of the 14 points within a training organization is the goal of the entire TQM management process. But even with the 14 points, a crucial part of the process is the implementation of the PDCA Cycle. The Plan-Do-Check-Act Cycle has basically four stages: A company plans a change, does it, checks the results, and depending on the results, acts to either standardize the change or to begin the cycle of improvement again with new information (Walton, 1990, p. 22).

The PDCA Cycle represents work on processes rather than specific tasks or problems and when used in conjunction with the 14 points creates a quality transformation within a training structure.

The two processes used together form a quality focused

environment based on a different set of values than that of traditional American managers, who pride themselves on hunches and intuition. When they succeed, they take credit, however when they fail, a scapegoat is soon found. The assumptions that Demming espoused are:

1. Decisions must be based on facts.
2. The people who know the work best are the ones who perform it.
3. Groups of people working in teams can have more success than individuals working alone.
4. Teams need to be trained in structured problem-solving processes, which included knowledge of how to conduct a meeting.
5. It is helpful to display information graphically.

(Schmoker and Wilson, 1993, p 139)

VIRGINIA BEACH INDUSTRY TRAINING

The Virginia Beach industries are a most diverse group whose products range from heavy industry to products such as computer software and military contracting. Although no source specifies exactly what industries are present in Virginia Beach, The Chamber of Commerce states that there

are over 10,000 businesses in a constant state of flux, employing 50,000 to 75,000 personnel depending on the season.

SUMMARY

"Even as we speak, a wide variety of local organizations are in the process of downsizing, right sizing, reorganizing, and implementing change," states Dan Kirsch, the executive vice-president of the Southeastern Virginia Chapter of the American Society for Training and Development (Kirsch, 1995, p. 2). The TQM processes in Virginia Beach industry are becoming more predominate as organizations begin to focus on cost savings and stringent quality control measures.

Within this research study, statistics were gathered to determine what TQM processes are being implemented into training in Virginia Beach industry. The following chapter will cover how the methods were used to gather the data for this research project.

CHAPTER III

METHODS AND PROCEDURES

Chapter III will define the population surveyed, the instrument and the procedures used for collecting data, and the statistical processes used. Chapter III will further clarify for the reader, exactly how the research was planned for this study.

POPULATION

The population studied consisted of 30 manufacturing companies selected at random by using a pseudo-number generator and a Virginia Beach Business to Business telephone directory.

INSTRUMENT DESIGN

The questionnaire was designed using the book "How to Make Achievement Tests and Assessments", by Norman E. Gronlund. According to Gronlund, there are four objectives that must be met to measure accurately the implementation of a process. They are as follows:

1. The measures and standards are clearly defined.
2. The nature and function of the items are congruent with the outcomes to be measured.

3. The measuring tool provides information that is meaningful, dependable and relevant.
4. The items were designed for the ease of the interviewer.

The interview included questions to determine exactly how Total Quality Management is implemented into each organization. Questions were also designed to determine the effectiveness of the TQM process where it is being implemented. The interview also asked for recommendations for means in which process improvement could be used where the entire TQM process could not be implemented. A copy of the interview survey is included in Appendix A.

METHODS OF DATA COLLECTION

The purpose of this study was to determine the implementation of TQM principles into Virginia Beach industry. A cover letter (Appendix B), explaining the need for the interview, along with a copy of the interview questions was sent to the selected companies on May 25, 1996, with a request for scheduling an interview no later than May 31, 1996. On May 31, 1996, a follow-up letter (Appendix C) along with another copy of the interview questions was sent to those companies that had not

responded. The responses were separated into the two following groups:

1. Companies that use TQM principles in all aspects training and were available for interviewing.
2. Companies that use some TQM Principles in training but did not wish to be interviewed.

STATISTICAL ANALYSIS

Under each classification listed in the Data Collection section above, the interview results were tabulated. Numbers and percentages have been calculated for each classification.

SUMMARY

Upon completion of the interview responses, a determination as to the implementation of TQM principles into Virginia Beach industry will be made. With this interview data, it will be determined if TQM principles are of benefit for industry in Virginia Beach and if further implementation of TQM principles is needed in Virginia Beach industry.

CHAPTER IV

FINDINGS

The purpose of this chapter is to report the findings of the research study. The purpose of this study was to determine the degree that Total Quality Management principles were being employed in industry in the Virginia Beach Area.

The interview form (Appendix A) consisted of a series of questions concerning the utilization of Total Quality Management principles into each individual organization. A cover letter was sent to each company queried (Appendix B) and a follow-up letter (Appendix C) was sent encouraging others to participate.

The research instrument used focused on four goals:

1. Determine which aspects of Total Quality Management principles were being used in industry education in Virginia Beach.
2. Determine if training departments using some form of continuous process improvement were showing increased benefits to the organization.
3. Determine if there was a need for more specialized methods of process improvement that could be used in smaller organizations where it would not be beneficial

to implement the entire TQM process.

4. Determine who was managing the implementation of process improvement principles in the industrial training.

The request for interview was sent to 30 companies in the Virginia Beach area of which 20 responded positively (66.6 %).

ASPECTS OF TOTAL QUALITY MANAGEMENT PRINCIPLES BEING USED IN INDUSTRIAL EDUCATION IN VIRGINIA BEACH

The data was calculated by taking the total number of companies utilizing TQM principles and dividing it by the number of interviews that were conducted.

