

Looking Closely at Quality Circles: Implications for Intervention

Martin L. Abbott
Seattle Pacific University

ABSTRACT

This article explores quality circles (QCs), a popular type of work group employed extensively in business and industry. It is noted that several empirical studies point out the failure of QCs to achieve desired outcomes. On the basis of the findings of a study involving QCs in an electronics manufacturing firm, three categories of QCs are identified: management dominated QCs; stable QCs; and QCs in crisis. The article suggests that practitioners should recognize the complexity of QCs and focus intervention efforts upon individual, QC group, and organizational levels of analysis.

A relatively new and innovative type of work group known as Quality Circles (QC) has become increasingly popular in American business and industry. It has been reported (Main, 1984) that over 2000 American companies hold membership in the International Association of Quality Circles (IAQC). Lawler and Mohrman (1985:66) estimate that over 90% of Fortune 500 companies have QC groups, including, "IBM, TRW, Honeywell, Westinghouse, Digital Equipment, and Xerox." Smeltzer and Kedia (1985:30), citing the *Quality Circle Journal*, note that more than 7000 American companies have started QCs within the past 5 years.

Quality circle practice is not limited to industry, but is represented in such widely varying contexts as: banking, health care (e.g., Goldberg and Pegels, 1984; Orlikoff and Snow, 1984), branches of the armed forces, and is especially

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Correspondence to: Martin L. Abbott, Department of Sociology, Social and Behavioral Sciences, Seattle Pacific University, Seattle, WA 98119.

growing in educational institutions (e.g., Bonner, 1982; Chase, 1983). It would appear that the phenomenon known as Quality Circles is geometrically progressing and, according to Ouchi (1981:261) is "in danger of becoming the management fad of the eighties."

This paper has several aims. First, QCs are explored in order to provide practitioners and clinicians with current information about this increasingly popular form of work group. Second, the findings of a study of QCs in an electronics manufacturing plant are reported in order to contribute to the scarce empirical data on QCs. Third, the primary focus of the paper is to suggest specific intervention approaches which are linked to different analytical levels of QC programs (individual, QC group, and organizational levels). Although QC use is expanding, much of the literature speaks to the potential for failure to achieve the intended outcome. By looking closely at QCs, researchers, practitioners, and clinicians may come to understand them better, and thus be better prepared to intervene for constructive and positive change.

THE PRACTICE OF QUALITY CIRCLES

Although there are various definitions of quality circles, the following by Gibson (1982) may be considered standard:

Quality circles are small groups of individuals who do similar work, who volunteer to meet on a regular basis to be trained to identify problems in their work areas, analyze causes, implement and track solutions, measure results and communicate recommendations and results to management. (from Gibson, 1983:487)

It is difficult to account for the stylishness of QCs; however, their popularity may be loosely attributed to two factors: 1) the attempt to bolster productivity, improve work satisfaction, and reduce other job-related costs (e.g., absenteeism, and inferior product quality); and 2) the attempt to promote the ideals of industrial democracy.

A review of the recent literature on quality circles reveals a paucity of empirical analyses. Although there are many published accounts on the subject, few studies have approached QCs using systematic social science methodology (see Ferris and Wagner, 1985:155; Mohrman and Novelli, 1985:93).

Several empirical studies point out the failure of QCs to achieve desired outcomes. For example, Mohrman and Novelli's (1985) study of QCs in a warehousing operation concludes that the assumed links between QC participation and attitudinal and productivity outcomes are not well established. The authors suggest that attitudinal improvements due to QC participation may not lead to "improvements in productivity and attitudes of the workforce as a whole"

(p. 109). In like manner, Ferris and Wagner's (1985) analysis based upon social science research, challenges some widely held assumptions regarding QCs. They conclude that assumptions about the linkage between QCs and group performance, productivity, and desire for participation, cannot be made without reservation.

The disparity between the limited research activity and the widespread use of QCs is most noticeable in the many anecdotal accounts of the effects of QC programs. Most of these accounts are reports by practitioners discussing the benefits of QC, or at least the elements of the program which can lead to success. Although many of these accounts cast QCs in a positive light, many conclude that QC programs can, and do, fail to achieve positive outcomes. Problems with QCs are not confined to this country. For example, according to Cole (1981), only about one third of the circles established in Japan are doing well.

