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Quality of worklife programs in union and non-union settings : an exploration of outcome identification from the individual participants' point of view.

Pamela D. Sherer
University of Massachusetts Amherst

QUALITY OF WORKLIFE PROGRAMS IN UNION AND NON-UNION SETTINGS: AN EXPLORATION OF OUTCOME IDENTIFICATION FROM THE INDIVIDUAL PARTICIPANTS' POINT OF VIEW

A Dissertation Presented

By

PAMELA DARLENE SHERER

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Approved as to style and content by:

D. Anthony Butterfield

Dr. D. Anthony Butterfield, Chairman

Dr. Harvey Friedman, Member

Ronald Karren

Dr. Ronald Karren, Member

Curt Tausky

Dr. Curt Tausky, Member

D. Anthony Butterfield

Dr. D. Anthony Butterfield
Director, Doctoral Program

This work is lovingly dedicated to
my parents: Esther and Earl Sherer

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ABSTRACT

QUALITY OF WORKLIFE PROGRAMS IN UNION AND NON-UNION SETTINGS: AN EXPLORATION OF OUTCOME IDENTIFICATION FROM THE INDIVIDUAL PARTICIPANTS' POINT OF VIEW

SEPTEMBER 1986

PAMELA DARLENE SHERER

B.A., Carthage College
M.S., Southern Illinois University
M.B.A., Clark University
Ph.D., University of Massachusetts

Directed by: Professor D. Anthony Butterfield

This study investigates the outcomes attributed by rank and file individuals to participation in Quality of Worklife (QWL) problem-solving group programs. Findings are based on participant responses from 4 firms (2 union and 2 non-union). The sample of 151 respondents includes 78 union and 73 non-union participants who were actively involved in problem-solving groups at the time of the study.

A 31-item questionnaire, developed from information gathered through interviews with QWL participants, was used to explore three main questions: 1) What outcomes do rank and file participants identify with QWL participation? 2) Do expected and actual outcomes differ? 3) Do perceptions about the outcomes associated with participation differ with

respect to whether those participants are from union or non-union firms?

The questionnaire items were grouped apriori into 6 categories of outcomes and tested for internal consistency. The 6 categories were: 1) Collective Influence; 2) Personal Skill Development; 3) Negotiable Collective Bargaining Issues; 4) Information About Job; 5) Information About Company; 6) Feelings About Work.

The results, using Multivariate Analysis of Variance applied to the 6 groupings, suggest that expected outcomes were generally different from those actually experienced. For 5 of the 6 groupings, actual outcomes exceeded expectations. Only in the grouping of Negotiable Collective Bargaining Issues did participants actually receive no more than they expected from participation.

Differences between union and non-union workers occurred in two outcome groupings: Negotiable Collective Bargaining Issues, and Information About Company.

The results, which include the participant-identified outcomes and the evaluation of those outcomes, provide a picture of QWL programs from the rank and file point of view. Previous studies have emphasized the evaluation of Productivity and Job Satisfaction as outcomes of problem-solving group participation. The findings in this study provide information which may contribute to a necessary broadening of criteria for evaluation of QWL programs.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

C H A P T E R I

INTRODUCTION

The past decade has witnessed the introduction of a variety of organizational change efforts in both union or non-union firms. Grouped under the umbrella term "Quality of Worklife (QWL)" these efforts have included the introduction of autonomous work groups, problem-solving groups (quality circles), labor-management participation teams, and job enrichment programs. Common to all of these programs are goals of increasing productivity and increasing employee satisfaction.

Research on the effects of QWL programs with respect to the organization as a whole, workgroups within the organization, or individual program participants is just beginning to flourish. Yet, noticeably absent, is research which focuses on the outcomes rank and file participants associate with program involvement. Although recent studies have begun to provide extensive information on supervisor and managerial involvement in QWL (Klein, 1984; Schlesinger, 1984), there is a marked paucity of information on the attitudes of rank-and-file workers toward such participation.

While wide-spread speculation exists concerning the

potential impact of QWL programs, that speculation has a very sketchy foundation since there has been little systematic study focusing on outcomes associated with such participation by the individual participants--in either union or non-union firms. Not only, then, is there a need for more information to help clear up the speculation about the effects on participants of QWL programs, but there has been an increasingly loud call by local and international unions who question, both, the motives behind managements' implementation of the programs and the effects those programs will have on participants.

Synopsis of Research Questions and Methodology

The research reported in the following pages explores the outcomes rank and file participants in QWL programs, in two union and two non-union firms, identify with program involvement. Both quantitative and qualitative data gathering techniques are utilized in the study. A questionnaire developed by the researcher, based upon interviews with participants in QWL programs, was administered to a sample of participants in each firm. The study explores the outcomes these individuals expected and those they have experienced, and makes comparisons between the union and non-union participants. In doing so, it

provides the following: 1) an identification of outcomes from the participant's point of view; 2) an assessment of whether expected outcomes differ from actual outcomes; 3) an exploration of whether union and non-union participants experience similar or different outcomes.

Contributions

The study provides several contributions to our understanding of QWL efforts.

Designers and implementors of QWL programs in union and non-union firms, might, in their planning of those programs, develop them with a better understanding of what the participants, themselves, expect will result from such participation. Up to now most program designs have reflected the needs and desires of organizationally defined outcomes.

Clarification of what the rank and file identify as outcomes could assist future researchers in assessing the desirability of various QWL efforts from the rank-and-file perspective. Since, for the most part, unions have not been quick to support QWL efforts because of the questionableness of "productivity" goals of those programs and because of uncertainty about whether QWL may function as a union-busting activity, increased knowledge of how participants

view the programs would provide union leadership with a more systematic basis for making decisions concerning support of those programs.

Finally, since little scientific evaluation has been accomplished with respect to QWL programs, such outcome identification could contribute to the understanding of what is required for evaluation and stimulate further research in the development of measurement tools and other evaluative criteria.

These are but a few of the potential ways that the research presented might be utilized. If interest in only one of these areas is activated, a significant contribution would be made to greater understanding of issues related to QWL programs.

Chapter II reviews the current literature focusing on QWL programs with respect to both union and non-union settings. Because the impetus for questioning the effects of QWL programs has been mainly generated by writers exploring labor/management cooperation issues from the union perspective, the review begins with coverage of literature relating to union involvement in QWL efforts.

Chapter III describes the research sites and methodology. In Chapter IV the results of the study are presented and in Chapter V the results are summarized and discussed.

C H A P T E R II

REVIEW OF THE LITERATURE

Although there has been a long history of labor-management cooperation in American Industrial Relations [1], the past decade has witnessed increased activity in efforts initiated by management for working jointly with labor to achieve various specific organizational goals (Batt and Weinberg, 1977; Greenberg and Glaser, 1980; Jacoby, 1983; Parsons, 1984; Siegel and Weinberg, 1982; Simmons and Mares, 1983). The interest in and activities surrounding such labor-management cooperation issues have led some to question whether the traditional adversarial relationship has been undergoing significant change (Fulmer, 1984; Katz, 1984; Kochan and McKersie, 1983; Mroczkowski, 1984; Strauss, 1984; Watts, 1983). Others have suggested that this heightened activity in cooperative efforts is simply a temporary phenomenon, resulting from the recent decline in economic conditions in the United States, which should have little long-run effect on labor-management relations (Barbash, 1977; Berg, 1978; Fraser, 1983; Hill, 1981; Levitan and Johnson, 1983; Marcarov, 1982).

Whatever the impact of such efforts, the fact remains that a variety of labor-management cooperative efforts are occurring at the national level, industry-Wide level, area-community-Wide level, and plant level (Corbett, 1981; Ray, 1981; Leone, 1982, and Schuster, 1982). [2]

The motivation for increased labor-management dialogue and activity at these different levels has been attributed to various social, technical, political, and economic factors. These include a change in the composition of the work force, accompanied by individuals' change in attitudes toward work itself (Kerr, 1979; Katzell, 1979; Staines and Quinn, 1979; Work in America, 1973). Seashore and Goitein (1980), in a national survey regarding work, conclude that there appears to be a gap between the participatory aspirations of employees and organizational responses to those needs. Staines and Quinn (1979) conclude from their own national surveys that overall job satisfaction of the U.S. workers declined appreciably between 1973 and 1977. They indicate that the decrease in job satisfaction affected virtually all demographic and occupation subclasses, especially among workers with college degrees.

In addition to issues surrounding the individual and his/her satisfaction with work, a second major factor promoting increased cooperation seems to have been motivated

by management and governmental concern regarding the U.S. productivity growth rate which has been lagging behind major foreign competitors who have penetrated the American market (Mroczkowski, 1984). Interests in increasing productivity, reducing absenteeism and reducing turnover have all recently become focal issues in labor-management cooperative efforts (Greenberg and Glaser, 1980).

Another factor promoting interest in labor-management efforts is no doubt a result of the rapidity of technological advances introduced into the work place. Major events, such as the introduction of robots, have resulted in redesign of work, change of individual jobs and change in organizational structure (Walton, 1983).

Finally, the government has increased its expressed interest in labor-management cooperation. The 1978 passage of the Labor Management Cooperation Act, designed to encourage increased dialogue between the two parties, serves as an example of this interest [3]. In addition, the recent development of the Division of Cooperative Labor-Management Programs, in the U.S. Department of Labor, has as its mission the promotion of joint activities between labor and management (Kochan, 1980).

National, industry-wide, and community-area-wide efforts aimed at increased cooperation have attempted to address some of the above issues. Such activities have generally focused on 1) improving relations between labor-management through increased communication; 2) addressing problems specific to the different levels (for example at the national level development of legislation relevant to particular issues); and 3) identifying areas where joint efforts could prove beneficial to both parties.

Although these efforts may foster increased understanding and cooperation among the parties involved, it is at the plant level, where employees and employers work together on a daily basis, that it will be determined if increased cooperation is possible, how it is to be accomplished, and whether it will be accomplished.

Over the past decade a variety of labor-management initiated programs have been introduced at the plant level which are designed to increase labor-management cooperation in attempts to meet specified organizational goals. Although the programs (to be described below) may utilize different structures, processes, and procedures, all are considered to be "Quality of Worklife" (QWL) programs and share some similarities in overall goals.

Various definitions of QWL programs have emerged over the past fifteen years (Nadler and Lawler, 1983:26; Chisholm, 1983:12; Goodman, 1980;487; Greenberg and Glaser, 1980:3). [4] Common to these definitions are two overriding goals of Quality of Worklife efforts: first, the goal of increasing organizational effectiveness (normally measured through increased organizational productivity); second, the goal of increased humanization of the work environment (normally measured through some indicator of worker satisfaction). Accomplishment of these QWL goals is seen as dependent upon more effective utilization of the talents and skills of the work force through the development of opportunities for increased worker participation in organizational problem-solving and/or organizational decision-making.

Drago (1983) categorizes the different types of QWL programs into the following four classifications: labor-management committees, job enrichment programs, problem-solving programs, and autonomous work groups.

Labor-Management Committees

Labor-Management Committees are managerial-initiated efforts, at the plant level, designed to secure worker representation in cooperative efforts toward the major goal of increasing productivity. [5] The history of labor-management committees in the United States dates back to the

early 1900's; they experienced heightened activity after World War I and during World War II. [6] The number of Labor-Management Committees increased during World War II largely as a result of the appeal of the War Production Board (WPB) for employees and unions to organize committees in mines, shipyards, and plants, to speed up production of needed war materials. At the end of the war, with the impetus for cooperation removed, labor-management committees virtually disappeared and relations between management and labor continued in their historically adversarial relationships.

Other forms of labor-management cooperation, designed to increase productivity, began to receive wider attention and implementation during the 1950's. Developed by Joseph Scanlon in the 1930's, and still in use today, the Scanlon Plan is a system of joint Labor-Management production committees designed to encourage and evaluate suggestions for work improvement.[7] Other unique features of this plan are a plant-wide incentive scheme based on measuring plant-wide productivity change and a formula for distributing productivity savings in the form of monthly bonuses.

Scanlon plans function mainly as suggestion systems designed to increase productivity. The incentive for

workers to make suggestions is directly tied to the group bonus plan and, hence, dependent on productivity changes. The evaluation of these types of labor-management cooperative efforts, as would be expected, has concentrated on the measurement of resultant productivity increases (Schuster, 1983; 1984).

Job Enrichment

The phrase "job enrichment" is often mentioned when referring to QWL programs. However, as we shall see, job enrichment, as conceptualized in the following description, is the least likely of the four types of QWL efforts to involve increased employee participation.

The originating theories that underlie job enrichment stem from Frederick Herzberg and his associates (Herzberg, Mauser, and Snyderman, 1959; Herzberg 1966; and Paul, Robertson, and Herzberg 1969). Herzberg's research led him to postulate that aspects of an individual's work situation leading to job satisfaction differ from those that lead to dissatisfaction, and that the actual work a person carries out is critically important in determining the satisfaction he derives from his job. Herzberg's view is that a person needs opportunities to take responsibility, receive recognition for achievements, and have avenues to advance

and develop in his job if he is to be involved in his work. Job enrichment would be accomplished by what Herzberg called a "vertical" loading of new responsibilities to the job, as compared to " horizontal" loading which enlarges the job but adds little meaningful work (Herzberg 1968:59).[8]

The implementation of job enrichment programs thrived in the 1960's and 1970's. Programs were implemented in various divisions of such companies as AT&T, Motorola, Texas Instruments, and Polaroid. [9] These job enrichment programs all seem to have as a common thread the fact that they have been managerially implemented and have focused on the redesign or design of jobs with the expressed goal of providing employees increased satisfaction and increased motivation (albeit with an underlying goal of increasing employee performance). Actual worker participation in the process of design of jobs, however, has been minimal (Tausky, 1978:105). Increased worker participation as a result of job enrichment programs seems merely to increase employee involvement in the performance of the given job. Because job enrichment has focused on the individual job and tasks associated with it, and has only incidentally touched upon matters of pay, working conditions, seniority rights, and work rules or promotions, management has been able to

implement these programs without concern for union involvement. And, since the focus of these programs has not been expressed explicitly as a method for increasing productivity, unions have not been quick to respond negatively to their implementation.

Problem Solving Groups

Problem solving groups are another form of QWL projects. They have as their central focus the direct participation of employees in workgroups which meet periodically under the direction of a team leader, to identify and solve work related problems (Wood, Hull, and Azumi, 1983; Mohr and Mohr, 1983; Munchus, 1983).

The relatively widespread introduction of formalized problem-solving teams into companies in the United States over the past decade can be largely attributed to the attention given by scholars and management experts to Japanese management practices focusing on quality control. Known as Quality Circles, and introduced in Japan by Edward Deming in the early 1950's, the Japanese utilize workgroup teams in production problem-solving.[10] Central to the concept of Quality Circles are the ideas that 1) workers should be trained in statistical techniques to aid them in finding solutions to product problems, and 2) the responsibility for quality control rests with the individual

employee.

The American version of Quality Circles has tended to de-emphasize the statistical control aspect of the workgroup and instead has focused on the human relations aspect (Wood, Hull, and Azumi, 1983). Rather than American workers being extensively trained in problem solving skills used as a method to increase product quality, American Quality Circles programs tend to emphasize the development of problem solving techniques, interpersonal skills, and group dynamics as their major focus (Wood, Hull, and Azumi, 1983). [11] A typical description of a Quality Circle is provided by Lawler and Mohrman (1985):

"A quality circle is a group of employees that meets regularly to solve problems affecting its work area. Generally, 6 to 12 volunteers from the same work area make up the circle. The members receive training in problem solving, statistical quality control, and group process. Quality circles generally recommend solutions to quality and productivity problems which management then may implement. A facilitator, usually a specially trained member of management, helps train circle members and ensures that things run smoothly. Typical objectives of QC programs include quality improvement, productivity enhancement, and employee involvement. Circles generally meet four hours a month on company time. Members may get recognition but rarely receive financial rewards."

The introduction of Quality Circles has flourished in the United States in the past decade. According to Lawler and Mohrman (1985:66) "a 1982 study by the New York Stock Exchange showed that 44% of all companies with more than 500

employees had quality circle programs. Nearly three out of four had started after 1980. Although no hard data are available, a good estimate is that over 90% of the Fortune "500" companies now have QC programs in their structures." Quality Circle programs exist in both union and non-union firms such as General Electric, Honeywell, Digital Equipment, and IBM.

One of the first instances of a unionized company to become involved with problem-solving groups occurred at the Harmon Industries plant in Bolivar, Tennessee (Zwerdling, 1980; Macy, 1978). This well-documented experiment serves as a benchmark for subsequent problem-solving QWL programs introduced into other organizations. Generally, there is an agreement drawn up between representatives from Union Headquarters and Corporate management that specifies the terms of the program. Issues covered in the agreement (sometimes called a "letter of understanding)" include how the project is to be designed, who will coordinate the program, how the program will be financed, how the program can be terminated, the relationship of the project to the collective bargaining process, and how the program is to be evaluated.

Although problem-solving groups such as Quality Circles have been given the responsibility by management to identify, discuss, and propose solutions to workplace problems, they have limited decision-making power granted to them. As Zwerdling (1980:4) indicates with regard to the Harmon project: "...the authority for approving proposals and allocating the needed resources for their implementation remains with line managers who have operational authority in the part of the organization that might be affected. The approval or rejection of a proposal is based on formal presentation of the problem and its proposed solution which is made by the Quality Circle group to the manager involved". This restriction on decision-making has become one major issue, from the union perspective, when deciding whether or not to participate in problem-solving groups. We will return to this, as well as other union concerns, in a later discussion.

Autonomous Work Groups

The concept of autonomous work teams has received widespread attention in the United States mainly as the result of two experiments at: 1) the General Foods Gravy Train Plant in Topeka, Kansas; and the Rushton Mining Company in Osceola Mills, Pennsylvania. [12]

Autonomous work groups are work structures where members regulate their work behavior about the whole task (or most of it). This work design has at least two features that distinguish it from more traditional task structures: the focus of design is on interdependent task groupings rather than on individual tasks; and task control is located within the work groups, rather than external to it (Cummings and Molloy, 1977:21).

The concept of autonomous work groups derives from basic principles of socio-technical systems theory [13]. Socio-technical systems theory evolved from a British coal mining study conducted after World War II by social scientists at the Tavistock Institution of Human Relations in Longdon, England (Trist and Bamforth, 1951) [14]. According to their study, the nature of work as a socio-technical system followed from the fact that task performance requires both a technology (i.e. tools, techniques, and methods), and a social structure that relates people to the technology and to each other.

The basic principles surrounding socio-technical design include the joint optimization of the social and technical systems in an organization, the responsible autonomy of the individual worker, and the application of principles of group behavior to achieve those ideals.

The concept of autonomous work groups is firmly grounded in socio-technical theory. As Davis (1966:44) states, a good sociotechnical system should include the following.

1. Group composition that permits self-regulation of the group's functioning.

2. Group composition that deliberately provides for the full range of skills required to carry out all the tasks in an activity cycle.