COMPANIES USING TQM MANAGEMENT PRINCIPLES IN INDUSTRIAL EDUCATION 19

95 %

PERCENTAGES OF IMPLEMENTATION OF TQM PRINCIPLES INTO VIRGINIA BEACH INDUSTRY

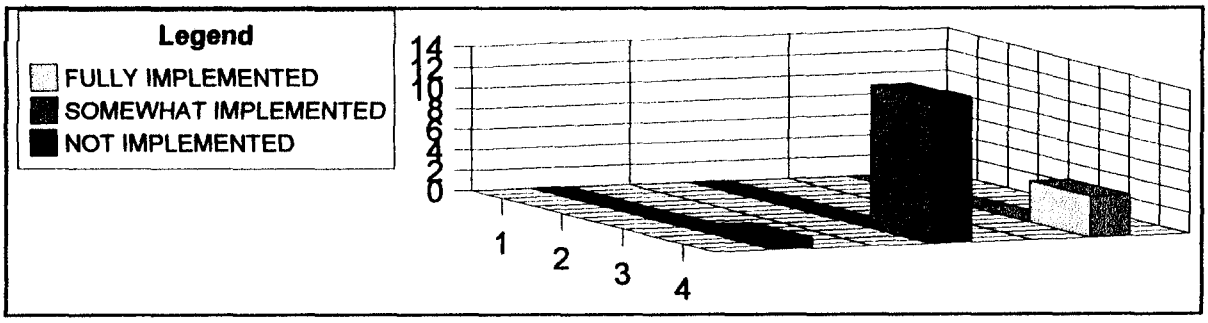

FIGURE 1

BREAKDOWN OF TQM PRINCIPLES IMPLEMENTED INTO VIRGINIA BEACH INDUSTRIAL EDUCATION

The following statistics were compiled from questions 1-9 on the interview form. The data was calculated using the total number of entries divided into the categories listed as fully implemented, somewhat implemented and not implemented. Figure 2-14 describe the consolidated data.