Most of the recent literature on QCs attempts to identify the potential reasons for failure and to prescribe procedures for success. Among the key elements of success noted by various authors are: **gaining management support, and provision of adequate training for managers, leaders and facilitators (Metz, 1982); development of adequate communication (Ingle, 1982); and creation of the proper "atmosphere" for the programs (Ingle, 1982; Widtfeldt, 1981).**

Management is frequently implicated in both success and failure. Many of the recent reviews of QCs note that **management is a crucial link in the ability of the QC to produce significant results.** Speaking broadly of the work ethic in the American workplace, Yankelovich and Immerwahr (1984) point out that it is management which has failed (but which is needed for success) in implementing programs which can garner worker commitment. The authors suggest that **managerial resistance is linked to matters of authority, status and fairness.** Ingle (1982) and Jones (1983) also note that **management fears loss of authority and power.**

The IAQC report by Gibson (1983) is more specific in identifying potential reasons for managerial difficulties in QC programs. In this report, the author lists the following problem areas: lack of support by middle management; slow management response to circle recommendations; apprehension or suspicion about management motives; and problems chosen by management. **Other accounts point out that managers may be using QCs for their own purposes** (Thackray, 1982).

A STUDY OF A QUALITY CIRCLE PROGRAM

Several research questions were explored in a study of quality circles in an electronics manufacturing organization. Data were collected through questionnaires, interviews, and observations, to test the widely held assumption of an automatic linkage between worker participation and outcomes such as job sat-

isfaction and increased productivity. Blumberg's (1968) analysis represents a classic statement of this relationship. More recently, the studies by Ferris and Wagner (1985) and Mohrman and Novelli (1985) challenge this assumption, and suggest that these assumed benefits of participation provide the rationale for many QC programs. Locke and Schweiger (1979) also address this issue, concluding that about 40% of laboratory, correlational, and field studies demonstrate no superiority of participation in decision making upon satisfaction.

Data for the current study were obtained from two production areas within a major division of a large electronics manufacturing firm. These production units manufacture various electronic display systems and electronic peripheral processing equipment. Although each area produces different instruments, the areas are linked to a common management structure, and job classifications are the same.

The study site has used the quality circle worker participation program since 1979. Quality circles emerged largely from another worker participation program which began in 1975. Since their inception, QCs grew steadily until workforce reductions and reorganizations occurred during the Fall of 1981. From then until now, QCs have been reduced in number to about twenty. The study was based upon ten circles which were involved in all phases of the production process (assembly, test, and inspection) of various electronic instruments. Membership ranged between three and twelve with a mean size of about five. The groups differed in terms of how long they had functioned, with a mean length of about thirteen months.

Findings for this study can be analyzed by reporting both questionnaire data and data based upon interviews and observation. An analysis of this information is then used as a basis upon which to propose a meaningful avenue for clinical intervention into QCs.

Questionnaire Findings

Data analysis showed no clear linkage between QC participation and job satisfaction. QC members and nonmembers did not differ on these measures, suggesting that the assumption of an automatic linkage between participation and satisfaction is unwarranted. This finding is supported by the studies of Ferris and Wagner (1985) and Mohrman and Novelli (1985), which were reviewed earlier.

In addition to the overall participation-satisfaction test, several analyses addressed the issue of the mediating effects of desire for, and attitudes toward, participation. These findings led to the emergence of several suggestions regarding the overall relationship between worker participation and job satisfaction. First, there appeared to be positive regard for worker participation programs in general; however, the QC program in place was unable to promote general job

satisfaction. Second, the management structure may have partially obstructed the QC program from reaching its full potential. Third, "desire for participation" was found to be an important variable in terms of the overall relationship between QC participation and job satisfaction. This suggests that subsequent tests of this relationship should take this variable into account. Dean's (1985) study of QCs in a manufacturing corporation supports this finding. Dean concluded that those people who were more likely to join QCs desired greater organizational involvement and believed that circles would be instrumental in making improvements.

Taken together, the questionnaire data challenge the assumption of a simplistic relationship between QCs and such outcomes as job satisfaction. Further, it is apparent that workers' attitudes toward the QC must be taken into account in order to provide an accurate indication of QC success. The connection of this individual level of analysis of worker attitudes with QC program intervention is addressed more fully below. First, however, data from interviews and observations are discussed.