3. Delegation of authority, formal or informal, to the group--for self-assignment of tasks and roles to group members.

4. A group structure that permits internal communication

5. A group reward system for joint output.

A decision to implement autonomous work groups as a QWL effort involves system-wide changes in an organization. Changes in both the social and technical systems and relationship between the two are necessary. Where a company is unionized, changes in relationships between the management and union also occur, as exemplified by the Rushton experiment. Because the design of autonomous work groups resulted in changes in the design of work, in the reward system, and in the grievance procedures, these changes were in direct conflict with various aspects of the collective bargaining agreement. Goodman (1980) implies that the treading on traditional issues at Rushton, which

were usually protected under the collective bargaining agreement, was a major reason why the workers at the Rushton mine voted, a year after the beginning of the experiment, to terminate their participation in the project.

The introduction of autonomous work groups has not flourished in either union or non-union settings in the United States. Although current literature presents conceptually attractive ideas surrounding the possibility for implementation of autonomous work groups, few experimental attempts have succeeded.

In summary, the above descriptions of programs, which have been referred to as QWL programs, point out that various meanings and specific types of projects have become associated with the term Quality of Working Life. Table 1 is an attempt to summarize some of the information previously presented and provides an encapsulated form of the various QWL programs. Although extensive discussion has not been made for each of the differing characteristics indicated for all programs mentioned, the table highlights many of the similarities and differences of the programs.

All programs are initiated by management, have as goals both productivity improvement and increased workplace humanization, and attempt to achieve these goals through

TABLE 1

CHARACTERISTICS OF QUALITY OF WORKLIFE PROGRAMS

CHARACTERISTICS	JOB ENRICHMENT	LABOR-MANAGEMENT COMMITTEES	PROBLEM SOLVING GROUPS *	AUTONOMOUS WORK GROUPS
Initiated By	Management	Management	Management	Management
Administered By	Management	Joint Labor-Mgmt Committee at the plant level	Joint Labor-Mgmt Committee at the plant level	Joint Labor-Mgmt Committee at the plant level
Type of Agreement with Union	No formal agreement with union	Joint Labor-Mgmt developed "letter of agreement or understanding." Normally separate from C.B. agreement	Joint Labor-Mgmt developed "letter of agreement or understanding." Normally separate from C.B. agreement	Joint Labor-Mgmt developed "letter of agreement or understanding." Normally separate from C.B. agreement
Extent of Union Participation in Design of Progras	No involvement	Jointly developed (extent of union participation differs by firm & union)	Some jointly developed (extent of union participation differs by firm & union)	Jointly developed (extent of union participation differs by firm & union)
Desired Outcomes	Increased satisfaction	Emphasis on Increased Productivity; Increased worker satisfaction appears secondary	Emphasis on Increased Productivity and worker satisfaction (emphasis differs depending on program)	Emphasis on Increased Productivity and worker satisfaction (emphasis differs depending on program)

*Frequently called Quality Circles

TABLE 1 (continued)

CHARACTERISTICS OF QUALITY OF WORKLIFE PROGRAMS

CHARACTERISTICS	JOB ENRICHMENT	LABOR-MANAGEMENT COMMITTEES	PROBLEM SOLVING GROUPS	AUTONOMOUS WORK GROUPS
Nature of Worker Participation	Focus on increased worker participation in his/her job performance	Focus on workers being "advisory" to Mgmt through elected representatives who serve on local labor-mgmt committee. Normally "suggestion" system implemented is designed to increase worker input.	Focus on workers being "advisory" to Mgmt Problem-solving groups at plant level established to recommend any changes regarding production etc., to mgmt. Limited, if any, decision-making power.	Focus on workers being decision-makers. Small problem-solving groups established to make decisions over how work is accomplished.
Training Required	Training may be required for workers to learn new aspects of jobs	May require no training. Labor/Mgmt Committee may educate workers regarding incentive schemes (i.e. Scanlon plan)	Training normally offered in problem-solving skills; communication skills; small group behavior; decision-making skills.	Training normally offered in problem-solving skills; communication skills; small group behavior; decision-making skills.
Kind of Organizational Structure Changes	Normally organization structure not affected. Individual jobs may change.	Normally organization structure not affected Committee system may be added to structure	Normally organization structure stays in tact Committee system may be added to structure	Organization structure changes. Workgroup becomes focus. Change occurs decision structure.

some form of increased employee involvement. Please note that programs differ as to the importance that is placed on the productivity and increased humanization goals. Some programs may have, as their main goals, productivity improvement; others may emphasize increased humanization of the workplace.

The mechanisms established in each of these programs for increased employee participation, as well as the amount of decision-making authority granted by management to employees, may differ. For example, in the Scanlon Plan, employees elect representatives to serve on the labor-management committees; in Quality Circles and Autonomous Work Groups, employees directly participate in the program. Decision-making authority in Quality Circles and Labor-Management Committees is generally not granted by management, whereas in Autonomous work teams, employees are granted decision-making power. Quality Circles and Labor-Management Committees function, for the main part, in an advisory or suggestion-giving role to management.

Although attempts have been made, in unionized environments, to introduce problem-solving teams without the involvement of the union, today almost any attempt by management to institute labor-management committees, quality circles or autonomous work teams, involves union

participation in the design of the program. In all three types of efforts (excluding job enrichment), the joint-planning efforts are generally committed to a formal letter of agreement or understanding between the two parties. This normally occurs between the international union headquarters and the corporate representatives. The formal agreement specifies the length of the agreement, conditions with which it can be terminated by either party, the goals of the program, and the mechanisms to carry it out. The letter of agreement is usually separate from the collective bargaining contract and clearly indicates the relationship of the program with respect to collective bargaining.

As indicated, some programs are directly tied into an incentive system which is based on increased productivity. The tie-in of programs to an incentive system is often instrumental in determining whether the union decides to participate in any labor-management cooperative effort

In summary, a variety of QWL efforts have been instituted in unionized firms over the past decade. However, the introduction and implementation of these programs have raised several issues of concern for the managements, unions and workers who participate in these programs.

Current Literature

Current literature involving the introduction of these various programs in unionized firms is still in its early stages. It has been only recently that organizational theorists, industrial relations experts, and sociologists have begun to focus research efforts on QWL programs in unionized firms. The existing literature can be viewed as representative of the following categories: QWL and Issues of Organizational Change; QWL and Its Relationship to Collective Bargaining; Exploration of Issues Relating to QWL and the Union Reluctance to Participate; Common Problems Associated with the Implementation of QWL Efforts; and Research and Evaluation Issues related to QWL. As will be shown in the following discussion, due to the recency of cooperative programs in unionized settings, much of the current literature focuses on conceptualization of labor-management cooperative models and their outcomes, issues related to implementation of programs (particularly Quality Circles), and case study descriptions of programs.

Schuster (1984) identifies five models of change and cooperation in unionized settings. [15] Kochan and Dyer (1976) present a model of organizational change in the context of union-management relationships which is regarded as one of the first attempts at addressing change issues.

The model is based on the assumption that union and management are separate organizations with distinct and often conflicting goals; and that power and conflict, characteristics of these relationships, are based on these structural differences. The existence of these two interdependent organizations results in three different sets of interests that exist in a unionized setting; the employer, the union organization, and the employees (as both employees and union members.) The Kochan and Dyer model focuses on three stages in the development of the change process and presents propositions relating to these stages. The three stages focus on the motivation for labor and management to come together (stimulus for change), the motivation for their initial decision to participate in a joint-venture (initial commitment), and the motivation for joint-efforts to continue (institutionalization of change).

A second model developed by Lawler and Drexler (1978) focuses on the dynamics of establishing QWL programs in unionized settings. Their model identifies factors working for and against joint union-management quality of worklife programs.

A third model, presented by Nadler, Hanlon, and Lawler (1980) identifies the factors influencing the success of

labor-management quality of worklife programs. They present variables to consider in measuring QWL project effectiveness such as consultant effectiveness, organizational financial viability, organizational climate, labor-management committee role, ownership of project, and the assessment of goal clarity.

A fourth model by Goodman (1973) proposes an expectancy theory explanation of Scanlon Plan performance. Specifically geared to gain-sharing programs, this model considers the effect of individual differences in the attractiveness of Scanlon outcomes (bonuses) and individual beliefs that increased efforts will lead to those desired outcomes.

Finally, Schuster (1984) presents a model of labor-management productivity program effectiveness. His model was developed to include elements from each of the previous models.

Each of the models focuses on relationships between the union and management and provides some conceptual frameworks from which to discuss, as well as research, organizational change. To date, however, there is no existing research which fully tests any of these models.

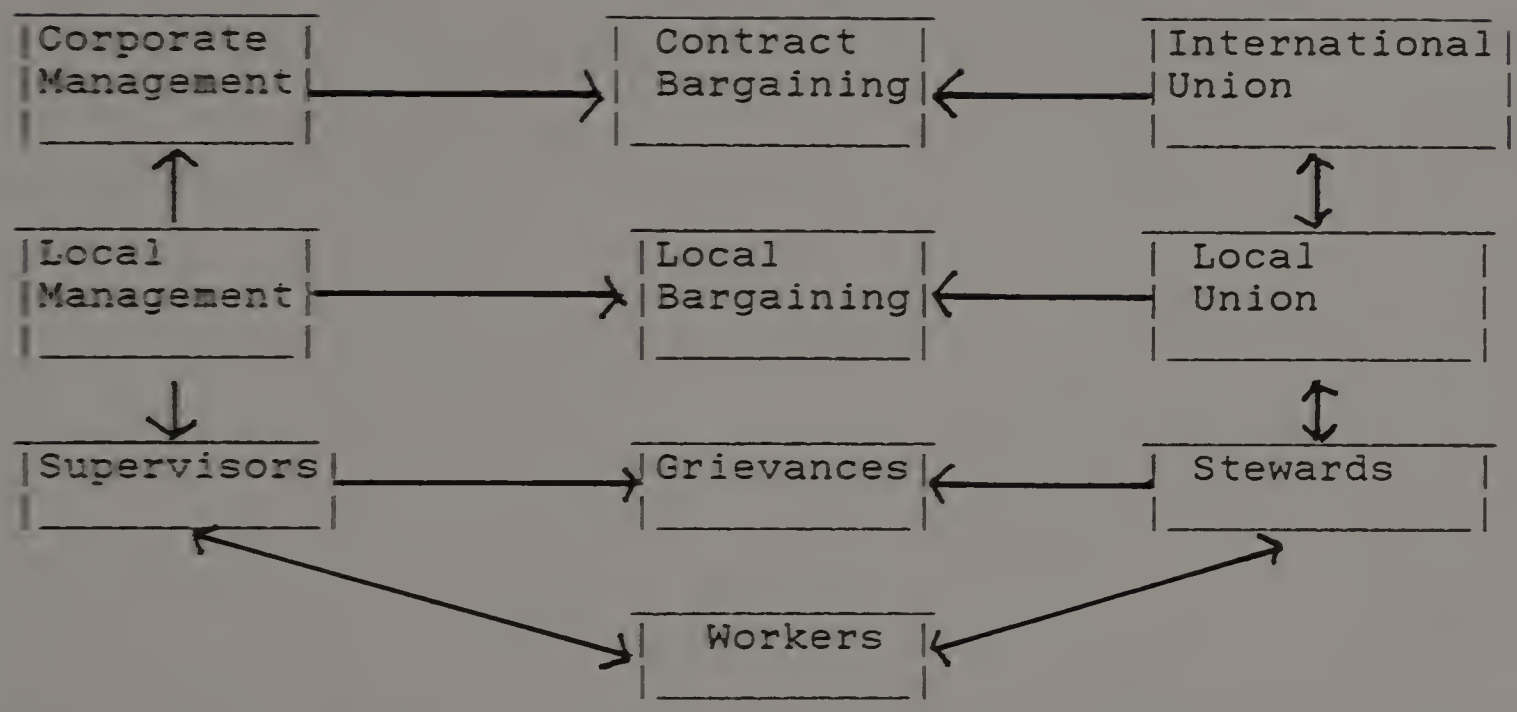
A sixth model presented by Bullock et al. (1983), based on Brett (1980), presents a description of two structural

models that can be used to to understand the cooperative relationship developed by QWL with respect to the collective bargaining process. The two models, in addition to describing the structure designed for QWL, illustrate clearly the three party (union, management, and employee) relationship that Kochan and Dyer indicated in their model of change.

Figure I presents the relationships among the three parties as they apply to the collective bargaining context. Figure II represents the relationship between union and management collaborative efforts as represented through QWL programs. Bullock (1983:3) indicates that these two diagrams should be thought of as overlaid, with the union-management organization remaining intact, yet adding another dimension to the relationship--that of cooperative problem-solving.

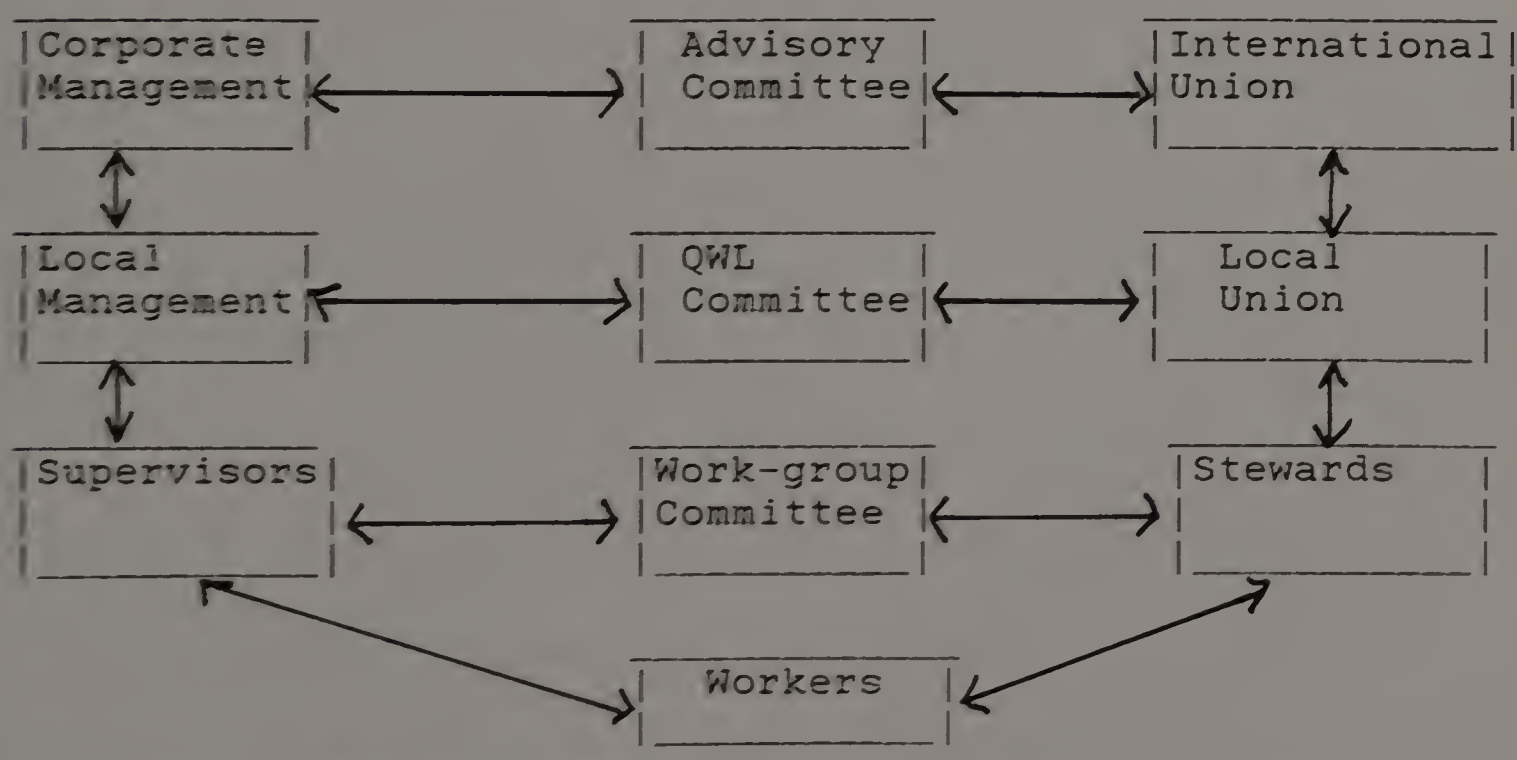
The development of a separate structure for the implementation of QWL efforts has recently been referred to as creating a "parallel" organization--parallel to the traditional bureaucratic structure (Kanter and Stein, 1982; Stein and Kanter, 1980; Miller, 1978).[16] The organizational change literature discussing the conceptualization and implementation of parallel organizations in both union and nonunion environments is

FIGURE 1



A heuristic model of traditional union-management relations (Bullock et al., 1983: 389)

Figure 2



A heuristic model of QWL projects as union-management collaborative efforts (Bullock et al., 1983: 390.)

also still in its early stages.

Although the relationship between QWL and Collective Bargaining has generated much attention since the introduction of QWL programs in unionized settings (Bluestone, 1979; Cohen-Rosenthal, 1984; Strauss, 1980), much of what has been written focuses on speculation of the nature of this relationship. The major questions in this relationship focus on whether QWL programs should be separate from collective bargaining, whether they should be included in the collective bargaining process, or whether they are already included in the collective bargaining process.[17] There are three studies which attempt to assess the types of issues union members feel are appropriate for collective bargaining and issues for QWL.

Dyer, Lipsky, and Kochan (1977) surveyed 211 local leaders and activists from various unions throughout New York State. The results of their study suggest that the degree of support for joint programs among labor leaders varied depending upon the types of issues which were under consideration. Support for joint programs was generally high (63%) with respect to Quality of Worklife issues which included control of work, interest in work, and relationships with supervisors; it was lower (52%) for Productivity issues which included adequate resources

available, productivity specifically, and work load/speed; and it was quite low (23%) for Traditional issues such as safety in the work place, job promotion procedures, grievance procedures, working hours, job security, earnings and fringe benefits.

In an extension of the Dyer study, Holley, Feild, and Crowley (1981) examined preferred roles of their union in negotiating quality of worklife, productivity, and traditional bargaining issues. Using data collected from 171 members of a railroad union, the results showed that members' support for union involvement again tended to vary depending upon the types of issues in question. The members preferred collective bargaining when dealing with the traditional union concerns and joint labor-management efforts when quality of worklife issues were involved.

Ponak and Fraser (1979) surveyed 424 union activists in the private and public sectors in Canada regarding the best way to handle various labor-management issues. Four alternatives to handling issues were provided respondents which included joint labor-management programs, collective bargaining, public action and non-involvement. Their results indicated that joint programs, outside the bargaining area, were selected by a substantial majority as

the means for resolving productivity and quality of worklife issues. Collective bargaining was strongly approved for grievance handling, job security, earnings and fringe benefits. The main explanation given for the preference of joint programs was the belief that they would be more effective than collective bargaining for accomplishing nontraditional objectives.

These three studies provide some information on which particular issues union members perceive to be best handled by either collective bargaining or quality of worklife processes. However, the question still remains as to how and what issues are actually being dealt with through the QWL programs.

In addition to exploration of which issues should be handled through what process, another major concern with respect to QWL programs in unionized settings focuses on the union reluctance to wholeheartedly "jump on the bandwagon" in support of QWL programs. This reluctance has been attributed to several reasons and has been documented by researchers who conducted intensive interviews with union leaders (Burck, 1981; Cole, 1984; Greenberg and Glaser, 1980; Simmons and Mares, 1983; Zwerdling, 1980).