MISSION STATEMENT IS IN PLACE TO FOCUS GOALS OF THE ORGANIZATION

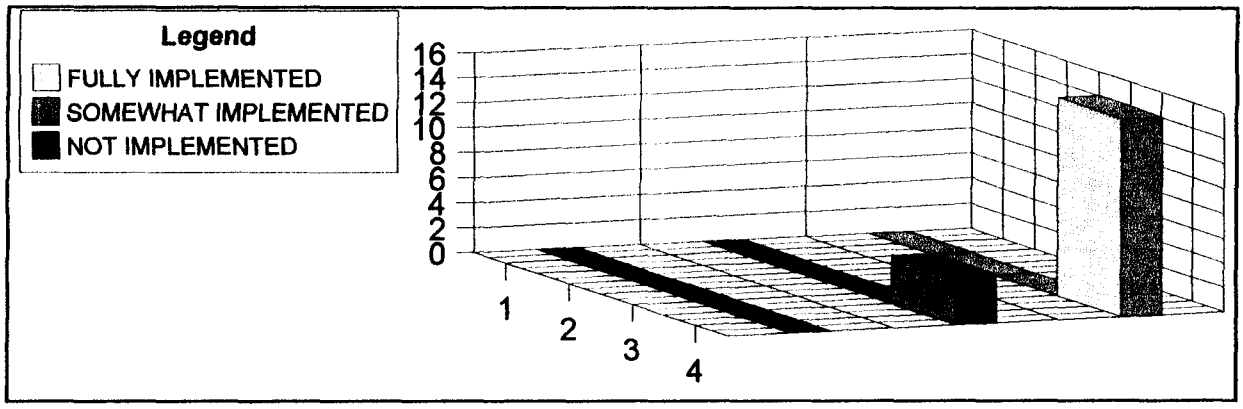

FIGURE 2

MASS INSPECTIONS ARE NOT IMPLEMENTED OR ENDORSED

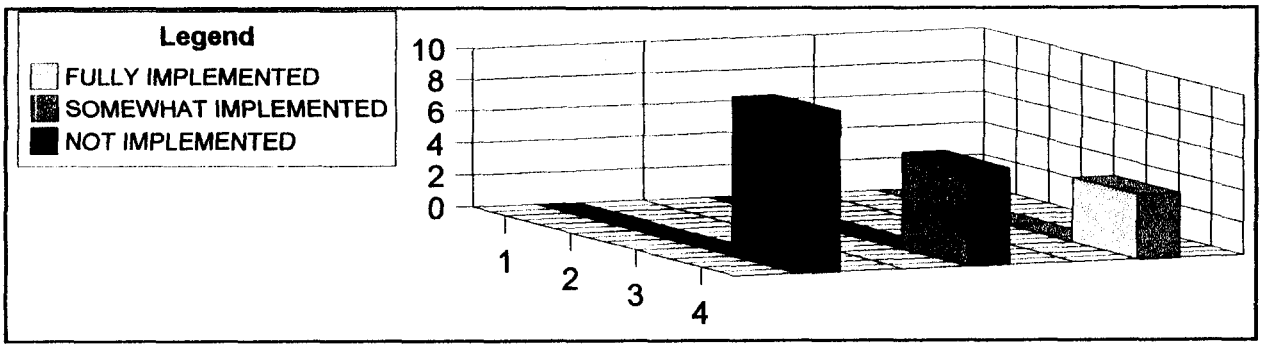

FIGURE 3

PROCEDURES IN PLACE TO PROVIDE FOR CONTINUOUS PROCESS REVIEW AND INSPECTION

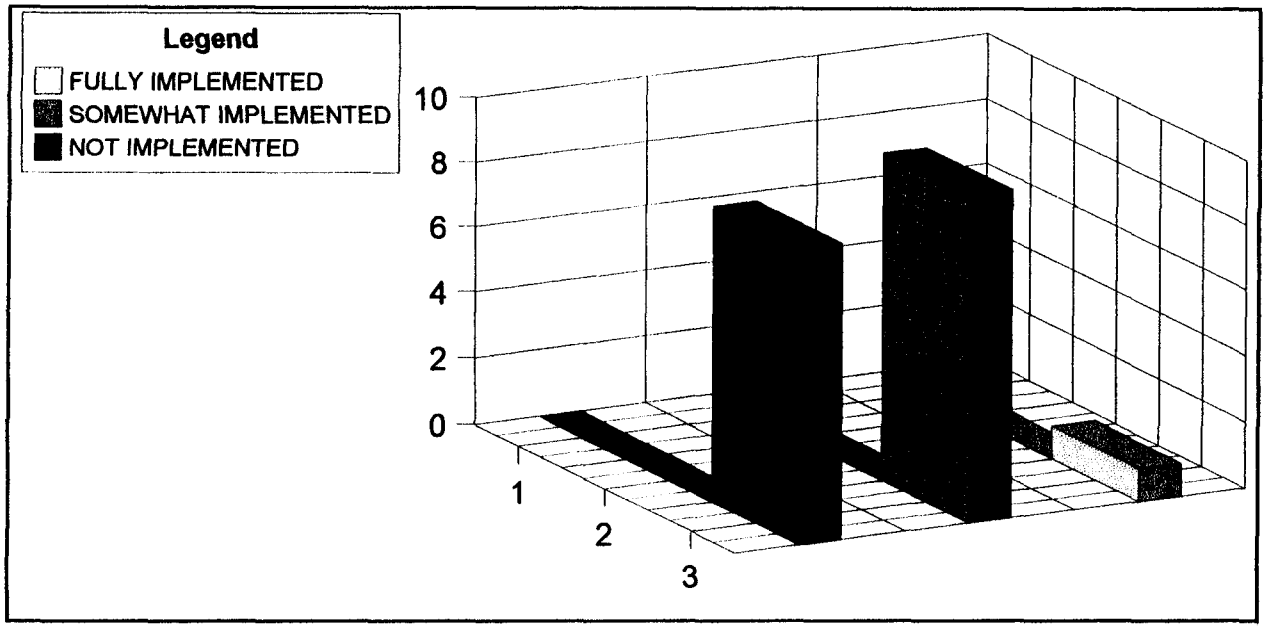