Interviews and Observations

One finding that clearly emerged from the interviews and observations was the extent to which workers viewed themselves in contradistinction to managers, with respect to participation in decision-making activity. Although workers desired participation both because of their direct contact with the work and because it had an impact on their subjective definitions of importance, they nevertheless accepted, in theory, the legitimacy of a management-controlled decision-making structure. This finding is consonant with Witte (1980:38) who noted "workers' natural acceptance of hierarchical authority and their perception that obedience to authority is an integral part of one's job." Leitko et al. (1981) also spoke to this point in their conclusion that workers learn situational adjustment attitudes at work, one of which is the notion that it is the manager's job to manage, and that workers have limited job information from which to make decisions.

The apparent paradox in workers' attitudes—on the one hand desiring participation and on the other hand accepting the legitimacy of a decision-making structure which may not deliver—may be partially explained by the domination by (or unresponsiveness of) managers over decision making at this location. In a sense, managers may have been partially perceived by workers in this study as an active hindrance to decision-making ability.

The primary advantages of QCs included the perception by workers that they could provide a convenient problem-solving mechanism, and that they could provide common ground upon which management and workers could communicate and share information. Among the disadvantages noted were management domination, unmotivated members, and the choice of inconsequential problems.

Ongoing observations of the QC program resulted in the identification of

three categories of QCs: 1) management dominated; 2) stable; and 3) those in crisis. It should be noted that these categories are based upon a small number of circles and cannot adequately capture the dynamics of QC activity. In addition, the issues discussed cannot be considered mutually exclusive, but interactive.

Management Dominated Circles

In a majority of the QC groups observed, manager domination was present in some guise. Many groups could be designated "management dominated," since the managers interfered with the QC meeting process either by overt intimidation or by leadership style. This usually resulted in one or more of the following consequences: 1) obviation of the QC leader's role; 2) suppression of group interaction; and 3) assumption of the central focus by the manager.

Stable Circles

A QC which met regularly, kept on task, maintained good attendance, had fairly open communication, and in which manager domination did not preclude the occurrence of these events was identified as stable. Although the QC members may have had negative attitudes and management domination was present in varying degrees, the groups maintained somewhat steady progress. The stability of these QC groups may be explained in part by the presence of leaders who exhibited good group interaction skills. They maintained a pleasant atmosphere, encouraged open participation, kept the group on task, and, in differing degrees, maintained control in the presence of dominant managers.

Circles in Crisis

Several of the QC groups were largely ineffective and appeared inert. Although these QCs continued to meet with varying degrees of regularity, the overall group process deviated from the initial intent of quality circles (according to the definition of QCs). This was evidenced by the following factors: group meetings were irregular or frequently cancelled; attendance was erratic; membership was shrinking or very low; the group had difficulty attracting new members; there was considerable difficulty choosing new projects, or finishing current ones; participation in ongoing projects waned; leadership appeared uncommitted; and the membership was generally lethargic in terms of their overall motivation.

Discussion

Based upon this study of a QC program, it is suggested that practitioners need to address QCs as a multifaceted process. As noted, QCs do not necessarily lead

directly to assumed outcomes. **The attitudes and perceptions of individual workers toward QCs must be taken into account.** Further, QCs develop different activities and dynamics. Successful QC programs must recognize these **differences**, as well as the **organizational conditions** which are intimately related to QC groups. Quality circles represent an important potential for workers and the organization which supports them. However, successful programs require **on-going critique, and analytical techniques** which can be provided by clinical interventionists. The next section of this paper addresses QC intervention through an analysis of problems and solutions which arise at each analytical level of a QC program.

QC INTERVENTION

Attempts to intervene in QC processes for constructive change must begin with the recognition of different levels of analysis. Quality circles are primarily a group phenomenon. However, they are comprised of individual workers, and they take place within an organizational context. As noted earlier, little attention has been directed toward individual workers' attitudes. Recent studies have addressed other levels of analysis, especially the organizational structure. Goldstein's (1985) analysis of "organizational dualism," Meyer and Stott's (1985) three different analytical perspectives of QCs, and Smeltzer and Kedia's (1985) discussion of organizational culture all attest to the importance of viewing the QC as integrally related to its organizational environment.

Constructive intervention may be achieved by considering empirical evidence and suggestions from the literature regarding the QC on individual, group, and organizational levels. Although considered separately, it must be recognized that each level is related to the other in a very complex fashion. Smeltzer and Kedia's (1985) analogy of a rope comprised of single, interwoven strands (used to describe the different aspects of organizational culture) is an apt way to view the interrelationship of the various levels of QC programs. It must also be recognized that each level has its own problems, and therefore, its own specific conditions for solutions.