Included in the reasons provided by Simmons and Mares are some union members beliefs that work reform efforts are

primarily aimed at boosting productivity at the workers expense (i.e. through speedups). A second concern is that increased productivity leads to worker redundancy, if not for those workers directly involved, then for other employees. A third concern of union leaders is that autonomous work teams, Quality Circles, and Labor-Management Committees will become independent and competing representational structures making their own union leader positions expendable.

The nature of this research provides us with extensive anecdotal information and individual representatives' (of union organizations) opinions and speculations regarding reluctance to participate. To date, no systematic attempts have been made to ascertain, from a broad sampling of union officials, why their unions may choose not to participate in QWL efforts. [18]

Another focus of research addresses common problems in implementation of QWL efforts in unionized settings. Several authors, based on their experience in consulting with organizations regarding QWL programs, have reviewed these problems (Goodman, 1980; Greenberg and Glaser, 1980; Lawler and Drexler, 1978; Rosow, 1979; Walton, 1975). Problems so cited have included such issues as the lack of

top level support; the reluctance of supervisors to relinquish power or authority to employees (Klein, 1984); inadequate or inappropriate training in problem-solving skills for rank-and-file employees (Greenberg and Glaser, 1980); the appropriateness or inappropriateness of various types of rewards associated with participation; and concerns regarding sustaining momentum and interest in the QWL effort over time. The literature discussing problems associated with implementation is also in its early stages. It is hoped that as programs become more mature, some forms of systematic analysis across firms with respect to common problems of QWL programs will be forthcoming.

A final area of concentration, by the research community, on QWL programs in unionized settings, involves issues in research and evaluation. There appear to be two general research postures of analysis: those which describe QWL programs with respect to the processes of organizational change occurring within the organization (Goodman, 1979; Trist, Susman, and Brown, 1977), and those which describe and attempt to evaluate the outcomes associated with QWL programs (Biasetti and Martin, 1979; Katz, Kochan, and Gobreille, 1983; Kochan, Katz, and Mower, 1984; Rosenberg and Rosenstein, 1980; Schuster, 1984).

Research efforts of the latter type have largely

attempted to measure QWL's relationship to productivity. For example, Katz, Kochan and Gobreille (1983) analyzed the relationship among plant-level measures of industrial relations performance, economic performance and QWL programs. Using pooled time series analysis and cross sectional data for 18 General Motors plants over a nine year period, their empirical results show strong associations between industrial relations and economic performance measures and limited support for their hypothesis that QWL efforts improve both kinds of performance. Schuster (1983) examined the effects of union-management cooperative programs on productivity and employment by collecting productivity and employment data for nine manufacturing plants at monthly time intervals over a four to five year period. Using regression analysis of the time-series data and supplementing his analysis with interviews of some key participants in the QWL efforts, he argued that, after introduction of the programs, productivity increased in six of the firms. Rosenberg and Rosenstein (1980) in an intensive case study analysis of a worker participation plan in a unionized foundry concluded that an increase in the level of participative activity was associated with an increase in productivity. These three studies highlight the

attempt to directly tie QWL to productivity improvements, and measure, through differing methodologies, the effects of the QWL program.

Studies which have focused on productivity measurement are certainly one way to attempt to evaluate QWL programs; however, other researchers have developed and are utilizing additional criteria to evaluate QWL programs (e.g. Wood, Hull, and Azumi (1983). Although Wood et al. refer specifically to Quality Circles, their criteria appear to be applicable to other QWL efforts. The criteria include:

Productivity:	Group/Departmental Performance Rates; Individual Performance Rates; Standardized Unit Costs
Product Quality:	Reject Rates; Client Evaluations
Cost Savings:	Material/Labor Costs; Machine Maintenance Costs; Wastage Costs
Attendance:	Absenteeism; Turnover; Attendance at QC/QWL meetings
Worker Morale:	Satisfaction with supervisor; Satisfaction with co-workers; Satisfaction with work content; Satisfaction with organization; Satisfaction with QC [or any QWL effort]

All five above categories represent outcomes which are of interest to management. Obvious is the omission of any

effects of QWL on a union, or issues that may be of specific interest to a union.

Staw (1984:631), recently reviewed organizational behavior outcome variables traditionally assessed by researchers. He found these to be job satisfaction, absenteeism, turnover, and performance. He states: "..to date the outcomes of interest to researchers in the field have been extremely limited, and even the way these outcomes have been conceptualized have been restrictive....these four traditional variables can [and should] be revitalized by taking on a different point of view (e.g. employees as opposed to management) or some alternative theoretical perspective."

Emphasis on outcome evaluation has, thus far, mainly focused on the above mentioned variables as they relate to QWL programs in unionized settings. The recent work of Kochan, Katz, and Mower (1984) however, includes as one focus of their study on worker participation an examination of rank and file views of these programs. Their findings are based on survey data collected from rank and file members in five national unions involved in different types of worker participation programs.

In a comparison of union participants and non-participants in QWL efforts in five firms, they attempt to

assess differences, if any, of these union members' attitudes toward participation. Based on the assumption that worker participation programs are designed to increase employee influence, they assess the perceptions of desired influence on the issues, cited below, and actual influence experienced as a result of participation. For the non-participants they assess the perceptions of desired influence and actual influence without the experience of participating in the QWL effort.

The three general areas of potential influence for participation include topics related to "QWL Concerns", "Bread and Butter Concerns", and "Strategic Concerns". They are:

<u>QWL Concerns</u>

-The way the work is done--methods and procedures;
-The level of quality of work;
-How fast the work should be done-the work rate;
-How much work people should do in a day;
-Who should do what job in your group or section;

<u>Bread and Butter Concerns</u>

-When the work day begins and ends;
-Pay scales or wages;
-Who should be fired if they do a bad job;
-Who should be hired into your work group;
-Handling complaints and grievance;
-Who gets promoted;

Strategic Concerns

-The use of new technology in your job;
-Management salaries;
-Hiring or Promotion to Upper Management;
-The selection of your supervisor;
-Plant expansions, closings, new locations;
-The way the company invests its profits or spends its money;

In assessing the desired influence and actual influence perceived with respect to these issues by participants and non-participants the survey concluded that "all workers report having considerably less actual say or influence over QWL and other issues than they prefer to have, regardless of whether or not they are currently involved in a worker participation process...apparently the worker participation processes have not significantly altered the degree of actual say or influence workers experience on the job." (Kochan, Katz, and Mower 1984:112)

The results of this study provide valuable information regarding how much influence participants and non-participants would like to have over the three major areas of concerns identified. However, as will be shown, the structure and design of the majority of current QWL programs (Quality Circles) prohibit participants' influence in several areas included in the questionnaire.

Most QWL programs in union settings, excluding autonomous work-group forms of QWL, explicitly state through a labor-management letter of agreement that these traditional bargaining issues should be left to the collective bargaining process.[19] Where a firm is non-union, a management policy usually exists that restricts discussion of these issues in QWL problem-solving groups.[20] Therefore, even though individuals may desire more influence over these issues, the actual opportunities in the QWL programs for gaining influence in these areas is, by design of the programs, restricted.

The "Strategic Concerns" category and its respective statements may also be loosely related to the majority of QWL programs. Other than autonomous workgroups, where these issues may be discussed, most QWL programs (Quality Circles and Problem-Solving groups) have as their mission, a focus on issues that affect the immediate work environment. The structure and monitoring of these groups, generally by a management representative (or facilitator), keeps the groups addressed on particular issues relevant to the immediate work environment. It is highly unlikely that these types of groups would ever discuss (or be allowed to) management salaries, plant closing issues, or the way the company invests its profits. [21]

It is no surprise, therefore, that given these conditions, the comparisons of union participants and non-participants reflect only marginal and non-significant results in actual influence experienced with respect to these issues, as the authors state. Interpreting these findings as indicating, in part, what these programs are not providing for participants, the question remains as to what it is that results from participation.

Another focus of the Kochan, Katz, and Mower (1984) study is an attempt to determine whether participants or non-participants have differing perceptions of the nature of their jobs. Based on the assumption that QWL processes can be viewed as strategies for allowing workers to learn new skills, increase their freedom on the job, provide more control over the pace and content of their work, and provide more information on how their work fits into the overall production process, they evaluated the two groups on these job dimensions. The study concludes that there is some evidence that these QWL programs are improving the extent to which workers see their jobs as challenging, offering opportunity to learn and utilize new skills and abilities, and provide more freedom. That evidence, however, is as yet, only suggestive. Further, the questions reflect

outcomes of participation from an apparent management perspective and, as such, leave incomplete understanding of what outcomes workers identify with the QWL process.

The entire study, however, still leaves a major question for further exploration. In summing up their research, Kochan et al. (1984:186) state:

> "...the central implication of this research is that for worker participation processes to survive economic and political obstacles they encounter over time, each party must see these processes as contributing to their separate organizational interests. While improvements in the psychological rewards workers derive from their jobs are necessary conditions for success, psychological rewards alone do not appear to be sufficient to maintain commitment from management, the unions, its leaders, or rank and file workers."

From the rank and file perspective, therefore, if there is no difference between participants' and non-participants' views on influence, then just what outcomes, if any, are perceived to result from participation?

Since the "bread and butter" concerns, as previously mentioned, such as pay rates, job classification, job design, job seniority, and issues relating to work rules and conditions, are usually reserved for discussion under the collective bargaining agreement, what might individuals seek to gain by such participation? If, as Kochan indicates, psychological rewards are necessary but not sufficient, then other outcomes must surely be associated with participation.

The reviewed literature reveals that a need exists for further systematic study of QWL efforts in both union and non-union firms. In particular, research is needed which addresses issues surrounding the question of what outcomes individual participants in QWL programs identify resulting from participation. As Staw (1984) has pointed out, outcome conceptualization is needed from a different point of view. The methodology presented in Chapter III is designed to counter act "management focused" research and outcomes by systematically measuring worker identified outcomes, both expected and actual, and make comparison between union and non-union participants.

In addition to a detailed description of the methodology utilized to address questions concerning individual rank and file perceptions of QWL participation, Chapter III provides the description of sites where the research was carried out.

End Notes

[1] For historical information on labor-management cooperation see E.J. Lever and Francis Goodell, Labor-Management Cooperation, (New York: Harper & Brothers, 1948); James J. Healy, ed., Creative Collective Bargaining, (Englewood Cliffs, N.J.: Prentice Hall, 1965).

[2] For an overview of current labor-management efforts see John Simmons & William Mares, Working Together, (New York: Alfred A. Knopf, 1983); for an in-depth discussion of quality of worklife see Louis Davis and Albert Cherns, Quality of Working Life, Volume I, New York: The Free Press, 1975.

[3] A description of the Labor-Management Cooperation Act is found in chapter 13 in Thomas Kochan, Collective Bargaining and Industrial Relations, (Homewood, Ill: Irwin, 1980).

[4] For a description of the evolution of the Quality of Worklife term over the past fifteen years see David Nadler and Edward Lawler, "Quality of Worklife: Perspectives and Directions,"Organizational Dynamics, Winter 1983, 20-30. For additional information see Joel Cutcher-Gershenfeld, "QWL: A Historical Perspective", Worklife Review, Vol. II, Issue 2, (September, 1983): 16-24.

[5] For a discussion of labor-management committees with respect to productivity see Thomas Cummings and Edward Molloy, Productivity and the Quality of Work Life, New York: Praeger, 1977.

[6] These committees are elaborated on in Irving Siegel and Edgar Weinberg, Labor-Management Cooperation: The American Experience, W.E. Upjohn Institute for Employment Research, Kalamazoo, Michigan, 1982. For an overview of the activities related to these committees see Sanford Jacoby, "Union Management Cooperation in the United States: Lessons from the 1920's", Industrial and Labor Relations Review, Vol. 37, No. 1, October 1983, 18-33.

[7] For an overview of issues related to the Scanlon plan see Fred Lesieur, Douglas McGregor, & Joseph Scanlon in The Scanlon Plan: A Frontier in Labor-Management Cooperation, F. G. Lesieur (Ed.), (Cambridge: The MIT Press), 1958. For information on Scanlon Plans today see, C.F. Frost, J. H. Wakely, and R.A. Ruth, The Scanlon Plan for Organization and Development: Identity, Participation, and Equity, (Lansing: Michigan State University Press, 1974.)

[8] An elaboration of major principles associated with job enrichment can be found in Frederick Herzberg, "One More Time How Do You Motivate Employees", Harvard Business Review, Jan-Feb, 1968.

[9] For descriptions of these programs see Curt Tausky and E. Lauck Parke, "Job Enrichment, Need Theory, and Reinforcement Theory", 1976, in Robert Dubin (Ed.), Handbook of Work, Organization and Society (Chicago: Rand McNally, 1976) 531-565. For a description of the AT&T program see Robert Ford, "Job Enrichment Lessons From AT&T", Harvard Business Review, Jan-Feb, 1973: 96-106.

[10] The Japanese style of management and, in particular issues relating to Quality Circles, is described in William Ouchi, Theory Z, (New York: Avon Books, 1981); see also Richard Pascale and Anthony Athos, The Art of Japanese Management, (New York: Warner Books, 1981).

[11] Literature specifically focusing on the design and implementation of Quality Circles is extensive. A comprehensive description of the processes involved can be found in William Mohr and Harriet Mohr, Quality Circles: Changing Images of People at Work, Reading, Massachusetts: Addison-Wesley Publishing Company, 1983. General descriptions of the Quality Circle processes is also presented in Frank M. Gryna, Quality Circles: A Team approach to Problem Solving, New York: Amacom (A Division of American Management Association), 1981; Phillip Thompson, Quality Circles: How to Make Them Work in America. New York: Amacom (A Division of American Management Association), 1982.

[12] Several writers have discussed these programs. For an overview of both efforts see Daniel Zwerdling, Workplace Democracy (New York: Harper and Row, 1980). For evaluative comments and results of the Rushton experiment see Eric Trist, Gerald Susman, and Grant Brown, "An experiment in Autonomous Working Groups in an American Underground Coal Mine, Human Relations, Vol. 30, No.3, 1977: 201-236; Paul S. Goodman, "Realities of Improving the Quality of Worklife," Labor Law Journal, 31, 1980: 487-494; Ted Mills, "Altering the Structure in Coal Mining: A Case Study", Monthly Labor Review, vol.99, October, 1966: 3-10. For the General Foods Topeka Plant see in addition to Zwerdling, Richard Walton, "How to Counter Alienation in the Plant," Harvard Business Review, Nov-Dec, 1972: 70-81.

[13] For an in-depth coverage of socio-technical systems theory see Gerald Susman, Autonomy at Work, (New York: Praeger, 1976). Also see chapters 2-4 in Thomas G. Cummings and Edward Molloy, Improving Productivity and the Quality of Worklife, (New York: Praeger, 1977); and Doc. E. Thorsrud, "Sociotechnical Approach to Job Design and Organizational Development", Management International Review, 8 (4-5), 1968: 120-131; Daniel Denison "Sociotechnical Design and Self-Managing Work Groups: The Impact on Control", Journal of Occupational Behavior, vol. 3, 1982: 297-314.

[14] For a description of this study see E. Trist and K. Bamforth, "Some Psychological Consequences of the Longwall Method of Coal Mining,", Human Relations, (4), February, 1951: 3-38.

[15] An elaboration of these models appears in Chapter 2, Michael Schuster, Union-Management Cooperation: Structure - Process- Impact, The W. E. Upjohn Institute for Employment Research (Kalamazoo, Michigan, 1984).

[16] A description of the parallel organization concept is provided in Barry Stein and Rosabeth Kanter, "Building the Parallel Organization: Creating Mechanisms for Permanent Quality of Worklife", The Journal of Applied Behavior Science, Vol. 16, No. 3, 1980, 371-388.

[17] For a discussion of these issues see Glenn Watts, "QWL and the Union: An opportunity of a threat?", Work Life Review, Vol. I, Issue 2, Nov. 1982, 1-6; Charles Heckscher in "The Quality of Work Life Process of AT&T and the Communication Workers of America: A Research Study After Three Years", CWA working paper, 1984, provides a discussion of how one company AT&T has handled these issues.

[18] For a more extensive discussion of these issues see Pamela D. Sherer, "Quality of Worklife Programs in Unionized Settings: Issues for Further Exploration," working paper, School of Management, University of Massachusetts, July, 1984.

[19] A discussion of these issues appears in Pamela D. Sherer, "Quality of Worklife Programs in Unionized Settings: Issues for Further Exploration," working paper, School of Management, University of Massachusetts, July, 1984.

[20] Visits to several firms confirms the fact that each firm has a specific set of guidelines which restricts the discussion of specific topics for workers involved in the QWL program. The guidelines specifically state that pay, benefits, bonus issues will not be discussed in "problem-solving" groups.

[21] Quality Circle programs in the United States have included the role of a "facilitator" for assisting and guiding the groups in problem-solving activities. One of the major responsibilities of the "facilitator" is to insure that the group follows the guidelines designed, by management, in the operation of the Quality Circles program. Since most programs specifically restrict the discussion of topics mentioned previously, the facilitator serves as a management "watchdog" in most cases.

C H A P T E R III

METHODOLOGY

Research Questions

As mentioned above, this research focuses on the outcomes that participants in Quality of Worklife programs associate with program involvement. Although participation in programs may include all levels in the organization, the concentration here is on those rank and file participants who do not hold managerial positions. Two union and two non-union firms are sampled.

Both qualitative and quantitative research methodology is employed in the present study. It is designed to explore the following questions:

1. What outcomes do rank and file participants identify with QWL participation?

2. Has the perception of outcomes identified by participants changed over time? That is, are the outcomes participants expected from participation the same as the outcomes they actually experience from participation in the programs? Do expected outcomes differ from actual outcomes?

3. Do rank and file members in union and non-union firms have similar perceptions about the outcomes associated with participation? If so, could it be that, even though programs differ as to content and design, participants generally experience similar outcomes? In any case, what are the explanatory factors of similarities or differences that exist?

The following discussion elaborates on the research approach utilized in exploration of the above questions. A background information section highlights the process of selection of the four participating firms, and describes the development of the questionnaire which was administered in the four firms. Following the background information section there is: a description of the QWL programs in the four firms (two union and two non-union) participating in the study; a description of the questionnaire; and a discussion of issues related to questionnaire administration.

Background Information
Site Selection

Over a seven month period, seventeen firms with QWL programs were contacted and visited by the researcher. Included were manufacturing, service, and financial institutions located in Massachusetts, Rhode Island, and Connecticut. Contacts with companies were made in several ways including referrals by faculty members, acquaintances with various company personnel made at professional meetings focusing on QWL topics, and through "cold calls" made to organizations known to have QWL programs.

Depending on the site, visits provided the opportunity

to meet with QWL program coordinators, supervisors, rank and file participants (union and non-union); attend problem-solving groups (Quality Circle meetings), QWL steering committee meetings; and to attend management presentations (where problem-solving groups present, to management, recommended solutions to projects on which they have worked).