FIGURE 4

CONTINUAL EDUCATION AND SELF-IMPROVEMENT FOR EVERYONE ON THE JOB

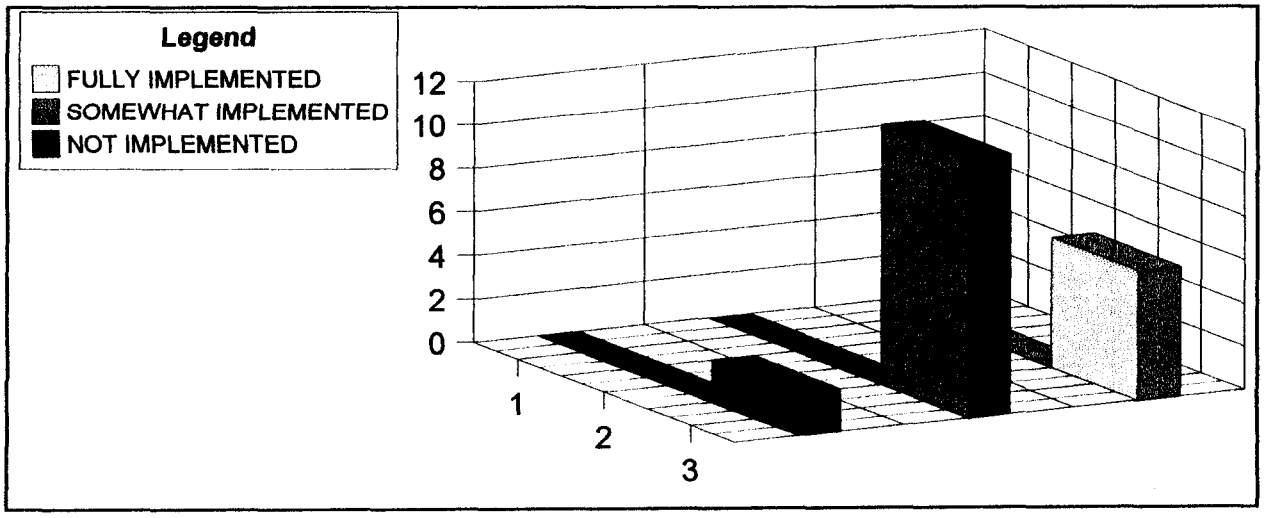

FIGURE 5

TEAMWORK IS ADVOCATED ON EVERY LEVEL OF THE ORGANIZATION

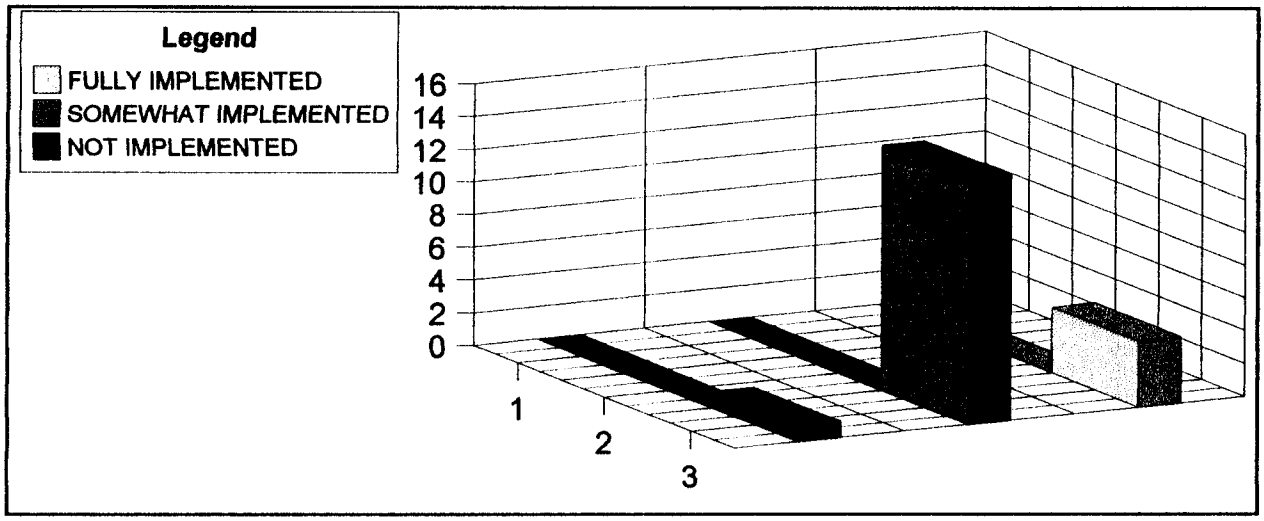

FIGURE 6

SLOGANS ARE NOT USED TO PROMOTE PERFORMANCE