Problems and Solutions on an Individual Level

Little empirical analysis has been done that focuses upon the individual worker's attitudes toward QCs. Notable exceptions to this lack of research are the study by Dean (1985), discussing the reasons workers give for joining QCs; Mohrman and Novelli's (1985) analysis of the effects of QCs on workers' attitudes; and an article by Ferris and Wagner (1985) reviewing the assumptions underlying workers' desire for participation (among other considerations).

The results of the study discussed in this paper thus join others that focus

on the importance of individual attitudes in understanding QCs. If, on the one hand, workers are committed to the QC process and are satisfied with its operation, the QC will probably have a much greater chance of success. If, on the other hand, workers are not committed to, and satisfied with, the process, the QC will be more likely to experience difficulty, and the nature of the group may change from its initial purpose.

Constructive intervention requires an ongoing program of evaluating individual workers' attitudes. The attempt to ensure salient QC participation would require that practitioners answer such questions as: To what extent do workers feel satisfied with their QC group? To what extent do workers feel manipulated or tricked? How do workers view the contribution to, or domination by, managers in the QC process? To what extent do workers feel that problems chosen are either trivial or significant and meaningful?

The advantage of monitoring individual attitudes is two-fold. First, practitioners would have a knowledge of how workers perceive the program. Although this may appear trivial, it is a crucial issue since QCs are often installed "from the top down," thus effectively obscuring individual commitment to the program. Second, an ongoing check of attitudes would serve as a barometer of QC change. QCs evolve and change. A ready understanding of individual attitude changes would provide valuable insight into potential reasons for QC success or failure. QC groups may also affect individual attitudes, and it is important to establish a plan for assessing these attitudes.

A plan of this nature would require a financial commitment on the part of the host organization. However, the potential increase in understanding and subsequent program changes would have to be considered among financial assets.

Accomplishing this type of intervention program would require specific research expertise and might profitably include a number of different providers. Outside sources, such as a research consultant who is sensitive to the complexities of clinical intervention, is one such provider. Organizational development (OD) staff could profitably be utilized, however, the same sensitivity to intervention issues would be necessary. Gutknecht's (1984) analysis of OD and its implications for clinical sociology provides an excellent discussion of issues which can be related to intervention on an individual level in QC programs.

Problems and Solutions on a QC Group Level

Careful analysis is also crucial on the QC group level since their success or failure, from the organization's point of view, is most commonly identified with group "output." Several studies have suggested that QC groups have "life cycles," or pass through certain stages (e.g., Lawler and Mohrman, 1985; Meyer and Stott, 1985), usually ending in decline. The study reported in this paper also indicates that (perhaps as they evolve) QCs develop their own distinctive styles. That is, at any point in time, QCs are characterized by different activity levels,

participation, and interpersonal dynamics. The different QCs noted earlier (management dominated, in crisis, and stable) represent different QC group typifications. This is an important distinction as QCs will not only experience problems as they evolve, but also problems specific to their type.

Given this distinction, solutions to QC programs need to be customized to the group, and to be dynamic as QC groups change. As with the individual level, careful monitoring is crucial, especially to detect changes in QC functioning. Knowing the QC composition and character can make possible a range of intervention strategies streamlined for a given group. For example, attempts to revitalize QC groups in crisis may include the following: coupling the members with stable QC group members in order to help them observe and model the strengths of other approaches; integrating members from stable QC groups into QC groups in crisis to provide fresh insight into problematic group elements; providing a specific work problem that members of QC groups in crisis may be adept at solving.

Other intervention attempts would, in similar fashion, take as their starting point the specific nature of the QC group. Management-dominated QC groups would profit from specific intervention to change the managers' approach to QC group process. This could be accomplished by training in group dynamics and problem-solving techniques, with the specific intent of allowing QC groups to operate autonomously, apart from managerial obstruction. Stable QC groups would best be left alone, to the extent that they do not experience internal difficulties.

Several studies in the literature have suggested additional approaches to intervene constructively in QC group operation. These suggestions would be especially helpful if coupled with specific QC types. Meyer and Stott's (1985:42) suggestion of a charter or steering committee may be important here. Discussing the impact of different "interest groups" upon QC operation, the authors note that charters or steering committees can provide support, establish priorities, and prevent QCs from becoming ends in themselves. Viewing this suggestion in light of group differences may yield a strategy of assigning different priorities and involvement that are specific to each type of QC group. For example, stable QC groups might be left to operate autonomously, while the other groups would be given more structured direction.