The site visits were intended to serve several purposes:

a) to become familiar with the various types of QWL programs and their implementation in organizations;

b) to identify specific issues, through interviews with QWL program participants, that needed further exploration and explanation in the QWL literature;

c) to begin to develop a questionnaire designed to capture the rank and file perceptions of outcomes associated with QWL participation--based on the interviews conducted at the sites;

d) to identify four sites (two union and two non-union) to participate in the study.

Site selection of the final four firms was based upon the following criteria:

a) the length of time that the QWL program had been in existence (programs of less than two years in existence were excluded);

b) the number of people participating in the program;

c) the type of QWL program (most programs visited were problem-solving group type programs and were similar in design and content);

d) the composition of program membership (programs needed to have rank and file participants--as managerial participants were excluded from the study);

e) The receptivity of the firm toward participation in the study. [1]

Descriptions of the QWL programs of the four participating firms appear below, and are summarized in Table 2.

The Sample

Descriptions of Quality of Worklife Programs of Firms Participating in the Study

Firm I

Firm I is a specialty material and chemical manufacturing plant located in the northeast. Its parent company has 34 major production facilities located in fifteen countries around the world.

Firm I employs a total of 750 employees of which 400 are hourly workers. Although there have been attempts at unionization at this site, the plant remains non-union.

The Quality of Worklife Program began in 1980 when a new President of this division of the company felt that employee participation was desirable in order to improve productivity and increase employee satisfaction. The initial program was started in departmental meetings, was

highly unstructured, and resulted in the realization of the need to structure a program for employee involvement.

In 1981 the Quality Circle program was officially launched and five manufacturing personnel were sent to a workshop for facilitator training. Following the training two pilot Quality Circles were initiated in management-selected departments in the plant. Management felt that the two pilot groups were successful and that the program could be expanded to other departments in the company.

The decision was made to move slowly with the development of the program in order that adequate training and preparation of facilitators/leaders could be offered. Since 1981, training has been provided for 30-35 leader/facilitators. Although most training has been conducted for individuals through workshops offered external to the company, there are tapes and material regarding Quality Circle skills and techniques available within the company.

Participants, other than leaders, have limited training opportunities available to them. The current Quality Circle coordinator is developing a four hour training program for group members.

Participation is voluntary for workers. However, supervisors function as group leaders, and are required to participate when a circle is formed. Circles are generally

initiated at the request of management or when individual supervisors decide they would like to address issues through the circle process.

Topics for discussion by Quality Circles are intended to focus on problems at the department level. Therefore, restrictions exist that prohibit discussions of wages, fringes, and any other conditions of employment.

There are no financial rewards associated with participation. Recognition for participation is in the form of dinner invitations and certificates. Employees have not asked explicitly for any form of financial rewards, and management does not currently plan to institute any such system.

Although the program has been in existence for approximately four years, the maximum number of circles at any time has been eight. Currently there exist four circles, and all are in manufacturing. Approximately 150 persons have been involved in circles since the beginning of the program.

There are no available figures on the cost of training and implementing the program, or on the total "cost-savings" associated with the program. Although the Quality Circle Coordinator indicated that "reasonable guestimates" could

be made, it appears that either of these two cost-related areas has not been of particular importance to management.

There have been approximately 25 projects completed by Quality Circle groups since the beginning of the program. Progress on development of a project is often slow. Reasons typically mentioned in most interviews with Quality Circle Coordinators are: 1) groups meet only once a week; 2) information gathering necessary for a project takes time; 3) since participation is voluntary not everyone who begins with a project continues in the circle; 4) workers have responsibilities other than circle projects; 5) leaders are inadequately trained or are weak; 6) difficulty in getting management together to hear Quality Circle presentations; 7) difficulty in getting information needed from other departments in the organization; and 8) lack of needed support from management in coordinating and organizing meetings.

Firm II

Firm II is a financial service institution (commercial bank) located in the northeast. Firm II employs a total of 3300 persons at several locations. The majority of the employees are paid by the week. Only a few, part-time, employees are paid by the hour. The company is non-union and there have been no significant attempts to unionize.

The Quality of Worklife program began in 1982 when the President of the company hired a Vice-President who was charged with the responsibility of designing and implementing productivity improvement programs. The Quality Circle program was launched as one such program designed to improve productivity. The program began by initiating six pilot quality circles in different departments within the organization. At the beginning, a steering committee composed of all department heads was organized to oversee the program. However, the committee currently is not meeting and the responsibility for the program rests with the Quality Circle Facilitator.

When the pilot program was launched in 1982, it was decided that the supervisor was to serve as the group leader; therefore, supervisory participation is not voluntary. However, participation for all other group members is voluntary.

The focus of the program is on departmental matters rather than on larger company-wide concerns. Problems discussed at Quality Circles concern general work-related issues. Topics which are restricted from discussion include issues or problems not within the scope of the department, pay, fringes, and other conditions of employment.

Training for the supervisor/group leader consists of attending a five day problem-solving workshop. For individual participants in the group, training is attendance at three one-half day sessions prior to participation in the Quality Circle program.

There are, currently, seven active Quality Circles in the company. These circles are all located within one division of the company.

Since the beginning of the program, there have been approximately one-hundred fifty participants. At any given time there are approximately six to ten circles functioning. The number of circles fluctuates so because several of the circles, when finished with a project, may decide not to meet again for several weeks; circles may work on a project and, when completed, disband; workloads are such that scheduling meeting times becomes so difficult that some groups simply do not meet.

Quality Circle presentations to management are given when the group completes a project. Management, represented at presentations, include all supervisors, middle management, and the division vice-president. Following a presentation individual participants are rewarded with certificates and dinners. Although in the initial stages of implementation a financial incentive was available for

participation (a percentage of total annual savings resulting from a project), currently that incentive system is changing. The reasons are that few quality circles seemed to benefit from the program, due to minimal dollar savings associated with their projects, and the development of another incentive system, company-wide, designed to reward individual contributions to the organization.

There are no dollar figures available that reflect the cost of training and implementing the program. Although costs can be stated for training, total cost data do not exist. Figures related to savings associated with quality circle projects are available per project, but many projects do not involve significant dollar savings. There are no accurate figures that reflect how the program has affected productivity.

Firm III

Firm III is a chemical manufacturing plant located in the northeast. Firm III is one of several plants owned by the parent company and operating worldwide.

Firm III employs a total of 1400 employees of which 900 are hourly-paid employees. The plant is unionized, with two unions represented.

In 1982 the Quality of Worklife program was initiated by a new plant manager. The plant manager was an advocate of employee involvement and selected a coordinator to explore the potential use of Quality Circles in the company. The coordinator organized a group to study the feasibility of instituting Quality Circles in the plant. Included in the group were union representatives. Although neither of the two locals' International Unions have supported Quality of Worklife programs, the local unions have taken a neutral position, neither openly supporting or rejecting the Quality Circle program. There have been no formal written agreements with the local unions, and the overall disposition taken by the unions could be characterized as "wait and see". Although no formal agreement exists, the President of one of the locals indicated that he personally felt that the Quality Circle program had allowed "extensive personal growth" for individuals. He cited such personal growth as one reason that involvement through Quality Circle participation had value for the union members.

Program focus is on departmental issues. The initial goals of the program, defined by the study committee, included increased employee satisfaction within the work environment, as well as increased productivity. According to the facilitator, the "message" sent out to employees

included an emphasis on "doing things better and more efficiently."

The Quality Circle program was launched with three Circles in particular departments where the coordinator "felt they would work". Although the unions were aware of the implementation of the program, they did not participate in its design. Based on the success of the original Quality Circles, the program was expanded to other departments within the company. The number of Circles fluctuates between twelve and twenty. Approximately 250 persons have participated in the program since its beginning.

The focus of the program has been on the identification of problems within specific departments. Issues which are restricted from discussion include those of pay, fringe benefits, and any other working condition issues which are handled through the collective bargaining process.

Participation in the program is voluntary, except for the supervisors who function as group leaders. Training in problem-solving skills has concentrated on the leader/supervisor who receives three days training when initially participating. The training for group participants is dependent on the leader who has access to training materials and tapes relating to problem-solving

skills.

There is no financial incentive associated with participating. Rewards for participating include mugs, shirts, jackets, and recognition though dinners and opportunities for workers to attend some workshops or conferences relating to Quality Circle participation. For leaders/supervisors participation is not formally included in their performance appraisal process.

Since the beginning of the program over fifty projects have been completed by Quality Circle groups. Some of the projects have resulted in cost-savings; others have made improvements in operations of the plant with limited cost-saving results.

There are no figures available on the costs associated with the program, and although "guestimates" are made as to the savings attributed to the program, no accurate figures are available.

A major problem exists with the functioning of the Quality Circle program in Firm III. The work schedule for the plant involves rotating shifts which are made up of different crews. This results in program participants not being able to meet regularly with a Quality Circle, as well as Quality Circles facing difficulty in scheduling any type of regular meetings. The Quality Circles faced with this

problem have the challenge of attempting to keep up the interest of individuals who may not be regular participants.

Firm IV

Firm IV is a specialty textile and wallcovering manufacturing plant located in the northeast. Its parent company has five other similar manufacturing facilities in the United States.

Firm IV has been unionized since 1975. The total employment in the plant is 244, of which 195 are hourly-paid employees. Employment has been relatively stable over the past ten years.

The Quality of Worklife program, in the form of Quality Circles, began in 1982 at the initiation of the Plant Manager, who had attended a manufacturer's conference where employee development was discussed. The Personnel Manager, along with an appointed Quality Circle Coordinator, set up an initial task force to discuss Quality Circle programs. Based on the recommendations of the committee, the Personnel Director requested funding from the corporate office to implement the program. The program was funded for two years.

The initial task force participants included the union President, who according to the Personnel Director, was informed that Quality Circles were to be implemented in the

company. Although the union was not involved in the design of the program, it was asked for cooperation regarding participation in the program.

There has never been a formal, written agreement between the union and management with respect to the Quality Circle program. However, included in an eleven person steering committee are two union members: the President and Chief Steward. The International Union has not supported Quality of Worklife Programs. The focus of the management-designed, problem-solving groups, is on discussion of departmental issues. As with Firm III, topics relating to pay, fringe benefits, and working conditions, are barred from discussion.

Implementation of the program began with the formation two pilot Quality Circles. Two departments were selected for these pilot Quality Circles, based on the perception by the Coordinator that positive results could be realized by the Quality Circles in the two departments.

Following the initiation of the pilot circles the program was expanded to other departments. The number of Quality Circles fluctuates between five and eight. Participation is voluntary except for supervisors who act as leaders. Initial training for supervisors involves three-day training by "professional" Quality Circle trainers at

off-site seminars. Participants are provided approximately thirteen one-hour training sessions in problem-solving skills. The training is conducted on company time by the Quality Circle Coordinator. Approximately seventy of the 244 employees have been involved in the program.

There are no financial incentives associated with program. However, dinners, jackets, and mugs are often given for recognition and appreciation by management. Participation is not formally tied to performance appraisal for supervisors.

The Quality Circles have completed approximately twenty projects since the initiation of the program. Although the cost-savings figures for the projects are available, the Coordinator indicated that such stated cost-savings do not reflect adequately the accomplishments of the Circles--because of the inability to capture "what the quality circles might have prevented (in terms of costs) from occurring." The Coordinator also has available the approximate costs of program implementation and training.

Table 2 provides a summary of the QWL program characteristics for the four firms.

TABLE 2

SUMMARY OF OWL PROGRAM CHARACTERISTICS FOR EACH FIRM

CHARACTERISTIC	FIRM I	FIRM II	FIRM III	FIRM IV
Union or Non-union	non-union	non-union	union	union
# of Employees	750	3300	1400	244
# of Hourly Employees	400	all/paid weekly	900	195
Type of Industry	manufacturing	financial	manufacturing	manufacturing
Yr OWL program began	1980	1982	1982	1982
Who Initiated	President	Vice-President	Plant Manager	Plant Manager
How Begun	2 pilot PSG*	6 pilot PSG	3 pilot PSG	2 pilot PSG
Program Goal	Increase Productivity	Increase Productivity	Increase Productivity	Increase Productivity
Program focus	Departmental Problems	Departmental Problems	Departmental Problems	Departmental Problems
** Restrictions on topics discussed at meetings	yes	yes	yes	yes
*** # of Problem-solving groups (PSG)	Between 5-8	Between 6-10	Between 12-20	Between 5-8
# of Participants	120	150	250	70
Steering Committee	no	no	yes	yes
Coordinator of Program	1 full time	1 full time	1 full time	1 full time
Participation voluntary	yes	yes	yes	yes
Supervisor role	Acts as leader	Acts as leader	Acts as leader	Acts as leader
Training:				
Supervisor/Leader	3 day training	5 day training	3 day training	3 day training
Group Members	4-6 hours	13 hours	train by leader	13 hours
Rewards:				
Financial	no	no	no	no
Certificates; dinners	yes	yes	yes	yes
Participation tied to Performance appraisal	no	no	no	no
# of Projects completed by PSG	approx 30	20	approx 50	approx 20
Cost figures available:				
Cost of Training and Program implementation	no	no	no	no
Cost figures related to project recommendations	yes/by project	yes/by project	yes/by project	yes/by project

* PSG (Problem-Solving Group)
** Topics restricted for discussions include wages, benefits, and other conditions of employment.
*** Indicates total # of participants to present.

Qualitative Measures

In addition to the interviews with QWL program coordinators, which provided the descriptive characteristics of the participating firms presented in Table 2, semi-structured interviews were conducted with a total of fifteen rank and file participants, five each from three of the four firms included in the study. In the fourth firm, interviews with rank and file participants were not scheduled due to the difficulty experienced by the QWL Coordinator in arranging for individuals to be interviewed.

Each semi-structured interview lasted approximately one-half hour. Participants were asked a series of questions designed to solicit information with respect to the following issues: 1) why they chose to participate; 2) what they expected to gain from participation; 3) what changes participation may have contributed to their job; 4) why they continued to participate. The questions used for the interviews appear in Appendix A.

Interviews were not tape recorded. During the interview the researcher took notes of the responses. Following each interview detailed notes were recorded.

Information gathered from the interviews helped in designing the questionnaire. It also provided data to be

utilized in supplementing the findings of the questionnaire (described below). Although the quantitative data gathered through the questionnaire are used as the primary source for analysis, the qualitative data are used to enhance the questionnaire findings, and will appear in Chapter 4.

Quantitative Measures

The development of the questionnaire (Appendix B) was based on qualitative data gathered through site visits and interviews with both union and non-union participants in QWL programs.

The questionnaire uses the phrase, "problem-solving groups", to refer to the QWL programs. This phrase was chosen because of the researcher's experience gained from site visits. Firms refer to their programs with differing nomenclature, but the phrase "problem-solving groups", serves as the generic term describing all programs included in the study.

Questionnaire Content

The questionnaire (Appendix B) is divided into four sections. The first thirty-one items are the participant-generated "outcome statements." The outcome statements are based on the interviews with participants in the QWL programs. Detailed notes of the content of the interviews

were reviewed as to the outcomes participants had associated with participation. A list was compiled of participant identified outcomes. Outcomes which were similar in content and/or appeared to be conceptually linked to one another were identified and grouped together. Individual items within each grouping were reviewed for repetition of content. Where repetition occured, one statement was selected to represent the concept/content. A total of 31 outcomes emerged from this process. Final wording of the outcome statements included in the questionnaire attempted to model the way in which the interviewees themselves had described the outcomes.

In assembling and reviewing the final outcome statements an attempt was made to group them into conceptually meaningful categories. This was done because such apriori conceptual groupings were apparent, and also because such groupings would better organize and focus data analysis by concentrating on clusters of outcomes rather than 31 "discrete items".

Six conceptual groupings were identified. The groupings were labeled as follows: 1) Collective Influence; 2) Personal Skill Development; 3) Negotiable Collective Bargaining Issues; 4) Information About Job; 5) Information About Company; and 6) Feelings About Work. Table 3 identifies the individual statements which compose the six separate category groupings.

TABLE 3

Outcome Statements Grouped by Category[a]

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1)Collective Influence
- (10) Increased awareness by management about particular problems involved in my own job
- (11) Increased awareness by management about problems involved in my particular workgroup
- (23) Projects proposed by groups to be taken more seriously by management than those previously proposed by individuals
- (24) Issues previously unnoticed by management to be made more visible by problem-solving groups
- (25) Problem-solving group activity to be more effective than individual activity, in influencing management to implement change in the work environment.
- (26) Problems concerning my immediate work area to be discussed by my problem-solving group

2)Personal Skill Development
- (12) Formal training in group problem-solving skills (such as brainstorming, communication skills, etc.)
- (13) Formal training in statistical skills useful in group problem-solving
- (14) Training in specific job-related skills useful to perform other different jobs in the company
- (15) Improvement in my own speaking and writing skills resulting from group participation
- (17) Personal contact with more people in other parts of the company
- (19) Increased confidence in my ability to get along with and influence others
- (20) Increased awareness of my personal contribution to the company by upper management

3)Negotiable Collective Bargaining Issues
- (16) Extra income from participating (pay raise, bonus, other financial incentives)
- (18) More opportunities for promotion in the company
- (21) Increased job security because participation makes the company see me as more important than before

- (22) Increased job security because my activity in problem-solving groups contributes to better decision-making and therefore makes the company more profitable
- (27) Issues concerning my supervisor's performance to be discussed by my problem-solving group
- (29) Items concerning the design of individual jobs to be discussed by my problem-solving group

4) Information About Job
- (1) Receipt of more information about how my job fits into overall production process
- (2) Receipt of more information about how other people's jobs relate to what I do on my job
- (3) Receipt of more information about the product(s) I am involved in producing
- (5) Receipt of more information on how decisions are made which directly affect my own work group

5) Information About Company
- (4) Receipt of more information on how decisions are made at different levels of the company
- (6) Receipt of more information on how my company compares to others making similar products
- (7) Receipt of more information on ways to improve product quality
- (8) Receipt of more information on how pay is determined in my company
- (9) Receipt of more information on the financial conditions of the company

6) Feelings About Work
- (28) Increased trust among workers and management as a result of problem-solving group activity
- (30) Increased positive attitude toward my job as a result of cooperative activity with my problem-solving group
- (31) Increased morale as a result of management support of my group's project recommendations

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[a] (Numbers in parenthesis refer to corresponding statements on questionnaire)

These six category groupings form the basis for the analysis of results of the questionnaire in Chapter 4. Section I of Chapter IV reports the results for the internal consistency estimates (coefficient alphas) for these groupings.

The responses from the first 31 outcome statements serve as a first step in addressing one of the major questions in the study: "What outcomes do individual rank and file participants identify with QWL participation?"

There were two types of responses called for in each of the thirty-one outcome statements. The first response was to the question "Before participation in problem-solving groups, to what degree did you expect this outcome to happen?" The second response was to the question "After participating in problem-solving groups, to what degree has this outcome actually happened?" Participants were asked to respond to each of these questions, for each outcome statement, on a Likert format scale (1=not at all; 2=slight degree; 3=moderate degree; 4= high degree; 5=very high degree). This "expected vs. actual" format of perceived outcomes served as a means of addressing a second major question of the study: "Do expected outcomes differ from actual outcomes?"

The final major focus of the study addresses the question, "Do rank and file members in union and non-union firms have similar perceptions about outcomes associated with participation?"

The presentation of findings which explore this question appears in Chapter 4 along with explanation of the various statistical techniques utilized in the analysis.