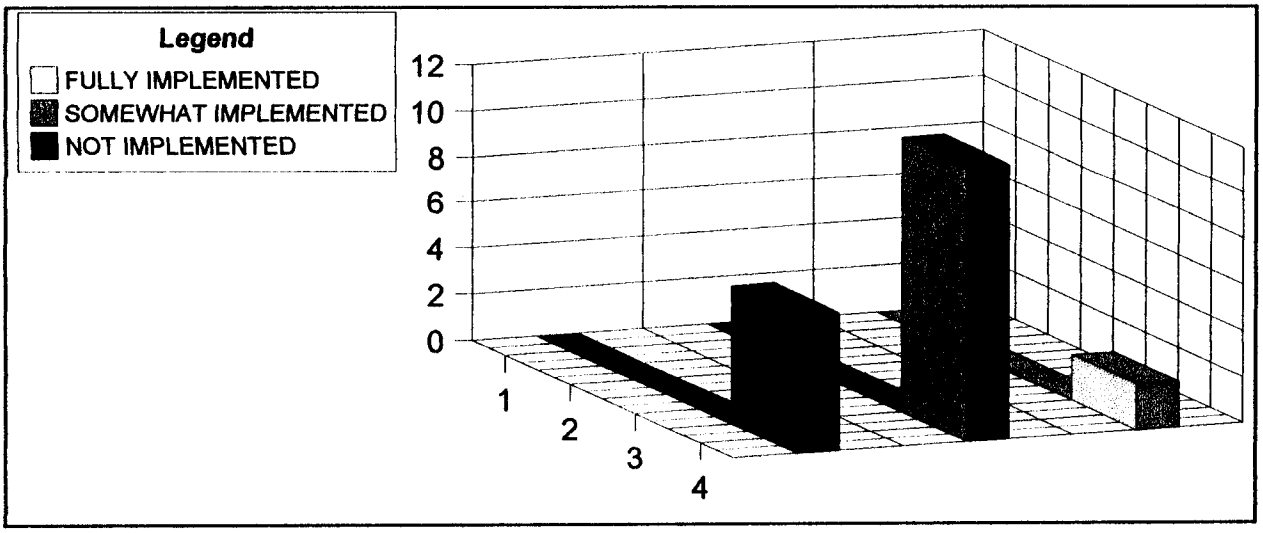

FIGURE 7

A PLAN/DO/CHECK/ACT CYCLE IS IN PLACE

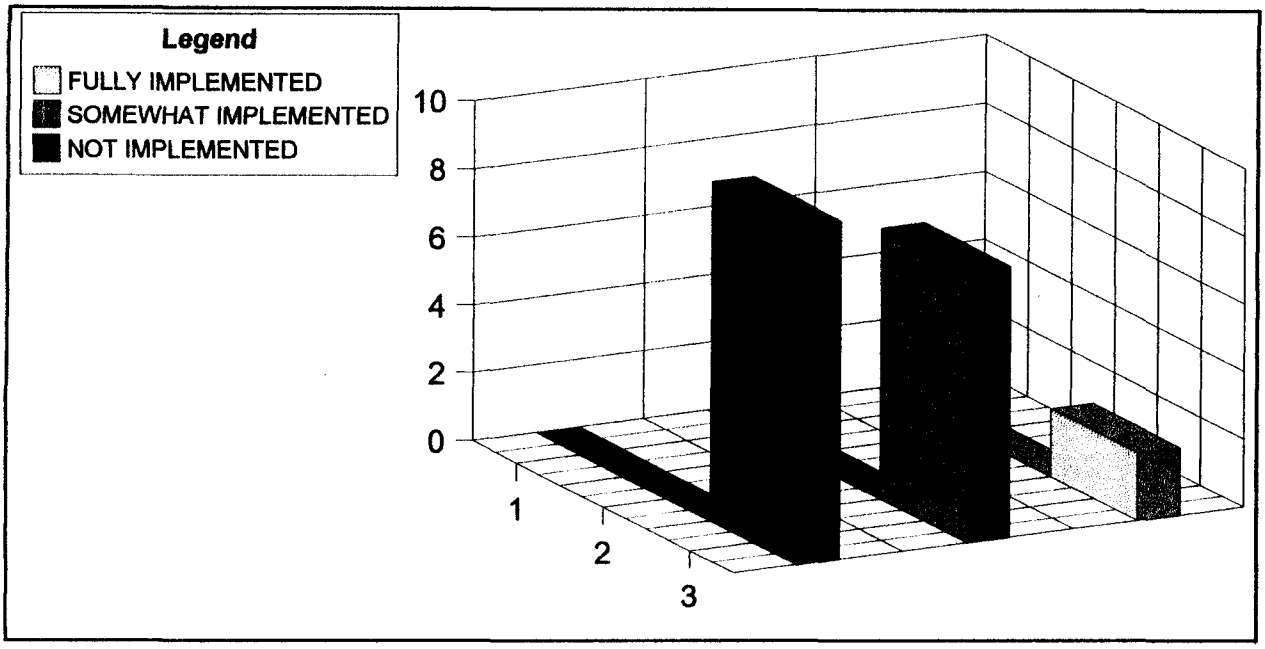

FIGURE 8

THE CONTINUOUS IMPROVEMENT PROCESS IS PROVIDING USEFUL TRAINING BENEFITS

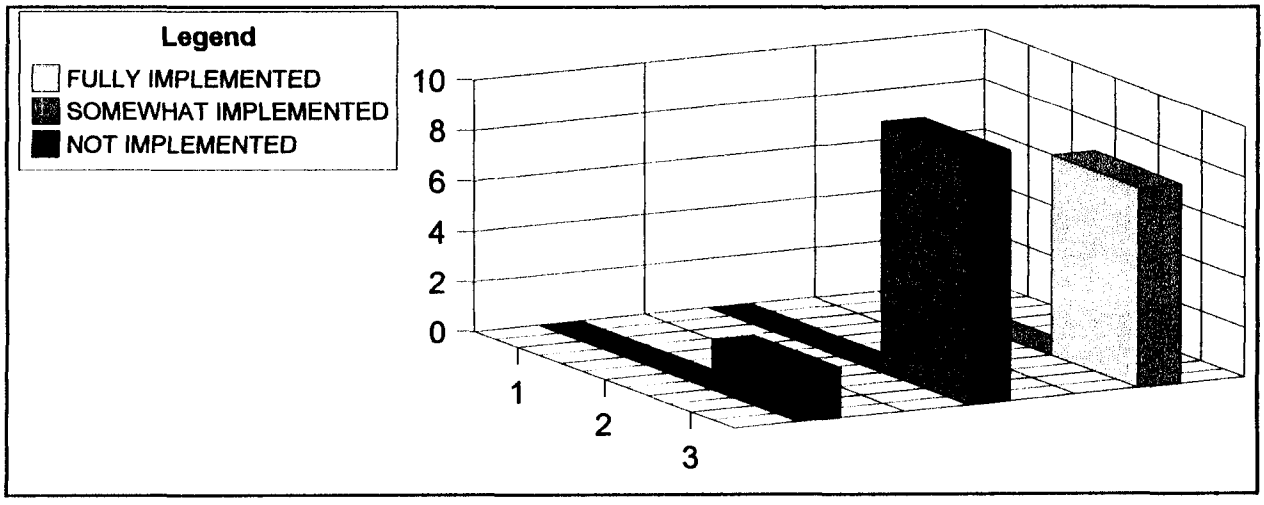

FIGURE 9

CONSOLIDATED DATA ANALYSIS OF ASPECTS OF TQM IMPLEMENTATION

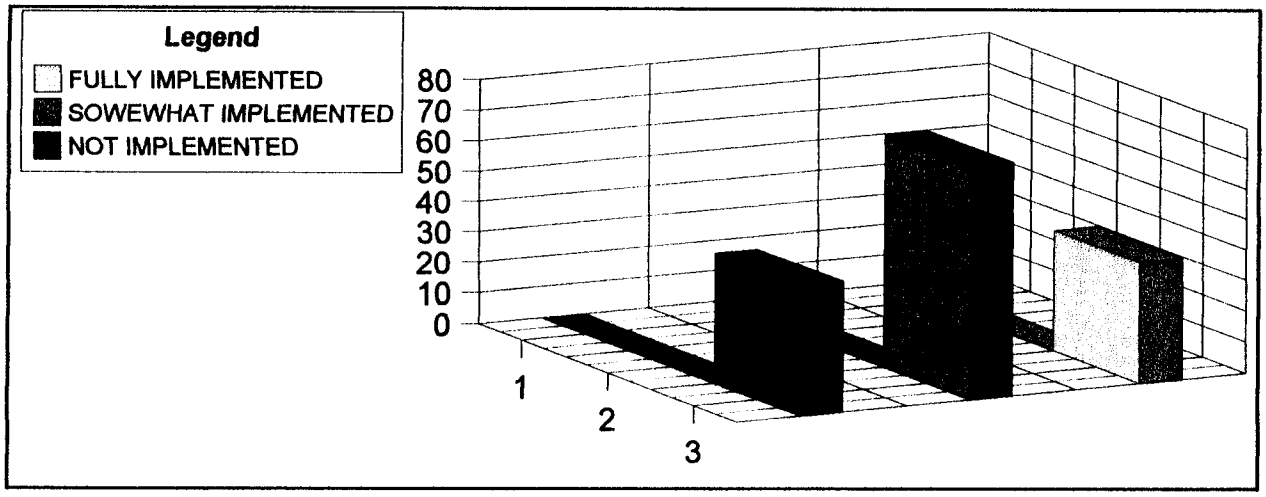

FIGURE 10

OTHER SURVEY FINDINGS

Other information gathered in the survey dealt with how each organization perceived TQM and their recommendations for using process improvement in training.

IS THERE A NEED FOR MORE SPECIALIZED METHODS OF PROCESS IMPROVEMENT FOR SMALLER ORGANIZATIONS.