In addition to the thirty-one outcome statements, the second section of the questionnaire includes two questions related to satisfaction with participation in the problem-solving group process. The questions are: "All in all, how satisfied are you with what you have gotten out of participating in the problem-solving groups?" and, "All in all, how satisfied are you with the way problem-solving groups have worked out so far?"

Because the nature of these questions differs from that of the thirty-one outcome statements, respondents were asked to respond on the following Likert format: 1= very dissatisfied; 2= dissatisfied; 3=satisfied; and 4= very satisfied.

The third section of the questionnaire includes three open-ended questions: 1) "What is the best (most positive) result from participating?" 2) "What is the worst (most negative) result from participating?" and 3) "How could your

problem-solving group function better?" These questions provide an opportunity for participants to elaborate on their perceptions of the problem-solving groups, as well as allowing them to identify any issues related to outcomes that might have been overlooked.

The fourth section in the questionnaire provides demographic information regarding the individual participants.

Review of the Questionnaire

Once developed, the questionnaire was reviewed by a group of QWL program participants which included coordinators and rank and file participants. The questionnaire was reviewed for content as well as for clarity of instructions. Modification of wording was made to improve the instructions and individual outcome statements.

Originally, a pretest of the questionnaire had been planned. However, such pretest became problematic for the following reasons: first, difficulty involved in obtaining cooperation from sites precluded using an agreed upon site for a pretest; second, the sheer "smallness" of numbers of individuals participating in programs restricted using even a sub-sample from a cooperating firm. The review of the

questionnaire by the coordinators, as well as other representatives (steering committees, etc.) of the cooperating firms, served at least as a second-best check of content of the questionnaire.

Questionnaire Approval and Administration

Prior to questionnaire administration in each firm, various forms of approval were needed. In two firms, meetings with the steering committees that oversee the program were conducted. Representatives from upper management, supervisors and the union were members of each of these steering committees. In another firm, approval was issued by the QWL coordinator in conjunction with the Personnel Manager. In the fourth firm approval was given by the QWL coordinator.

The questionnaires were distributed at QWL problem-solving meetings by the program coordinators in the respective firms. Although the researcher had offered to distribute the questionnaires, the coordinators indicated that since they attended the meetings and since meetings were at different times during the week, it would be easier for them to distribute the questionnaire.

All QWL coordinators indicated that problem-solving group participants must be given the option of not filling out the

questionnaire. This would be consistent with the voluntary nature of problem-solving groups. Coordinators pointed out that, because of the voluntary nature of the problem-solving process, not everyone attends all meetings. It was decided that only those in attendance would have the option of filling out the questionnaires. Coordinators indicated it would take too much time to locate others who were not in attendance at meetings.

In each firm the coordinator identified, for the researcher, those problem-solving groups which were composed of rank-and-file participants. Only those groups were to be given the questionnaire.

The instructions indicated that, when finished, the participants were to place the questionnaire in the accompanying envelope, seal it, and return it to the University of Massachusetts representative (in each of the four firms the coordinator served this function). Coordinators were provided a larger mailing envelope in which to place the collected questionnaires and return to the researcher. Coordinators were asked to seal the mailing envelope in view of the respondents and to ask one of the respondents to place it in the mailing area of the company. All of the above instructions were designed to demonstrate

the confidentiality of the respondents' answers.

Chapter IV provides internal consistency measures related to the questionnaire, description of the statistical techniques used for the analysis of data, and presentation and discussion of results.

Endnotes

[1] Although several firms initially indicated a willingness to participate in the study, gaining final agreement for participation with some firms was problematic for several reasons. These included: 1) QWL programs were experiencing declining participation due to layoffs; 2) firms were experiencing labor-management conflicts which resulted in the QWL program temporarily being placed "on hold" until conflicts could be settled; 3) resistance to some of the contents of the questionnaire which company representatives felt could raise participant expectations; 4) the perceived time demands associated with questionnaire administration and interviews.

C H A P T E R IV

RESULTS

The following presentation and discussion of results is in four sections. Section 1 provides information on size of the sample, response rates, and other demographic characteristics. Section 2 provides the results of the internal consistency estimates for groupings of the 31 outcome statements in the questionnaire. Section 3 supplies results and discussion of findings with respect to the outcome groupings. In addition to the presentation and explanation of quantitative results for each category grouping, qualitative data from the fifteen personal interviews are utilized, to further explore the quantitative where appropriate.

The fourth section presents the results of the open-ended questions and the two questions relating to participant satisfaction with the QWL program.

Section 1--The Sample

The number of responses to the questionnaire used for analysis was 151--composed of 78 union responses and 73 non-union responses. Table 4 indicates the approximate number

of problem-solving participants in each of the four QWL programs at the time of the study, and the number of returned questionnaires for each firm.

TABLE 4

SAMPLE SIZE AND RESPONSE RATES BY FIRM

	NON-UNION		UNION	
	Firm I	Firm II	Firm III	Firm IV
Approximate Number of Rank and File Participants at The Time of the Study	65	75	90	60
Number of Returned, Usable Questionnaires	31	42	30	48
% of Rank and File QWL participants included in the study	47	56	33	80

Six returned questionnaires (2 union and 4 non-union) were not used for analysis, and are not included in the total number of 151. These questionnaires either 1) had incomplete responses (participants did not fill out either the expected or actual parts of the questionnaire); 2) were returned completely blank.

Descriptive characteristics of union and non-union respondents taken from part IV of the questionnaire appear in Table 5.

TABLE 5

DESCRIPTIVE CHARACTERISTICS OF RESPONDENTS

CHARACTERISTIC	UNION	NON-UNION
Total # of Respondents	78	73
% male	83.3	66.3
% female	16.7	33.7
Years with firm by %		
0-2 yrs	19.2	19.2
2-4 yrs	25.6	26
4-6 yrs	33.3	23.3
6-8 yrs	6.4	11
8-10 yrs	7.7	8.2
10 + yrs	7.7	12.3
Age Category by %		
18-25	19.2	20.5
25-30	25.6	20.5
30-35	20.5	21.9
35-40	12.8	15.1
40-45	15.4	15.1
45-50+	6.4	6.8
Length of Participation by %		
1 yr or less	43.6	42.5
1 to 2 yrs	48.7	46.6
over two yrs	7.7	11

Table 5 indicates that union and non-union respondents were nearly identical except for sex. Overall, the majority of respondents in both union and non-union firms were thirty-five years old or younger and had been with the company six years or less. Non-union respondents, however, had slightly more tenure with the company.

Section 2--Internal Consistency Measures

The test of internal consistency (coefficient alpha) was applied to the six conceptual category groupings: 1) Collective Influence; 2) Personal Skill Development; 3) Negotiable Collective Bargaining Issues; 4) Information About Job; 5) Information About Company; and 6) Feelings About Work. The internal consistency estimates in Table 6 have been calculated separately for the expected responses and the actual responses for the six category groupings.

TABLE 6

INTERNAL CONSISTENCY ESTIMATES[a]

Grouping	Expected Outcome n=151	Actual Outcome n=151
Collective Influence	.92	.87
Personal Skill Development	.86	.84
Negotiable Collective Bargaining Issues	.81	.75
Information About Job	.76	.73
Information About Company	.78	.73
Feelings About Work	.88	.78

[a] Coefficient Alpha

The Alphas in Table 6, which range from .73 to .92, indicate that the items within the clusters do group together in consistent ways. As a double check on this apriori grouping, results from the questionnaire were factor analyzed. Factor analysis results appear in Appendix C. In general, they are fairly consistent with the apriori conceptual scheme, and suggest, in combination with the coefficient alphas, that proceeding with the six original groupings is appropriate.

Section 3--Outcome Grouping Analysis

Utilizing the six outcome category groupings (Collective Influence, Personal Skill Development, Negotiable Collective Bargaining Issues, Information About Job, Information About Company, and Feelings About Work), statistical analyses (described below) were performed on each of the groupings in order to explore the two major questions: "Do expected outcomes differ from actual outcomes?" and "Do rank and file members in union and non-union firms have similar or differing perceptions about the outcomes identified with participation?"

In order to address both of these questions, the six category groupings and the respective individual outcome statements have been analyzed using several statistical techniques. The presentation of results begins with the reporting of union and non-union mean scores for expected and actual responses for each of the six groupings. These results provide an overall starting point for analysis by addressing whether expected and actual responses differ for union and non-union participants.

Following the discussion of mean score analysis is the results for the Collective Influence category. Explanation of statistical techniques utilized for the purpose of exploring differences between expected and actual, and union and non-union responses is included. Results of Multivariate Analysis of Variance (MANOVA) and Multiple Discriminant Analysis (MDA) applied to the six category groupings are presented and explained. Utilization of both of these statistical techniques allows for exploration into which individual outcome statement(s) in each category accounts for any differences which may have been found between union and non-union participants and/or expected and actual responses.

In addition to the table results, where appropriate, the results from qualitative data will be presented in the discussion of each category grouping.

Table 7 presents the means for each of the six outcome categories for union and non-union responses respectively. The individual means for all 31 outcome statements for union and non-union respondents appear in Appendix D.

Hotelling's T square and associated p values are reported for the expected vs. actual comparisons in Table 7. The Hotelling's T square is a test of the equality of group means of several variables simultaneously.

Table 7 results indicate that for union responses there is a statistically significant difference between expected and actual outcomes in three areas: 1) Collective Influence; 2) Personal Skill Development; and 3) Information About the Company. In all three groupings, the actual outcomes were greater than what participants expected. Non-union responses indicated a significant difference between expected and actual on two outcome groupings: 1) Collective Influence and 2) Personal Skill Development. Again, for both union and non-union groups actual outcomes exceeded the expectations of participants.

TABLE 7

COMPARISONS OF EXPECTED VS. ACTUAL MEANS FOR UNION and NON-UNION RESPONDENTS ON SIX OUTCOME GROUPINGS

OUTCOME GROUPING	EXPECTED	ACTUAL	HOTELLING'S T SQUARE	P	EXPECTED	ACTUAL	HOTELLING'S T SQUARE	P
	UNION				NON-UNION			
	$\bar{X}$	$\bar{X}$			$\bar{X}$	$\bar{X}$		
COLLECTIVE INFLUENCE	2.82	3.31	14.63	.03	3.03	3.48	21.26	.00
PERSONAL SKILL DEVELOPMENT	2.52	2.90	27.48	.00	2.60	2.88	32.25	.00
NEGOTIABLE COLLECTIVE BARGAINING ISSUES	2.15	2.14	2.18	.90	2.05	2.02	7.23	.32
INFORMATION ABOUT JOB	2.83	3.10	7.66	.11	2.85	2.97	4.24	.35
INFORMATION ABOUT COMPANY	2.42	2.70	12.13	.04	2.51	2.56	6.82	.25
FEELINGS ABOUT WORK	2.72	2.83	3.53	.32	2.77	2.88	5.85	.12

The results in Table 7 serve both as a starting point and an overview for analysis. In order to fully explore the relationship between expected and actual responses and union and non-union membership for each category grouping, MANOVA and MDA were applied to each of the six outcome groupings. A description of these techniques appears below in the presentation of results for the first grouping discussed, Collective Influence.

Collective Influence

> "I've been here 19 years...the project our group worked on was about the lighting in the plant. We have complained for years that we needed more lighting to do the maintenance on the machines. It got so bad we had flashlights in our mouths at night to see behind them. Our group figured out what needed to be done, what it would cost, and talked to everyone [plant-wide] that could help us with it [the project]. We really did our homework...when we gave our management presentation we had all the answers. They didn't have much choice--but to approve it even though it cost around $20,000. We had done all the work...they only needed the contractors."
>
> Union Respondent
> 19 years with company.

The above quote highlights major issues surrounding the effects of collective influence resulting from problem-solving group participation. In interviews, most participants described problem-solving activity as a means for prompting management to publicly acknowledge existing

problems and, hopefully, to follow-through with actions to solve problems. Participants' comments, as well as results from the questionnaire, indicate that a sense of collective influence is an outcome relatively strongly associated with problem-solving group activity. As Table 7 indicated, there are differences for both union and non-union workers between expected and actual outcomes in the collective influence area.

In order to explore in detail where differences occur between union and non-union responses, as well as expected and actual outcomes, the following tables of results are presented.

1. Presented in Table 8 are results of a two factor MANOVA analysis of Union by Outcome for the Collective Influence category. The MANOVA analysis provides a simultaneous test of mean differences incorporating a 2nd factor. The results of the analysis lead to an indication as to whether union membership has an effect on mean responses, either by itself as a main effect, or jointly with type of outcome (i.e. interaction effect). Because of the intercorrelation among the items, MANOVA, rather than ANOVA, was used.

TABLE 8

MANOVA RESULTS FOR COLLECTIVE INFLUENCE[a]

EFFECT	TSS	F	df	P
Union Membership	10.6579	1.75	6,293	.11
Outcome Type (Expected or Actual)	30.3483	4.97	6,293	.00
Interaction (Union by Outcome)	2.7922	.46	6,293	.83

[a] Outcome Statement Numbers: 10, 11, 23, 24, 25, 26

The significant F value of 4.97 for Outcome Type indicates that mean expected outcomes differ from mean actual outcomes regardless of union membership. However, the F of 1.75 indicates no significant differences between union and non-union membership when expected and actual items in the collective influence category are lumped together. The F of .46 indicates no interaction between outcome type and union membership.

2. When an F value from the MANOVA results was significant (for Union Membership, Outcome Type, and/or Interaction Effect), two follow-up tests were conducted in

an attempt to learn which of the individual outcome statements contributed to the overall significance. The first follow-up procedure was a series of univariate F-tests. The second was Multiple Discriminant Analysis. For example, in the MANOVA table above, only Outcome Type had a significant F value of 4.97. Table 9 presents the results of the two follow-up procedures for Outcome Type for Collective Influence.

TABLE 9

UNIVARIATE F TEST and DISCRIMINANT ANALYSIS RESULTS FOR EXPECTED VS. ACTUAL COLLECTIVE INFLUENCE ITEMS

STATEMENT Number and Topic		F	Discriminant Loading
26	Discuss/Immediate Work area	19.48**	.80
24	Visibility of Issues/Group	19.23**	.80
25	Group/mgmt Implement Change	18.45**	.78
23	Seriousness/Mgmt/by Group	16.33**	.73
10	Mgmt Awareness/my job	4.97*	.48
11	Mgmt Awareness/Work group	3.16	.32

* $p < .01$
** $p < .001$

Both the Univariate F values and the Discriminant Loadings are reported, and can be looked upon as complementary statistical techniques. The univariate F has been sharply criticized because it overlooks possible

correlations among the variables (Hair et al, 1979:153; Stevens, 1972; Tatsuoka, 1971). Discriminant Analysis, which takes into account correlation among the variables, has been strongly recommended to further explore the variables which are contributing significantly to the overall MANOVA significance (Green, 1978; Hair, 1979; Stevens, 1972). Multiple Discriminant Analysis determines the coefficients of linear combinations of variables which best discriminate between multiple groups. The purpose is to identify the coefficients that maximize between group variance with respect to within group variance for hypothesized groups. Multiple Discriminant Analysis provides discriminant loadings which can be interpreted like factor loadings in assessing the relative contribution of each of the individual outcome statements to the discriminant function. Since the discriminant loadings indicate the extent of contribution of each item with respect to differences that may occur, they allow us to rank the items from those which are contributing the most to those that are contributing the least (Hair, 1979). The Univariate F and Discriminant tables are presented in this manner. Ideally, comparison of the results of the two techniques will be similar. Therefore, the interpretation

of which outcome statements are contributing to the overall MANOVA significance can be stated with more certainty.

The results of the Univariate F-test in Table 9 revealed that, of the six outcome statements included in the Collective Influence grouping, significant differences occurred with respect to five items. The results indicated through both the F test and discriminant loadings that items 26, 24, 25, and 23 contributed the most for differences in the Collective Influence category. Item 10 contributed relatively less and item 11 almost nothing to the differences between expected and actual outcomes.

For each of the five statements (26, 24, 25, 23, and 10) the actual outcomes exceeded the expectations of participants. The mean results to be seen in Table 10 compare union to non-union expected results and actual results, showing in detail the finding that actual outcomes were higher than expected outcomes in the Collective Influence category.

3. The final table presented for each outcome grouping provides comparisons between union and non-union participants for the expected and actual outcomes separately. The results provide information helpful in addressing whether union and non-union members differ significantly from each other in expected outcomes and

actual outcomes. Table 10 provides the results of the analysis of mean differences in these two responses as well as the Hotelling's T square value associated with each comparison. These results elaborate the multivariate F for Union Membership seen in Table 8.

TABLE 10

DIFFERENCES BETWEEN UNION AND NON-UNION PARTICIPANTS ON EXPECTED AND ACTUAL COLLECTIVE INFLUENCE OUTCOMES

Statement Number	Outcome: Expected		Outcome: Actual	
	Union	Non-union	Union	Non-union
	$\bar{X}$	$\bar{X}$	$\bar{X}$	$\bar{X}$
10 Mgmt awareness/my job	2.76	3.12	3.19	3.39
11 Mgmt awareness/wk group	2.87	2.9	3.16	3.17
23 Seriousness/mgmt/by group	2.80	2.97	3.29	3.53
24 Visibility of Issues/group	2.97	3.09	3.43	3.58
25 Group/mgmt implement change	2.85	3.08	3.46	3.61
26 Discuss/immediate wk area	2.82	2.93	3.33	3.58
	$\bar{X}$= 2.82	$\bar{X}$=3.03	$\bar{X}$=3.31	$\bar{X}$=3.48
	Hotelling's T= 8.05		Hotellings'T =6.10	
	F = 1.29		F = .98	
	df 6,144		df 6,144	
	p= .26		p= .43	

The Hotelling's T squares and associated p values test the equality of group means of several variables simultaneously. The results of Table 10 indicate that there

are no statistically significant differences between union and non-union expected responses or actual responses.

The major question at this point is why there exists such a significant difference between expected and actual outcomes associated with collective influence. One possible reason that the experience of collective influence is relatively unexpected is that the rank and file are not like managers who spend a good portion of their days in group or committee meetings. The rank and file spend most of their day "doing" some measurable work on a production line and/or performing some routine task. Since these rank and file employees have seldom had the opportunity to participate in group related activities on the job, they did not anticipate collective influence as a likely outcome of participation in problem-solving group activity. And while they didn't actually receive an enormous outburst of collective influence, it was clearly more than expected.

In summary, the experiencing of a sense of collective influence is associated with participation in both union and non-union firms even more than workers initially expected.

A participant's statement further elaborates:

> "...when management changed the machines on the line five years ago, they never bought the final machine needed for production. We still finished the product with the old machine. This took a lot of time and extra work. Our group recommended the purchase of the new machine. They haven't approved it yet, but at least we had a chance to tell them what we needed."
>
> Non-union respondent
> 7 years with firm

The format for the reporting of results for the remaining five outcome groupings is consistent with the approach taken for Collective Influence. The tables reported within each of the six categories are interrelated. That is, while the tables focus on different aspects of the research question, the underlying results producing them are by no means mutually independent.

Attention now turns to the results for each of the remaining five outcome areas.

Personal Skill Development

The implementation of problem-solving groups in organizations is usually accompanied by training in problem-solving group skills. Although such training may differ as to content and design (depending upon which consulting "package" is adopted by a company) participants are exposed to a set of materials and techniques to develop their skills. As one participant stated:

> "At first I thought it would be a paid hour out of work...but I got into it... our group brainstormed and came up with a project. We worked hard on a solution. I made up the chart [Pareto diagram] for the management presentation. The tapes [problem-solving skill tapes] were boring... but helped our group to learn to tackle a problem."
>
> Union Respondent
> 10 years with company

Table 11 provides the results of the MANOVA analysis. The significant F value of 6.52 for Outcome Type reveals that mean expected outcomes differ from mean actual outcomes regardless of union membership. Returning to the mean scores for Personal Skill Development reported in Table 7, it can be seen that for both union and non-union respondents outcomes again exceed expectations.

TABLE 11

MANOVA RESULTS FOR PERSONAL SKILL DEVELOPMENT [a]

EFFECT	TSS	F	df	P
Union Membership	8.80	1.23	7,292	.28
Outcome Type (Expected or Actual)	46.58	6.52	7,292	.00
Interaction (Union by Outcome)	9.87	1.38	7,292	.21

[a] Outcome Statement Numbers: 12, 13, 14, 15, 17, 19, 20

Table 12 isolates specific outcome differences within the Personal Skill Development category. Once again, actual outcomes exceed expectations.

TABLE 12

UNIVARIATE F TEST AND DISCRIMINANT ANALYSIS RESULTS FOR EXPECTED VS. ACTUAL PERSONAL SKILL DEVELOPMENT ITEMS

STATEMENT Number and Topic		F	Discriminant Loading
12	Train/problem-solving skills	27.96***	.78
15	Speak/Write Improvement	11.48***	.49
13	Train/statistical skills	7.74***	.40
19	Increased confidence	6.73**	.38
17	Contact/others in company	6.23*	.37
20	Mgmt aware/my contribution	1.02	.15
14	Train/other jobs	.26	-.07

* $p < .05$
** $p < .01$
*** $p < .001$

The results indicate that significant differences occurred with respect to five outcome statements. Based on the results in these two tables, it can be concluded that expected and actual outcomes differ in the category of Personal Skill Development, although items 20 and 14 don't contribute to the differences.

Do expected and actual responses differ for union and non-union members? Table 11 (F= 1.23) suggests not. This is confirmed by Table 13 which shows the means for each Personal Skill Development item, and reveals that there is no significant overall difference between these two comparison groups for either expected or actual outcomes.

TABLE 13

DIFFERENCES BETWEEN UNION AND NON-UNION PARTICIPANTS ON EXPECTED AND ACTUAL PERSONAL SKILL DEVELOPMENT OUTCOMES

Statement Number	Outcome: Expected		Outcome: Actual	
	Union	Non-union	Union	Non-union
	$\bar{X}$	$\bar{X}$	$\bar{X}$	$\bar{X}$
12 Train/problem-solve skills	2.73	3.12	3.19	3.39
13 Train/statistical skills	2.53	2.58	2.82	3.06
14 Train/other jobs	2.37	2.42	2.41	2.24
15 Speak/Write improvement	2.23	2.45	2.67	2.90
17 Contact/others in company	2.56	2.63	2.98	2.86
19 Increased confidence	2.75	2.64	3.06	3.00
20 Mgmt aware/my contribution	2.44	2.67	2.80	2.58
	$\bar{X}$=2.52	$\bar{X}$=2.60	$\bar{X}$=2.90	$\bar{X}$=2.88
	Hotelling's T= 8.99		Hotelling's T= 11.08	
	F = 1.23		F = 1.51	
	df 7,143		df 7,143	
	p= .28		p= .16	

Again, the question which arises from these results is why actual outcomes are higher than expected outcomes. Perhaps these rank and file workers have had little opportunity to attend any type of workshop related to problem-solving skill development. Normally such training is limited to first-line supervisors and managers. A supervisor or manager may expect to be trained in skills in order to better manage others, learn about the company, and/or improve productivity. The training that exists for

the rank and file, if any, involves actual procedures and processes that relate to the production of specific products. Based on the interviews with both union and non-union participants, it was apparent that the opportunity to learn problem-solving skills such as communication, statistics, and brainstorming, contributed to the development of improved speaking and writing abilities. As one participant stated:

> "Until participation in problem-solving groups, I was always quiet...But when we began working on projects everyone had a role to play...I had to go talk with a manager from another department. He sent me to another manager..and finally I met with the plant manager. I was really nervous..but now we are working on our third project...and I'm not afraid to talk to anyone in the plant now."
>
> Non-union respondent
> 4 yrs with company

Whether participants are union or non-union, Personal Skill Development, including the formal training and informal activities related to the problem-solving group process, seems to occur. And while it occurs to only a moderate degree, overall the outcome is more than expected.

Negotiable Collective Bargaining Issues

The outcome statements associated with Negotiable Collective Bargaining Issues focus on topics of pay, promotion, job security, design of individual jobs, and discussion of supervisory performance. As previously mentioned, some underlying assumptions in the literature on QWL programs indicate that problem-solving group activities have the potential to increase pay, to provide promotional opportunities, to improve job security, to decrease grievances (by handling supervisor-employee problems through the problem-solving process), and to discuss the design or redesign of jobs. All of these issues have some association with topics normally addressed through the collective bargaining or grievance procedures processes. A major concern from the union perspective has been that, if these issues are dealt with through the problem-solving process, there may exist potential threats to the traditional collective bargaining process by providing competitive alternatives that lessen the unions' relevance.

The results in Table 7 and in the following MANOVA table begin to illuminate how traditional, negotiable, collective bargaining issues are seen as outcomes in the problem-solving group process. These results indicate that

there is an overall effect of Union Membership represented by the F value of 7.08. Contrary to earlier results, there is no effect of expected versus actual outcomes.

TABLE 14

MANOVA RESULTS FOR NEGOTIABLE COLLECTIVE BARGAINING ISSUES[a]

EFFECT	TSS	F	df	P
Union Membership	43.2616	7.08	6,293	.00
Outcome Type (Expected or Actual)	4.9648	.81	6,293	.56
Interaction (Union by Outcome)	3.0175	.49	6,293	.81

[a] Outcome Statement Numbers: 16, 18, 21, 22, 27, 29

The Univariate F test and Discriminant Loadings in Table 15 indicate that significant differences occurred with respect to two outcome statements: 1) discussion of supervisory performance; and 2) the design of individual jobs.

TABLE 15

UNIVARIATE F TEST AND DISCRIMINANT ANALYSIS RESULTS FOR UNION VS. NON-UNION NEGOTIABLE COLLECTIVE BARGAINING ISSUES ITEMS

STATEMENT Number and Topic		F	Discriminant Loading
27	Discuss/supervisor perf	19.68**	.67
29	Discuss/design ind. jobs	5.21*	.34
18	Promotion opportunities	3.08	-.26
16	Extra Income	1.87	-.20
21	Job security/my contribution	1.36	.17
22	Job security/firm profitable	.27	-.07

* p < .05
** p < .001

Table 16 provides additional information with respect to outcome statements 27 and 29. For each statement non-union mean responses are significantly lower than union mean responses on both expected and actual outcomes. The Hotellings T's in Table 16 shows there is an overall difference between union and non-union workers that holds for both expected and actual outcomes, even though only two of the items by themselves produced a statistically significant difference.

TABLE 16

DIFFERENCES BETWEEN UNION AND NON-UNION PARTICIPANTS ON EXPECTED AND ACTUAL NEGOTIABLE COLLECTIVE BARGAINING OUTCOMES

Statement Number	Outcome: Expected		Outcome: Actual	
	Union	Non-union	Union	Non-union
	$\bar{X}$	$\bar{X}$	$\bar{X}$	$\bar{X}$
16 Extra Income	1.50	1.58	1.44	1.65
18 Promotion opportunities	2.01	2.31	1.94	2.06
21 Job security/my contribution	2.23	2.16	2.21	1.87
22 Job security/firm/ profitable	2.38	2.41	2.25	2.37
27 Discuss/supervisor perf.	2.26	1.63	2.23	1.76
29 Discuss/design ind. jobs	2.51	2.23	2.60	2.31
	$\bar{X}$= 2.15	$\bar{X}$= 2.05	$\bar{X}$= 2.14	$\bar{X}$= 2.02
	Hotelling's T= 24.20		Hotelling's T= 22.35	
	F = 3.89		F = 3.60	
	df 6,144		df 6,144	
	p= .001		p= .00	

That non-union workers are lower may be accounted for in part by the fact that discussion of supervisory performance and discussion of the design of individual jobs were prohibited from problem-solving group activity. That is evidenced by written documentation pertaining to the design of problem-solving programs in the non-union firms. In the two union firms, there was no specific documentation focusing on these two issues.

A participant highlights how these issues are prohibited from discussion.

> "Our supervisor is at all the meetings. We don't talk about her or any person. The facilitator keeps us on track and makes sure we are talking about the work problem.
>
> Non-union respondent
> 2 years with company

Although the two issues of supervisory performance and individual job discussions account for the difference in MANOVA results with respect to effect of Union Membership, an important finding is that Type of Outcome (Expected and Actual) does not show significant differences. Thus, both union and non-union participants get more or less what they expect from participation in problem-solving groups with respect to Negotiable Collective Bargaining outcomes.

Information About Job

Issues included in the outcome "Information About Job" category focus on participants' learning more about their own job as well as others' jobs from involvement in problem-solving group activities. As a participant states with respect to his job:

> "...as the paper came into our area we checked it for color and creases in the paper. We used to reject a lot of paper. It didn't make any difference to us whether it became scrap. Our problem solving group met with the coloring department because they were working on a project. We found a way to decrease the rejects...It makes my job easier now--fewer problems to spot."
>
> Union Respondent
> 6 years with company

The results of the MANOVA in Table 17 indicate a significant F value for effect of Outcome Type. The follow-up procedures in Table 18 indicate two outcome statements which account for this significant difference.

TABLE 17

MANOVA RESULTS FOR INFORMATION ABOUT JOB [a]

EFFECT	TSS	F	df	P
Union Membership	7.9423	1.97	4,295	.09
Outcome Type (Expected or Actual)	9.9924	2.47	4,295	.04
Interaction (Union by Outcome)	1.6539	.41	4,295	.80

[a] Outcome Statement Numbers: 1, 2, 3, 5

TABLE 18

UNIVARIATE F TEST AND DISCRIMINANT ANALYSIS RESULTS FOR EXPECTED VS. ACTUAL INFORMATION ABOUT JOB ITEMS

STATEMENT Number and Topic		F	Discriminant Loading
2	Information Others Jobs	6.51*	.80
5	Information/decisions/affect me	3.72*	.61
1	Info/my job	.73	.27
3	Product Info	.63	.25

* $p < .05$

For both statements 2 and 5 actual outcomes exceeded expectations as seen in Table 19 and suggested earlier in Table 6.

The result for statement 2 (information on others' jobs) is not surprising. Rank and file workers have had little opportunity to meet and share work information in a structured setting. Again, given the routine nature of the work performed by most participants, there had been few opportunities to meet with co-workers to discuss problems on the job. For most participants, problem-solving groups were the first opportunity to explore the work world beyond their immediate environment.

In addition to learning about others' jobs, a second statement which accounts for the effect of Outcome Type is exposure to ways in which decisions are made which directly affect the workers. Learning about such decisions and their effect on the individual seems to be a natural outflow of the problem-solving process. Once a project is selected, it is necessary to gather information from different persons and departments in the company, and once a project solution is recommended, management must decide on the "go or no go" status of the project. From its inception, participants learn who has the power to make decisions regarding their project.

The results in Table 19 indicate that union and non-union expected and actual responses do not significantly differ, confirming the non significant (p .09) multivariate F (1.97) in Table 17.

TABLE 19

DIFFERENCES BETWEEN UNION AND NON-UNION PARTICIPANTS ON EXPECTED AND ACTUAL INFORMATION ABOUT JOB OUTCOMES

Statement Number	Outcome			
	Expected		Actual	
	Union	Non-union	Union	Non-union
	$\bar{X}$	$\bar{X}$	$\bar{X}$	$\bar{X}$
1 Info/my job	1.87	2.84	3.02	2.90
2 Info/other's jobs	2.64	2.78	2.97	3.06
3 Product info	2.98	3.02	3.16	3.04
5 Info/decisions/ affect me	2.85	2.78	3.26	2.87
	$\bar{X}$= 2.83	$\bar{X}$= 2.85	$\bar{X}$= 3.10	$\bar{X}$= 2.97
	Hotelling's T= 2.07		Hotellings'T = 7.21	
	F= .50		F= 1.76	
	df 4,146		df 4,146	
	p= .73		p= .13	

Given the similar structures of the programs for both union and non-union firms, it is not surprising that expectations and outcomes for these two groups are similar. The question, however, remains as to what benefits will accrue to the workers from the increased exchange of information. Whether workers will be more satisfied or productive as a result of this outcome remains to be investigated.

Information About Company

The project orientation of problem-solving group activity often requires extensive data collection efforts, including financial, process/product, and/or organizational policy information. Again, given that respondents in the study normally do not have access to or a previous need to secure these types of information, the process of securing data contributes to exchange of information with individuals and departments beyond one's immediate work environment. As one participant stated:

> "We asked the guy from the finance office to come in and explain cost-benefit...our project would cost $10,000..but we didn't know how reasonable that would be. He explained how decisions were made from a financial point of view...You really learn a lot about the company from a project."
>
> Union Respondent
> 6 years with company

The MANOVA results in Table 20 indicate that both major effects (Union Membership and Outcome Type) have significant F-values of 3.28 and 2.65, respectively.

TABLE 20

MANOVA RESULTS FOR INFORMATION ABOUT COMPANY[a]

EFFECT	TSS	F	df	P
Union Membership	16.04	3.28	5,294	.00
Outcome Type (Expected or Actual)	13.42	2.65	5,294	.00
Interaction (Union by Outcome)	5.53	1.09	5,294	.36

[a] Outcome Statement Numbers: 4, 6, 7, 8, 9

With respect to effect of Union Membership, Table 21 indicates that one outcome statement (6) accounts for most of this difference. Table 23 shows union workers are higher, especially on the actual outcome for item 6.

TABLE 21

UNIVARIATE F TEST AND DISCRIMINANT ANALYSIS RESULTS FOR UNION AND NON-UNION INFORMATION ABOUT COMPANY ITEMS

STATEMENT Number and Topic		F	Discriminant Loading
6	Information other companies	4.86*	.54
8	Info/pay determined	3.03	-.43
7	Info/product quality	1.10	.25
9	Info/company finances	.69	-.20
4	Info/how decisions made	.11	.07

* $p < .05$

Follow-up statistical procedures for the effect of Outcome Type reported in Table 22 indicate that two of the five items in this category account for significant differences between expected and actual outcomes. As seen in Table 23 for both statements 4 and 9 actual outcomes exceeded expected outcomes for both union and non-union participants.

TABLE 22

UNIVARIATE F TEST AND DISCRIMINANT ANALYSIS RESULTS FOR EXPECTED VS. ACTUAL INFORMATION ABOUT COMPANY ITEMS

STATEMENT Number and Topic	F	Discriminant Loading
4 Info/how decisions made	6.58*	.69
9 Info/company finances	5.66*	.65
6 Info/other companies	.77	.25
7 Info/Product quality	.05	.06
8 Info/pay determined	.00	-.00

* $p < .05$

Outcome statement 4, which relates to problem-solving group participation providing information on how decisions are made within the company, is clearly tied to the data gathering processes associated with problem-solving groups. As one participant states:

> "I've been here nine years. I never knew how decisions were made...when we [the project group] recommended a new speaker system for the plant...we had to meet with a lot of people...finally the plant manager had to make the decision. I never knew how much time it took to get things done. Just figuring out who you need to talk to and who needs to okay things takes so much time."
>
> Union respondent
> nine years with company

Table 23 reports that union and non-union participants differ significantly in their responses to actual outcomes. This suggests that the main effect of union membership reported in Table 20 is attributable to actual rather than expected outcomes, even though there was not a significant interaction effect.

TABLE 23

DIFFERENCE BETWEEN UNION AND NON-UNION PARTICIPANTS ON EXPECTED AND ACTUAL INFORMATION ABOUT COMPANY OUTCOMES

Statement Number	Outcome: Expected		Outcome: Actual	
	Union	Non-union	Union	Non-union
	$\bar{X}$	$\bar{X}$	$\bar{X}$	$\bar{X}$
4 Info/how decisions are made	2.65	2.65	3.05	2.95
6 Info/other companies	2.12	2.08	2.47	1.95
7 Info/product quality	3.16	3.13	3.30	3.05
8 Info/pay determined	1.98	2.21	1.98	2.21
9 Info/company finances	2.20	2.49	2.70	2.64
	$\bar{X}$= 2.42	$\bar{X}$= 2.51	$\bar{X}$= 2.70	$\bar{X}$= 2.56
	Hotelling's T= 4.35		Hotellings'T= 16.18	
	F= .84		F= 3.15	
	df 5,145		df 5,145	
	p= .51		p= .00	

Based on the above results, both unionized and non-unionized firms' problem-solving groups appear to provide participants with more information about the company than was expected.

The process of problem-solving groups appears to provide a vehicle for increased communication among departments in the organizations. For individuals who typically have been isolated within their immediate working environment, participation seems to allow for increased organizational learning. What value this increased information about the wider organization will hold for the individual workers, as well as the organization as a whole, is yet to be determined.

Feelings About Work

Problem-solving group processes are often associated with developing increased trust between employees and managers, increased morale in the organization, and increased positive attitude towards one's job. Outcome statements included in the "Feelings About Work" category have as their focus participant evaluation of expectations and actual outcomes with respect to the three above outcomes--trust, morale, and positive attitude.

Results of the MANOVA analysis (Table 24) indicate a significant F value of 2.84 for effect of Outcome type.

TABLE 24

MANOVA RESULTS FOR FEELINGS ABOUT WORK [a]

EFFECT	TSS	F	df	P
Union Membership	.6565	.22	3,296	.88
Outcome Type (Expected or Actual)	8.5861	2.84	3,296	.03
Interaction (Union by Outcome)	1.09	.36	3,296	.77

[a] Outcome Statement Numbers: 28, 30, 31

Table 25 reveals that only one of the three items in this grouping accounted for the difference in expected and actual responses. From Table 26 the results indicate that for item number 30 the actual outcome exceeded the expectation of participants.

TABLE 25

UNIVARIATE F TEST AND DISCRIMINANT ANALYSIS RESULTS FOR EXPECTED VS. ACTUAL FEELINGS ABOUT WORK ITEMS

STATEMENT Number and Topic		F	Discriminant Loading
30	Positive Attitude Job	4.27*	.70
28	Increased Trust	.18	.15
31	Increased Morale	.00	.01

* $p < .05$

TABLE 26

DIFFERENCES BETWEEN UNION AND NON-UNION PARTICIPANTS ON EXPECTED AND ACTUAL FEELINGS ABOUT WORK OUTCOMES

Statement Number	Outcome: Expected		Outcome: Actual	
	Union	Non-union	Union	Non-union
	$\bar{X}$	$\bar{X}$	$\bar{X}$	$\bar{X}$
28 Increased trust	2.52	2.63	2.65	2.61
30 Positive attitude/job	2.83	2.79	3.05	3.11
31 Increased morale	2.82	2.89	2.80	2.91
	$\bar{X}$= 2.72	$\bar{X}$= 2.77	$\bar{X}$= 2.83	$\bar{X}$=2.88
	Hotelling's T= 1.38		Hotellings'T = .58	
	F= .45		F= .29	
	df 3,147		df 3,147	
	p= .71		p= .90	

Table 26 also shows no significant differences between between union and non-union participants for expected and actual responses, confirming the non significant F in Table 24.