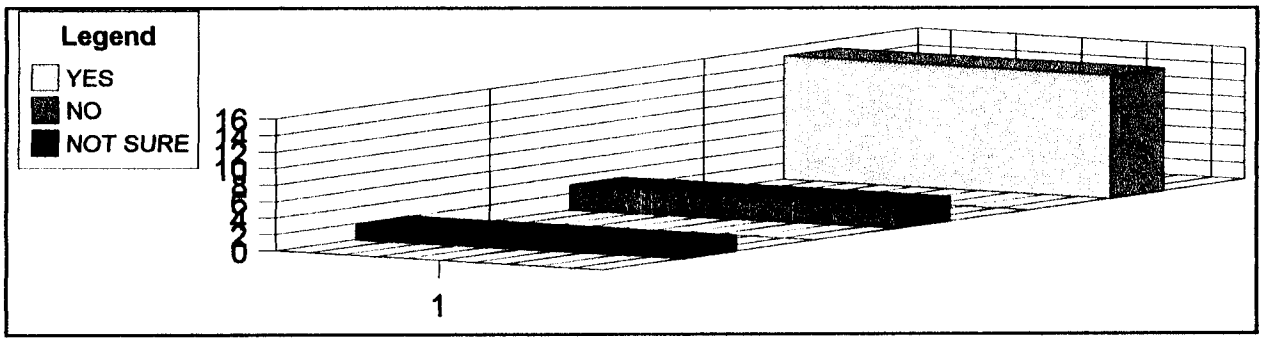

FIGURE 11

TITLES OF PERSONNEL RESPONSIBLE FOR THE IMPLEMENTATION OF TQM INTO TRAINING

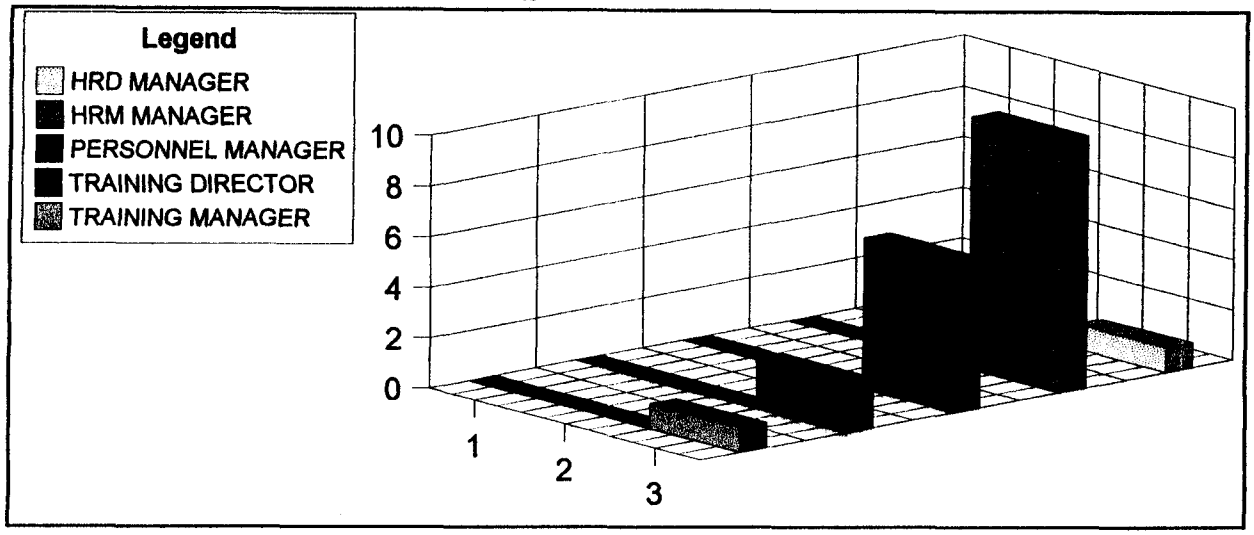

FIGURE 12

BENEFITS PROCESS IMPROVEMENT PROVIDES TRAINING

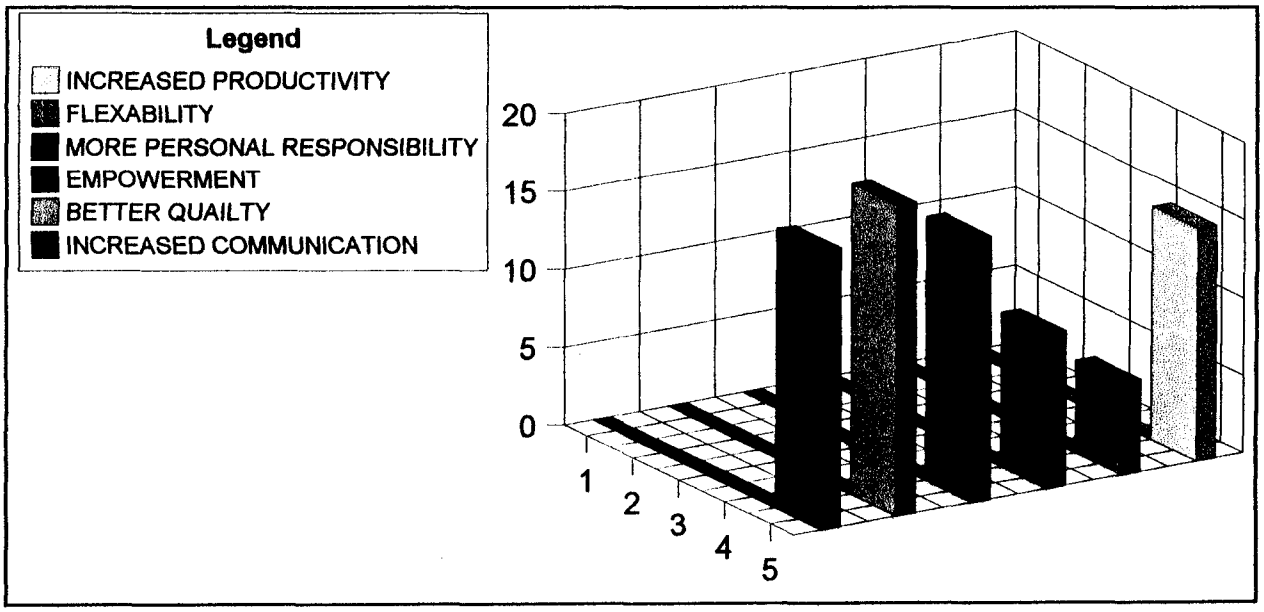

FIGURE 13

MOST SUCCESSFUL METHODS FOR IMPROVING TRAINING

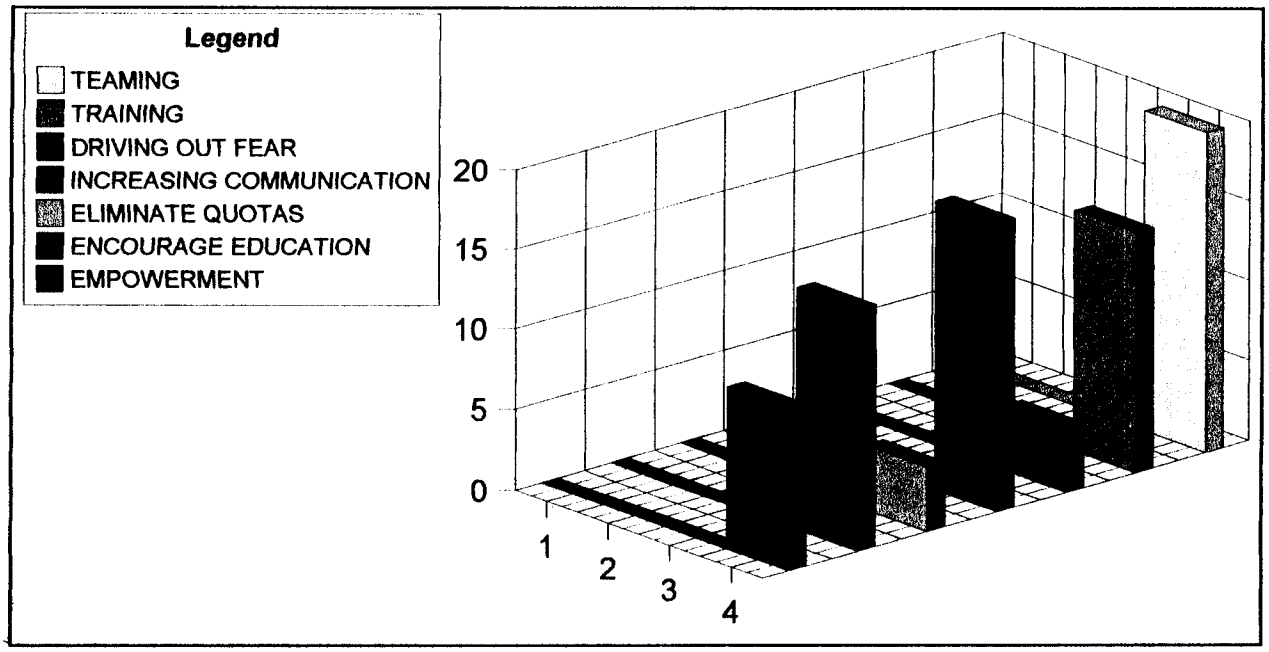

FIGURE 14

SUMMARY

The findings of this study were obtained from the interview responses. In Chapter V the research will be summarized, conclusions drawn and recommendations will be made based on the findings.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

SUMMARY

The problem of this study was to determine the degree that Total Quality Management principles were being employed in industry in the Virginia Beach area. To achieve this goal, interviews were conducted, with 20 Virginia Beach organizations that have training departments, in 1996.