The results from the tables suggest that the outcomes regarding job attitude are slightly but significantly higher than participants expected before joining the problem-solving group program. The results also indicate that participants received what they expected with respect to increased trust and increased morale.

As one participant stated about his feelings toward work since participation in the program:

"I like problem-solving groups...it breaks up the day on Thursdays...we get an hour out of work a week and it gives me something to look forward to...I guess it makes my job a little bit better."

Non-union participant
four years with company

Section 4--Open-ended Question Results

Results of the three open-ended questions appear in Tables 27, 28, and 29. Responses to each of the questions were reviewed for content by two readers, who were each asked to identify category groupings they felt were represented by a particular statement. Grouping categories were then discussed by the reviewers and consensus was reached as to how the groupings should be identified.

Table 27 lists the categories and the number of responses placed within each category for both union and non-union firms. Six categories were identified for the question "What is the best (most positive) result from participation?"

The results presented show that in some categories union respondents provided more comments than non-union respondents, and the reverse occurred in other categories. It is difficult to speculate on the causes for the differences. Therefore, interpretation of open-ended results will focus on their relationship to previous presented findings.

TABLE 27

NUMBER OF CATEGORIZED RESPONSES TO QUESTION: WHAT IS THE BEST (MOST POSITIVE) RESULT FROM PARTICIPATION?

CATEGORY	UNION	NON-UNION
1. Recognition by management of work-related problems	7	6
2. Opportunity to be heard by management	19	8
3. Awareness of company/other people's jobs	15	8
4. Getting things done through problem-solving	26	22
5. Personal development	3	11
6. Paid time off/an hour out of work	7	1

The results indicate that for both union and non-union participants "getting things done through problem-solving" is a positive outcome of participation. In addition, "an opportunity to be heard by management" is also a positive outcome from participation. Given the results cited in the collective influence category grouping, it is not surprising that participants point to "being heard" as one of the most positive outcomes from participation.

Table 28 provides the results for the question, "What is the worst (most negative) result from participating?" Six category groupings were identified.

TABLE 28

NUMBER OF CATEGORIZED RESPONSES TO QUESTION: WHAT IS THE WORST (MOST NEGATIVE) RESULT FROM PARTICIPATION?

CATEGORY	UNION	NON-UNION
1. Lack of follow-up in project implementation by management	10	6
2. Lack of interest by management	5	4
3. Time (Not enough to get things done)	12	18
4. Attitudes of non-participants	8	2
5. Lack of participation by group members	5	7
6. None (no negative results)	8	6

The results suggest that for both union and non-union problem-solving groups, "time" (not enough to get things done) is one of the negative outcomes from participating. As mentioned previously, problem-solving groups meet, at most, once a week. Because of the limited time provided for problem solving a frequent complaint from participants is

that it is difficult to accomplish projects within such time constraints.

A second frequently cited response was "lack of follow-up in project implementation by management." This response seems related to the "time" response. Since, by the design of the problem-solving programs, the groups meet once a week, the accomplishments of the group tend to be drawn out (usually over a long period of time, e.g. six months to a year). Only when the project is completed is it recommended to management. Management then must decide what to do. If management decides to approve and implement the project then someone from management is usually assigned to oversee its implementation. A particular project may be high on the list of priorities for a project team, but lower on the list of priorities for management. Depending on the nature of the project, where it falls on the priority list of management, and the kinds and types of resources necessary for its implementation, the actual implementation of the project may be very slow. Thus, it is not surprising that one of the more frequent negative results is the "lack of follow-up in project implementation by management."

The results in Table 29 indicate responses to "How could your problem-solving group function better?" They

reveal the need for "better cooperation from management and other departments". This response is consistent with the results of Table 28.

TABLE 29

NUMBER OF CATEGORIZED RESPONSES TO QUESTION: HOW COULD YOUR PROBLEM-SOLVING GROUP FUNCTION BETTER?

CATEGORY	UNION	NON-UNION
1. More time needed	10	12
2. Better cooperation from management and other departments	17	9
3. More involvement by all group members	14	15
4. Improve ability to focus better on problems	16	13

The other three category groupings: 1) more time needed; 2) more involvement by all group members; and 3) improve ability to focus better on problems; all relate to the structure and design of the problem-solving group process. Whether participants are union or non-union it appears that commonalities of issues with respect to improving the problem-solving group process are similar. These three responses seem to represent many of the concerns of every group process. Group members in most meetings will generally think it desirable to have more time to handle

issues, that members should be more involved, and that ability to focus on problems should be improved. Responses to improving the problem-solving group process are not unique to quality of worklife programs.

Results of Satisfaction with QWL Program Participation

Results for the two questions related to satisfaction with participation in the problem-solving group process appear in Table 30. Reported are T-tests results which reveal no significant difference in mean responses for the union and non-union respondents.

Table 30 also presents the percentage of respondents who answered each response category. As indicated, approximately 74% of the union and 85% of the non-union participants are either "satisfied" or very "satisfied" with what they have "gotten out of participation". Similarly, approximately 70% of union and 78% of non-union respondents are either "satisfied" or very satisfied" with how problem-solving groups have worked out so far.

TABLE 30

PERCENTAGES AND MEAN RESPONSES TO SATISFACTION WITH PROBLEM-SOLVING GROUP PROCESS QUESTIONS

QUESTION	RESPONSE CATEGORY					
	1	2	3	4	$\bar{X}$	P
All in all, how satisfied are you with what you have gotten of participating in problem-solving groups?						
Union n=78	3.8	21.8	59	15.4	2.85	.31
Non-union n=73	4.1	11	68.5	16.4	2.97	
All in all, how satisfied are you with the way the problem-solving groups have worked out so far?						
Union n=78	5.1	24.4	55	15.4	2.80	.62
Non-Union n=73	2.7	19.2	67.1	11	2.86	

1= very dissatisfied
2= dissatisfied
3= satisfied
4= very satisfied

The responses from Table 27 may give some clue as to what aspects of problem-solving group processes, in part, account for participant responses indicating "satisfaction" with the QWL programs (e.g., getting things done; opportunity to be heard by management). Responses from Table 28 may provide some clue as to what may be accounting for "dissatisfaction" with QWL programs (e.g., not enough time; lack of follow through by management). The four categories in Table 29, regarding improvement of problem-solving group processes, provide some suggestions for program designers and implementors which might contribute to reducing some of the dissatisfaction of participants with problem-solving groups.

Chapter V provides a summary of the findings and further discussion of the results presented in Chapter IV.

C H A P T E R V

DISCUSSION AND SUMMARY

Chapter V provides a summary of the results presented in Chapter IV and further elaborates upon the findings. In addition to the summarization of results, commentary is provided as to the strengths and weaknesses of the study, and suggestions for future research discussed.

The major objectives of this study were threefold: 1) to identify the outcomes that rank and file participants associate with participation in quality of worklife programs; 2) to explore whether participants' expected outcomes differed from actual outcomes; 3) to explore whether union membership may make for a difference in perceptions concerning expected and actual outcomes.

The first objective has been addressed with the development of the questionnaire and the identification of the six outcome groupings, previously discussed in Chapter 3. Results of the study relating to the second and third objectives were reported in Chapter IV, in addition to discussions of the findings for each of those six outcome groupings. Table 31 provides a summary of the MANOVA results for all outcome groupings, as well as the results of the differences between union and non-union participants on Expected and Actual Outcomes.

TABLE 31

SUMMARY OF RESULTS: MANOVA AND DIFFERENCES BETWEEN UNION AND NON-UNION PARTICIPANTS ON EXPECTED AND ACTUAL OUTCOMES

OUTCOME	EFFECT			UNION AND NON-UNION	
	UNION P	OUTCOME P	INTERACTION P	EXPECTED P	ACTUAL P
COLLECTIVE INFLUENCE	.11	.00	.83	.26	.43
PERSONAL SKILL DEVELOPMENT	.28	.00	.21	.28	.16
NEGOTIABLE COLLECTIVE BARGAINING ISSUES	.00	.56	.81	.00	.00
INFORMATION ABOUT JOB	.09	.04	.80	.73	.13
INFORMATION ABOUT COMPANY	.00	.00	.36	.51	.00
FEELINGS ABOUT WORK	.88	.03	.77	.71	.90

As shown in the table, significant Union effects were found for only two of the six groupings: Negotiable Collective Bargaining Issues and Information About Company. An Outcome effect is reported for five of the six outcome groupings. The only grouping where no significant difference occurred between Expected and Actual Outcome Types was in the Negotiable Collective Bargaining Issues. There was no Interaction Effect for any of the six groupings.

The results of the comparison between expected responses for union and non-union participants reveal a statistically significant difference only for Negotiable Collective Bargaining Issues. For the actual outcome comparisons both Negotiable Collective Bargaining Issues and Information About the Company show a significant difference.

These summary results provide the information necessary to explore the second objective of the study: whether expected outcomes differ from actual outcomes. As mentioned, the results for Outcome Type reveal a statistically significant difference between expected and actual outcomes in five of the six outcome groupings. As reported in Chapter IV, in each of those five groupings, actual outcomes exceeded the expectations of participants.

Some speculation as to why actual outcomes have exceeded expectations of participants has been previously raised. One possible explanation is that rank and file participants have had few prior opportunities to work in groups that deal with work related issues. As mentioned in the discussion in Chapter IV, in the Collective Influence grouping, this lack of exposure to, and involvement in, group activities as a means of "getting things done", may in some way account for the results of actual outcomes being greater than expected. The survey participants simply may not have known what to expect.

Similarly, the results in the Personal Skill Development category may also reflect a lack of exposure--(in this case) to the opportunity of training and development. Typically these employees have had few, if any, opportunities for communication, problem-solving, and interpersonal skill development. A lack of knowledge, concerning what these training opportunities may involve, could be reflected in the low expectations reported.

Why actual outcomes exceeded expectations for both the Information About Job and Information About Company groupings is also subject to speculation. It may be that the participants in the study historically have received only limited information about the job and the company and

only on an informal basis. With the introduction of problem-solving groups, information about the company and the job gets discussed in a more structured and systematic fashion. In order to address problems in the work environment, participants often need information which lies outside their immediate work area. The process of gathering information, therefore, increases interaction with others, not only within one's immediate work area but outside of it as well. Prior to problem-solving groups, most rank and file participants have had little need or opportunity to interact with others on a wider basis in the company. Problem-solving groups provide a structured vehicle for organizational learning that previously was absent.

The final grouping, where there was a statistically significant difference between expected and actual outcomes, was Feelings About Work. As noted previously, a significant difference here was accounted for by only one of the individual outcome statements included in the grouping, which focused on an increased positive attitude toward work. Here, again, outcomes exceeded expectations.

The only grouping where actual outcomes did not exceed expectations was Negotiable Collective Bargaining Issues. The actual outcomes that participants experienced clearly mirrored what they expected. As previously mentioned, in a given company, the firm's guidelines typically restrict discussion of issues such as pay, promotion and job security in the problem-solving group process. Most companies "buy" a programmed package of materials and a consultant's services when they introduce a problem-solving program. Thus, guidelines for instituting the programs and even the goals and training materials themselves have become fairly standardized. Part of the selling point to both firms and unions for introduction of the programs has been the idea of restriction of certain topics for discussion. For the union, the exclusion from discussion of topics of pay, promotion, and job security, preserves these issues for the collective bargaining process. For the non-union firms, the restrictions protect management control over the issues. The design of a problem-solving program, therefore, partly accounts for expected and actual outcomes being similar for this grouping.

In summary, the answer to the question: "Do expected and actual outcomes differ?", is that they do for five of the six outcome groupings, and in those, actual outcomes exceed expectations. However, it must be kept in mind that the results are based on participants who are currently involved in the problem-solving groups. The results do not include those participants who may have voluntarily left the programs. Perhaps for those individuals, actual outcomes might have been less than expected. Ideally, both groups should have been included in the study, but the difficulty in gaining cooperation from the firms in order to identify and gain access to former participants proved monumental. The staff time needed for identification of former participants, as well as the reluctance on the firms' part to secure information from individuals who may not have been satisfied with the program, prohibited the inclusion of former participants in the study. Because of this limitation, it can only be concluded that the results presented reflect the evaluation of outcomes of those who have continued in the problem-solving group process. This may have had an effect on why actual outcomes exceeded expectations.

A further limitation is the "memory" problem. It is questionable whether respondents can recall outcome expectations originating some months in the past, 1) with complete accuracy and, 2) without bias caused by actual outcomes subsequently experienced. The assumption here has been that both conditions hold. It would be desirable therefore, in future research, to alleviate the above limitations through longitudinal studies, tracking QWL programs from their inception. The problems of both, lack of information concerning dropouts, and of biased or inaccurate recall, could then be managed in a more expedient manner.

Another major concern of the findings summarized in Table 31 is that, although statistically significant differences are reported for some groupings in both of the main effects (Outcome Type and Union Membership), the mean of each grouping (Table 7) represents a rather narrow range of the degrees to which participants expected or actually experienced the outcome. The 5 point scale on the questionnaire asked to what degree the participant expected the particular outcome and to what degree that outcome actually happened (1=not at all; 2=slight degree; 3=moderate degree; 4=high degree; 5=very high degree). Though a statistically significant difference was reported for the

five outcome groupings mentioned above, it is apparent that the expected and actual outcome means are hovering in the range of slight degree to moderate degree, even though a number of individual items in the groupings demonstrate higher mean values. So, although it can be concluded that there is a statistically significant difference between expected and actual outcome for the five groupings, it appears that the means are relatively low or at best moderate for both expectations and actual outcomes in terms of the scale provided. No inference can be drawn from the numerical value of individual means as to the relative importance of any of the groupings. However, it is apparent that the rank and file, in both union and non-union settings, generally expected little outcome, as a result of participating and, although they experienced significantly more than expected, that experience was still moderate. From a company point of view, the moderate value of the means for actual outcomes raises a further question as to whether the problem-solving programs are providing the kinds of experiences for participants that management had envisioned in their design.

The third objective of the study was to explore whether union and non-union participants differed between expected

and actual outcomes. From Table 31, the MANOVA results for Union Membership indicate only two groupings (Negotiable Collective Bargaining Issues and Information About Company) which show a statistically significant difference.

Although union membership for these two category groupings has a significant effect, interpretation of these results must take into account the possible factors underlying union and non-union differences. In part, the differences may be due to specific designs or guidelines of the programs. As mentioned in Chapter IV, the significant difference in Information About Company was largely attributed to one of the union firms having, as one of its major goals, receipt of more information about companies making similar products. As was also mentioned, the differences in the Negotiable Collective Bargaining Issues grouping might be attributed to the written guidelines in the two non-union firms which restricted discussion about supervisors and about individual jobs in problem-solving meetings.

If program design and guidelines account, in large part, for the union and non-union differences, then it is questionable that union membership, per se, influences these differences. Although significant differences occurred in the two category groupings, given the above

reasons for the differences, it may be fair to speculate that mean responses of union firms, overall, may not differ significantly from non-union responses.

Implications for Further Study

In Chapter II, the literature relating to QWL efforts was reviewed. Presented were some general categories of current research efforts which included QWL and Organizational Change, QWL and Union issues, and QWL and Evaluation issues. The review of the literature revealed that extensive speculation exists as to the outcomes associated with QWL participation, and that outcomes most often have been studied from a managerial point of view. Of particular interest to the research community has been the relationship between QWL and productivity. Studies which have attempted to measure this relationship (Katz, Kochan, and Gobreille, 1983; Rosenberg and Rosenstein, 1980; Schuster, 1983) clearly indicate that a major perceived outcome of QWL programs, from a managerial point of view, is that of increased productivity.

Other outcomes of interest to management are suggested through the evaluation criteria for QWL programs provided by Wood, Hull, and Azumi (1983). These criteria include the measurement of productivity, product quality, cost savings,

attendance, and worker morale.

Management related outcomes have also been addressed in two studies which focus on managerial participation at two different organizational levels. Klein (1984) focused on supervisors and QWL participation, and Schlesinger (1984) discussed middle level managers and problems associated with QWL participation. All of the studies mentioned above are linked by interest in QWL programs and managerial concerns.

The studies which include non-managerial perceptions (Dyer, Lipsky, Kochan, 1977; Holley, Feild, Crowley, 1981; Kochan, Katz, and Mower, 1984; Ponak and Fraser, 1979) as elaborated on in Chapter II, focus on which issues <u>should</u> or <u>might</u> be addressed (and to what extent) in QWL programs. Even though, as previously argued, the "issue" approach seems somewhat limited in perspective, one of the contributions of the current study has been clarification as to which issues are actually addressed and which major issues (as alleged by the above-mentioned authors) are not being addressed--or addressed only partially. In particular, my findings support the contention, of the former studies, that traditional "bread and butter" issues are not being addressed in QWL problem-solving programs.

Further, based on the results reported in this study, it is now possible to expand our understanding of what these programs offer, from the rank and file individual's point of view. A major contribution of this study, following the lead of the seminal work by Kochan and his group, is the reduction of speculation regarding what it is that individuals perceive as outcomes associated with participation. There are several ways in which the findings can be utilized for further research.

From an organizational change point of view, the results of the study may offer the following for further research. Though increased productivity appears to be a selling point when targeted at organizational decision makers in order to implement problem-solving groups, individual participants appear to lack strong commitment to this goal. These participants, at least at the rank and file level, talk not of increased productivity as a goal, but rather of "getting things done". It may be that "getting things done" has little, if anything to do with increased productivity. For example, the development of a plan to redesign an office may make the accomplishment of work more convenient, but may add little toward increased productivity of workers. The conceptualization and understanding of these programs by organizational designers and management

consultants may find the identified outcomes in this study an impetus to rethinking what these particular programs are intended to do versus what the individual participants, at least at this level of the organization, indicate they actually experience. On the other hand, the emphasis on productivity may be too vague or beyond the time horizon of the rank and file. Therefore, management emphasis on task orientation may provide expedient short run goals for participants that may eventually result in increased productivity.

Organization researchers and change agents could use the outcomes identified by the rank and file as a starting point for exploration into how participants, at different levels of the organizations, experience program participation. A valuable research experience could be achieved by asking the same questions to supervisors, managers and plant managers. Outcome evaluation at major organizational levels could assist in the development of a more comprehensive conceptual model which includes perceptions of program participation throughout the organizational hierarchy. The building of a model could help explore the similarities and differences in perception of problem-solving groups, and could help in the identification

of and accounting for problems and successes relating to the programs.

Consultants could utilize the six participant-identified outcomes in designing, with management (their clients), the goals of the programs. For example, how much emphasis does a company want to place on Personal Skill Development? How much Collective Influence does a company want to result from problem-solving group programs? Does a company envision collective influence relating to actual decision-making powers for groups, or do they see problem-solving groups serving as group suggestion systems?

In addition, QWL consultants and QWL company coordinators might utilize the results from this study for input toward the improvement of current problem-solving programs. Participants' suggestions of ways to improve the problem-solving process (more time needed; better cooperation from management; more involvement by all group members; improving the ability to focus better on problems) appear to be four suggestions which could be readily addressed. Since the results of the study regarding participants' overall satisfaction with the programs (Table 30), in the main, were positive, attention to these four areas might even contribute to greater satisfaction with problem-solving group participation.

From the union perspective, reaction to QWL programs has, in part, centered on concern for the potential of these programs to serve as a union-busting device by replacing the traditional collective bargaining structure with another structure in order to resolve worker issues. The results of this study provide a basis for further exploration of this issue. In particular, the identification of the outcome of Collective Influence merits further investigation. If individual participants experience a sense of collective influence, which lends towards "getting things done", to what extent, if any, does this undermine the grievance structure which is already in place? Traditionally, individuals utilized the grievance process to address existing problems in the workplace. If the problem-solving groups become the means for problem resolution, will the steward's role and the grievance procedures become redundant? What implications does this have for the union?

The outcome for Personal Skill Development could be looked upon as a plus or a minus from the union perspective. The development of individual participants' communication and interpersonal skills is difficult to perceive as anything but a plus. However, if the training which surrounds the development is solely designed and developed

by management, the concern here, from the union perspective, is that the results could influence participants to more greatly identify with management and management concerns. This is also relevant for the outcomes of Information About the Company and Information About the Job.

Based on the mean results for actual outcomes experienced, the question arises as to whether participation by the union (or even the company) may be worth the time and effort expended for what appears to be rather mediocre outcomes from problem-solving groups, from the individual participant point of view. However, because of the relative newness of these programs and the lack of longitudinal analysis, additional research is needed to evaluate these programs over the long term.

Finally, the results of outcome identification from the participant point of view can be utilized to expand upon current criteria for quality of worklife program evaluation. As mentioned in the literature review, Wood, Hull, and Azumi (1983) have set down criteria for problem-solving program evaluation which reflect managerial-identified outcomes. The rank and file outcome identification can contribute to widening the scope of evaluation of the programs, and build further evaluation criteria. The questionnaire, itself, serves as a useful tool for outcome evaluation of other

problem-solving groups in the future. The six outcome category groupings may provide additional "outcomes" related to the individual experience.

In summary, the findings reported in this study have the potential to stimulate much needed further research in problem-solving group processes in organizations.

Additional Considerations

The problems associated with eliciting cooperation from companies, in order to conduct research on problem-solving groups, are many. A few comments on the difficulties encountered during the research process could serve to highlight potential pitfalls other researchers might avoid, and could also raise some general concerns about problem-solving groups in organizations.

Many other companies --17 to be exact-- were approached, over a period of six months, where the author requested information about their problem-solving groups and sought agreement to participate in the study. Although interest was expressed by several QWL program coordinators, formal approval was required, either by steering committees or by higher level managers in those firms. After review of the questionnaire some firms, previously positive, declined to participate further. The major reason cited was the

potential of the questionnaire for raising worker expectations. Specifically, the firms reacted to questions which referred to pay, promotion, and job security--the focus of questions in the Negotiable Collective Bargaining Issues grouping. It is not surprising that only non-union firms declined to participate because of these questions. Reviewers of the questionnaire in the union firms did not object to the questions, most likely because these issues are openly discussed in the collective bargaining process.

It is certainly understandable that questionnaires could affect worker expectations. However, underlying the concern for raised expectations by management may be a much larger issue. That issue centers on the degree of participation and the kind of participation that management truly wants from workers. So much of the QWL literature is laden with phrases like "increased trust", "participation in decision-making", and "worker empowerment". If, indeed, these phrases reflect the ideology surrounding worker participation programs, how can they be realized when the design and structure of QWL programs restrict and regulate topics for discussion? Time after time during site visits, the message revealed by management was "We want your involvement and input--but only in certain limited areas and

ways." The current literature on QWL fails to capture what could be called "the limits of participation." There is definitely a need for further exploration into what it is that these programs are actually doing, and what management is using them for.

Another realization that surfaced during the process of gaining firm participation in the study centered on the fragility of most of the problem-solving programs. For example, in one unionized firm, the problem-solving program was "suspended" during contract negotiations. Although the program had been jointly agreed upon by management and the union, when difficulties arose between the two parties, the status of the program became dependent on the results of negotiations. The abrupt stoppage of a program obviously has consequences--for the program in general and, certainly for the participants.

Another example of the fragility of these programs was evidenced in a company which originally agreed to participate in the study. One month after agreement was given, the entire QWL program was terminated. The reason given was that the company was in financial difficulties and workers could no longer afford the time away from their routine tasks. Management in another company, which chose not to participate due to the questionnaire content,

abruptly changed problem-solving group meetings from once a week to less than twice a month. The reason given was that "too much time was spent away from work."

These examples serve to highlight how easily these programs may be terminated or altered. The impact that such changes have on those who have participated has not been addressed. Based on the results of this study, which indicate that individual participants are experiencing positive outcomes (personal skill development, information about the company and job, some changes in their feelings about work), one wonders what feelings and thoughts are experienced by participants when the programs fade away.

Another concern which is problematic for researchers studying problem-solving groups also centers on the fragile nature of individual problem-solving groups. The number of problem-solving groups in companies seem to change on a frequent basis. A program coordinator typically describes the program as having "between __ and __ groups." In one company, the initial number of groups mentioned was between eight and twelve. A visit to the company two months later revealed the number of groups to be between three and five. There are many reasons given for the decline or increase in problem-solving groups, including individuals transferred to

other departments, groups running out of ideas, supervisors resisting groups in their departments, and layoffs. In one company that experienced major layoffs, the program coordinator said that "the program simply walked out the door." Whatever the reasons, researchers on problem-solving group processes must be prepared to deal with an enormous amount of uncertainty with respect to these programs.

Finally, another major concern about problem-solving programs became evident throughout the duration of the study. Because problem-solving programs in most organizations follow certain "packages", a fixation on process seems to have resulted. Discussions with coordinators and participants tended to center on techniques and tools of problem-solving. Perhaps this is due to the fact that many programs are in their early stages. Yet, the question arises as to whether the focus of these programs will continue to center on the process itself. It may be that, as long as these "packaged" programs, with a "one-size-fits-all" mentality, are the basis for problem-solving groups, programs will remain myopically focussed on process.

The opportunities for further research are many. The results of this study indicate that problem-solving groups do provide several positive outcomes for individual participants. Further exploration is now needed as to how and in what other ways those outcomes might become available to employees in today's organizations.

APPENDIX A

INTERVIEW QUESTIONS

INTERVIEW QUESTIONS

1. What made you decide to volunteer to participate?

2. What did you, as an individual, expect to gain from participation?

3. Originally what did you think the problem-solving program would provide to you, to others, to the company?

4. Since you have been participating in the problem-solving program, how would you describe what has occurred for you?

5. Why do you think others participate in the program?

6. How, if at all, has your work changed as a result of participation?

7. Why do you continue to participate?

8. If a person who was not participating came to you and asked you why he/she should participate in the problem-solving program, what would you tell him/her?

APPENDIX B

QUESTIONNAIRE

UNIVERSITY OF MASSACHUSETTS
AT AMHERST

School of Management
Amherst, MA 01003
(413) 549-4930

Ph.D. Program

PROBLEM SOLVING GROUP RESEARCH PROJECT

You are being asked to participate in a survey regarding your problem-solving group experience within your organization. The following survey is being distributed at several companies which have similar problem-solving group programs.

Please do not write your name or any form of company identification on the survey. Your individual responses are confidential.

In the survey you are provided with a list of statements. The statements appear on the left hand side of the page (an example below). Each statement can be thought of as an outcome that might be associated with problem-solving group participation. You are asked to give two responses for each statement. In the first column you are asked "to what degree did you expect this outcome to happen" prior to your participation in problem-solving groups. In the second column you are asked "to what degree has this outcome actually happened" since participation in problem-solving groups. You are asked to circle one response in each column.

In the example below the statement is "receipt of more information on ways to improve product quality."

Outcome Statement	EXPECTED Before your participation in problem-solving groups, to what degree did you expect this outcome to happen?	ACTUAL After participation in problem-solving groups, to what degree has this outcome actually happened?
	1 not at all 2 slight degree 3 moderate degree 4 high degree 5 very high degree	1 not at all 2 slight degree 3 moderate degree 4 high degree 5 very high degree
Receipt of more information on ways to improve product quality	1 2 3 4 (5)	1 (2) 3 4 5
	This example indicates that to a very high degree the individual expected "receipt of more information on ways to improve product quality."	This example indicates that "receipt of more information on ways to improve product quality" has actually occured to a slight degree.

When you are finished with the survey, please place it in the attached envelope, seal it, and return it to the University of Massachusetts representative.

Thank you for participating in the survey. It is our hope that the results of the survey (to be provided to all participating organizations) will help us all in better understanding group problem-solving programs.

Pamela D. Sherer

For each outcome, please circle what you expected and what actually happened. Please respond to each statement.

Outcome statements:

	Before participation in problem-solving groups, to what degree did you expect this outcome to happen?					After participating in problem-solving groups, to what degree has this outcome actually happened?				
	not at all	slight degree	moderate degree	high degree	very high degree	not at all	slight degree	moderate degree	high degree	very high degree
1. Receipt of more information about how my job fits into the overall production process	1	2	3	4	5	1	2	3	4	5
2. Receipt of more information about how other people's jobs relate to what I do on my job	1	2	3	4	5	1	2	3	4	5
3. Receipt of more information about the product(s) I am involved in producing	1	2	3	4	5	1	2	3	4	5
4. Receipt of more information on how decisions are made at different levels of the company	1	2	3	4	5	1	2	3	4	5
5. Receipt of more information on how decisions are made which directly affect my own work group	1	2	3	4	5	1	2	3	4	5
6. Receipt of more information on how my company compares to others making similar products	1	2	3	4	5	1	2	3	4	5
7. Receipt of more information on ways to improve product quality	1	2	3	4	5	1	2	3	4	5
8. Receipt of more information on how pay is determined in my company	1	2	3	4	5	1	2	3	4	5
9. Receipt of more information on the financial conditions of the company	1	2	3	4	5	1	2	3	4	5
10. Increased awareness by management about particular problems involved in my own job	1	2	3	4	5	1	2	3	4	5

(Questionnaire continued)

11.	Increased awareness by management about problems of my particular work group	1	2	3	4	5	1	2	3	4	5
12.	Formal training in group problem-solving skills (such as brainstorming, communication skills, etc.)	1	2	3	4	5	1	2	3	4	5
13.	Formal training in statistical skills useful in group problem-solving	1	2	3	4	5	1	2	3	4	5
14.	Training in specific job-related skills useful to perform other different jobs in the company	1	2	3	4	5	1	2	3	4	5
15.	Improvement in my own speaking and writing skills resulting from group participation	1	2	3	4	5	1	2	3	4	5
16.	Extra income from participating (pay raise, bonus, other financial incentives)	1	2	3	4	5	1	2	3	4	5
17.	Personal contact with more people in other parts of the company	1	2	3	4	5	1	2	3	4	5
18.	More opportunities for promotion in the company	1	2	3	4	5	1	2	3	4	5
19.	Increased confidence in my ability to get along with and influence others	1	2	3	4	5	1	2	3	4	5
20.	Increased awareness of my personal contribution to the company by upper management	1	2	3	4	5	1	2	3	4	5

(Questionnaire continued)

21.	Increased job security because participation makes the company see me as more important than before	1	2	3	4	5		1	2	3	4	5
22.	Increased job security because my activity in problem-solving groups contributes to better decision-making and therefore makes the company more profitable	1	2	3	4	5		1	2	3	4	5
23.	Projects proposed by groups to be taken more seriously by management than those previously proposed by individuals	1	2	3	4	5		1	2	3	4	5
24.	Issues previously unnoticed by management to be made more visible by problem-solving groups	1	2	3	4	5		1	2	3	4	5
25.	Problem-solving group activity to be more effective than individual activity, in influencing management to implement changes in the work environment	1	2	3	4	5		1	2	3	4	5
26.	Problems concerning my immediate work area to be discussed by my problem-solving group	1	2	3	4	5		1	2	3	4	5
27.	Issues concerning my supervisor's performance to be discussed by my problem-solving group	1	2	3	4	5		1	2	3	4	5
28.	Increased trust among workers and management as a result of problem-solving group activities	1	2	3	4	5		1	2	3	4	5
29.	Items concerning the design of individual jobs to be discussed by my problem-solving group	1	2	3	4	5		1	2	3	4	5
30.	Increased positive attitude toward my job as a result of cooperative activity within my problem solving group	1	2	3	4	5		1	2	3	4	5
31.	Increased morale as a result of management support of my group's project recommendations	1	2	3	4	5		1	2	3	4	5

(please turn to next page)

(Questionnaire continued)

Section II: Please circle one response for each of the following questions:

	Very Dissatisfied	Dissatisfied	Satisfied	Very Satisfied
1. All in all, how satisfied are you with what you have gotten out of participating in the problem-solving program?	1	2	3	4
2. All in all, how satisfied are you with the way the problem-solving groups have worked out so far?	1	2	3	4

IN A FEW SENTENCES WOULD YOU PLEASE ANSWER THE FOLLOWING:

3. What is the best (most positive) result from participating?

---

4. What is the worst (most negative) result from participating?

---

5. How could your problem solving group function better?

---

6. How many years have you been with the company? _____

7. Sex: Male___ Female_____

8. Age: 18-25___ 25-30____ 30-35____ 35-40____ 40-45_____ 45-50+_____

9. How long have you participated in your company's problem-solving program?
under 1 year_____ 1-2 years_____ more than 2 years_____

10. Have you participated in a management presentation? yes_____no_____

11. Are you a member of a union? yes_____ no_____

12. About how many projects have you worked on within your group?
1-3___ 3-5___ 5-7___ 7-9___ 10 or more_____

Thank you for your assistance

APPENDIX C

FACTOR STRUCTURE (LOADINGS) MATRIX FOR VARIMAX ROTATED FACTOR SOLUTION FOR ACTUAL OUTCOME RESPONSES

FACTOR STRUCTURE (LOADINGS) MATRIX FOR VARIMAX ROTATED FACTOR SOLUTION
FOR ACTUAL OUTCOME RESPONSES

OUTCOME STATEMENT NUMBER	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6
1. Info/my job	.14	.05	.75	.03	.12	.05
2. Info/others's jobs	.05	.12	.77	.06	.11	.11
3. Product Info	.05	.25	.43	.12	.36	.07
4. Info/how decisions made	.23	.16	.16	.02	.63	.00
5. Info/decisions/affect me	.14	.05	.22	.14	.72	.12
6. Info/other companies	-.07	.37	.34	.19	.17	.17
7. Info/product quality	.26	.25	.26	.19	.33	.28
8. Info/pay determined	-.05	.23	.25	.02	.13	-.06
9. Info/company finances	.14	.24	.42	.10	.09	.01
10. Mgmt awareness/my job	.39	.08	.28	.18	.15	.18
11. Mgmt awareness/work group	-.44	.16	.08	.12	.30	.17
12. Train/problem-solve skills	.44	.08	.00	-.06	.38	.30
13. Train/statistical skills	.13	.20	.18	.19	.08	.14
14. Train/other jobs	.05	.22	.39	.15	.12	.16
15. Speak/Write Improvement	.17	.35	.16	.37	.22	.28
16. Extra Income	-.03	.54	.08	-.01	.00	.00
17. Contact/others in company	.15	.14	.13	.17	.05	.63
18. Promotion opportunities	.08	.53	.10	.20	.11	.17
19. Increased confidence	.39	.15	.19	.33	.02	.46
20. Mgmt aware/my contribution	.32	.24	.12	.22	.22	.46
21. Job security/my contribution	.21	.72	.11	.14	.12	.29
22. Job security/firm/profitable	.25	.69	.13	.09	.09	.01
23. Seriousness/mgmt/by group	.71	.15	.14	.05	.10	.22
24. Visibility of Issues/group	.78	-.01	.14	.11	.02	.14
25. Group/mgmt implement change	.74	.14	.10	.26	.21	.10
26. Discuss/immediate wk area	.57	.14	-.18	.21	.13	-.09
27. Discuss/supervisor perf.	.03	.18	.02	.00	.05	.29
28. Increased trust	.26	.12	.05	.37	.16	.33
29. Discuss/desion ind. jobs	.11	.13	.03	.20	.11	-.02
30. Positive attitude/job	.24	.21	.07	.82	.05	.18
31. Increased morale	.37	.03	.15	.54	.11	.15

APPENDIX D

EXPECTED AND ACTUAL MEAN SCORES FOR UNION AND NON-UNION RESPONDENTS

EXPECTED AND ACTUAL MEAN SCORES FOR
UNION AND NON-UNION RESPONDENTS

Outcome Statement	Union n=78		Non-Union n=73	
	Exp	Act	Exp	Act
1. Info/my job	2.87	3.02	2.84	2.90
2. Info/others's jobs	2.64	2.97	2.78	3.06
3. Product Info	2.98	3.16	3.02	3.04
4. Info/how decisions made	2.65	3.05	2.65	2.95
5. Info/decisions/affect me	2.85	3.26	2.78	2.87
6. Info/other companies	2.12	2.47	2.08	1.95
7. Info/product quality	3.16	3.30	3.13	3.05
8. Info/pay determined	1.98	1.98	2.21	2.21
9. Info/company finances	2.20	2.70	2.49	2.64
10. Mgmt awareness/my job	2.76	3.19	3.12	3.39
11. Mgmt awareness/work group	2.87	3.16	2.98	3.17
12. Train/problem-solve skills	2.73	3.59	2.84	3.49
13. Train/statistical skills	2.53	2.82	2.58	3.06
14. Train/other jobs	2.37	2.41	2.42	2.24
15. Speak/Write Improvement	2.23	2.67	2.45	2.90
16. Extra Income	1.50	1.44	1.58	1.65
17. Contact/others in company	2.56	2.98	2.63	2.86
18. Promotion opportunities	2.01	1.94	2.31	2.06
19. Increased confidence	2.75	3.06	2.64	3.00
20. Mgmt aware/my contribution	2.44	2.80	2.67	2.58
21. Job security/my contribution	2.23	2.21	2.16	1.97
22. Job security/firm/profitable	2.38	2.25	2.41	2.37
23. Seriousness/mgmt/by group	2.80	3.29	2.97	3.53
24. Visibility of Issues/group	2.79	3.43	3.09	3.58
25. Group/mgmt implement change	2.85	3.46	3.08	3.61
26. Discuss/immediate wk area	2.82	3.33	2.93	3.58
27. Discuss/supervisor perf.	2.26	2.23	1.63	1.76
28. Increased trust	2.52	2.65	2.63	2.61
29. Discuss/design ind. jobs	2.51	2.60	2.23	2.31
30. Positive attitude/job	2.83	3.05	2.79	3.11
31. Increased morale	2.82	2.80	2.89	2.91

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