This study reviews the implementation of Total Quality Management principles into existing Virginia Beach industry. Dr. Demming's TQM processes have been highlighted as guidelines for improving the quality of instruction. To determine if Virginia Beach industry is actually implementing these principles, interviews were requested from 30 Virginia Beach companies that have training departments. The actual findings based on the 20 interviews collected (66.6 % of companies solicited) reflect that 97.6 of the companies interviewed implement some version of TQM. Following are the conclusions drawn based upon the data collected.

CONCLUSIONS

Based on the data gathered, the following conclusions can be made:

Goal 1. Determine which aspects of Total Quality Management principles were being used in industry education in Virginia Beach.

Based on the findings, 95% of the companies interviewed were implementing, to some degree, TQM principles into their training.

Goal 2. Determine if training departments using some form of continuous process improvement were showing increased benefits to the organization.

The findings indicate that 95% of the companies using some form of TQM in their training were showing increased benefits to their organizational training.

Goal 3. Determinations if there was a need for more specialized methods of process improvement that could be used in smaller organizations where it would not be beneficial to implement the entire TQM process.

According to the findings, 98% of the companies surveyed indicated that for smaller companies to implement all of the aspects of TQM into their organization might be detrimental to their management structure. The data indicates that all companies feel that there is a need for more specialized methods of

process improvement for training, however none of them were sure what those specialized methods should be.

Goal 4. Determine who was managing the implementation of process improvement principles in the industrial training.

The data determined that the training functions fell 85% of the time into the HRM function and were the direct responsibility of the HRM Manager.

RECOMMENDATIONS

Based on these conclusions, it can be concluded that TQM in training in Virginia Beach manufacturing companies was active to a great degree. Although no organization interviewed implemented all aspects of the process, all of them recognized the need and at a minimum implemented those aspects of TQM that fit their organizational structure. The companies also felt that there was a need for more specific practical guidelines for implementing some of the processes. To progress in this direction the following recommendation s are made.

1) HRM and HRD professionals should be made aware of and given experience in implementing process improvement into their training.

2) The benefits of implementing TQM principles should be made available to both the public and private sector trainers as

a means for increasing public awareness of the processes.

3) A study should be made of special methods of process improvement tailored for small organizations with the results made available to those organizations.

Based on this study, TQM has a place in training in Virginia Beach industry and should be promoted more. The results of this study support the fact that continuous process improvement is a powerful tool for a training organization and can help a training organization meet the needs of its clients.

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APPENDIX A

INTERVIEW QUESTIONNAIRE

Interview Questionnaire for the Determination of Total Quality Implementation in Virginia Beach Industry

Purpose: Where indicated, please add any additional comments felt relevant to this survey.

Circle the letter that most strongly identifies whether the organization does or does not implement Total Quality Management.

Write in the blank provided more in depth information collected about each question.

Questions 1 - 9 use the following letters:

F - Fully implemented (Organizationally endorsed and active)
SW - Some What implemented (The procedure is in place but not proactive)
N - Not implemented

F SW N 1. A mission or goal statement is in place to focus the goals of the organization.

F SW N 2. Mass inspections are not implemented or endorsed.

F SW N 3. There is a procedure in place to provide for continuous process review and inspection.

F SW N 4. There is a continual process for education and self-improvement of everyone on the job.

F SW N 5. Teamwork is advocated on every level of the organization.

F SW N 6. Slogans are not utilized to promote performance.

F SW N 7. Education and self-improvement is advocated for everyone.

F SW N 8. A Plan/Do/Check/Act cycle is in action.

F SW N 9. The continuous improvement process is providing useful training benefits.

Questions 9 - 12 require only a written response.

9. Is there a need for more specialized methods of process improvement for smaller organizations where it would not be practical for implementation of the entire TQM process. What would those methods be that you would recommend.

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10. What is the position title of the person responsible for the implementation of process improvement into training.

11. What benefits does process improvement provide training in your organization.

12. What methods do you think are the most successful for improving training in your organization.

APPENDIX B

INTERVIEW QUESTIONNAIRE
COVER LETTER

May 15, 1996

Dear Sir,

I am writing to ask for your assistance in determining the extent of the implementation of Total Quality Management principles into Virginia Beach industrial training. As a trainer, I am very interested in how those principles have been assimilated into your organization.

Please find the attached list of questions that I would like to ask in an interview at your convenience over the next four weeks. It is my hope that your responses along with the responses of other interviewees will provide answers for my goal.

This survey is also part of my graduate degree thesis that I am pursuing at Old Dominion University. Please contact me at 804-425-9171 to arrange a convenient interviewing time. Thank you in advance for your cooperation.

Sincerely,

Henry S. Wilmer

APPENDIX C

INTERVIEW QUESTIONNAIRE
FOLLOW UP LETTER

May 31, 1996

Dear Sir,

I am writing again asking for your assistance in determining the extent of the implementation of Total Quality Management principles into Virginia Beach industrial training. As a trainer, I am very interested in how those principles have been assimilated into your organization.

Please find the attached list of questions that I would like to ask in an interview at your convenience over the next two weeks. It is my hope that your responses along with the responses of other interviewees will provide answers for my goal.

This survey is also part of my graduate degree thesis that I am pursuing at Old Dominion University. Please contact me at 804-425-9171 to arrange a convenient interviewing time. Thank you in advance for your cooperation.

Sincerely,

Henry S. Wilmer