Due to the specific nature of the overall QC group process, Goldstein (1985:510-514) makes several suggestions regarding the "boundary conditions" for QCs. Among these are the ideas of rotating membership from outside groups; restricting QC activity to idea generation only (and not implementation of ideas); and preference for a convener chosen from the membership to lead, rather than imposing a formal leader upon the QC. While these are excellent suggestions, it would appear that they would be especially efficacious if matched with different types of QC groups.

Along a different line, some studies indicate that QC groups could profitably be merged into different group structures, especially "Self-Managing Teams" (Sims and Dean, 1985), along with other forms of worker participation (Lawler and Mohrman, 1985). Again, viewing this merger of QC groups in light of their specific nature could provide the organization with flexible and dynamic worker participation groups.

All of these ideas imply the existence of a specific organizational structure that can monitor, oversee, and constructively intervene in groups, depending upon their specific circumstances. The same recommendations for experts in the area of clinical intervention is indicated here as with individual-level concerns. The analysis, identification, and facilitation of change for QC groups requires a special sociological fund of knowledge that can be brought to bear upon a concrete set of individual, group and organizational problems.

Problems and Solutions on an Organizational Level

Since the majority of my research was done on the levels previously discussed, this section is based primarily upon observation of QC groups in industry, and suggestions from the literature. Realistically, this may be the most crucial level of analysis since QC groups are vitally linked to the entire organizational environment. Intervention into individual and QC group processes requires some organizational commitment and restructuring. Specifically, attention to the following issues appears to be crucial for the overall success of the QC program: the management role; appropriate organizational climate; rationale for QC program.

The studies cited earlier dealing with problems in management are joined by similar analyses from other authors (Lawler and Mohrman, 1985; Meyer and Stott, 1985; Smeltzer and Kedia, 1985; Thompson, 1982). From my own observation, and drawing from sociological theory, the problem of managers (especially middle- and first-level managers) stems from a problem of meeting multiple, competing expectations ("role strain"). On the one hand, managers are expected to provide and promote greater decision-making power on the part of individual workers. On the other hand, managers must somehow engineer "success" in terms of the criteria for QCs established by upper management, often in the absence of specific training or support. Thus, managers and supervisors fear erosion of their control over the work process because of QCs, but at the same time have come to equate success in the workplace with QC success.

Solutions to this problem are complex, due to authority structures which are frequently based upon hierarchical systems of decision making. Aside from the decision to address the structure of power in organizations, QC programs could profit from providing organizational support and training to managers in terms of QC purpose and operation. The qualified clinician could provide specific

training and resources for managers in the following areas: recognizing different management styles; the nature and dynamics of QC groups; decision-making styles; matching individual managerial style with specific tasks; the philosophy of worker participation; communication skills; and different techniques for resolving role strain.

Organizational-level intervention must take into account the entire nature of the environment in which QCs operate. Smeltzer and Kedia's (1985) analysis of organizational culture specifies several different elements that should be addressed in analyzing QCs: organizational structure, management style, decision making, adaptation to change, labor relations, and commitment. Other studies (e.g., Meyer and Stott, 1985) specify organizational components that must be addressed in order to assess the practicability of QC group success. The addition of individual and group-level knowledge would combine with this macrolevel analysis to provide a comprehensive data base from which to consider QCs. With this information and perspective, the decision to maintain or dismantle QCs, or to phase them into other forms could be more successfully negotiated.

Ultimately, the issue of the rationale for the QC program must be addressed. Solutions to specific QC problems depend upon the reason QCs exist at the particular site. If they have been installed by management, the clinical interventionist must ask a series of important questions. First, were QCs developed due to their fadishness, and must be forced to fit a particular upper management agenda? If this is the case, QC success is more a function of how closely they conform to this agenda than a function of their own dynamics or products.

The overall question to be answered prior to any intervention, however, is whether the QC program has been established to increase true decision-making ability for workers, or for some other purpose. The fact that many QC programs are installed by management without input from workers is testimony to the nonparticipative environment within which QC programs must operate. Rinehart's (1984:89) discussion of QCs as schemes to raise productivity and reduce costs "through the cultivation of cooperation on the shop floor and the appropriation of workers' knowledge" speaks directly to this point. The clinical interventionist must assess the extent to which QCs may be a way of engineering success at the workers' expense, rather than as a legitimate, participative work form. At this level, solutions take less of a specific character and rest with the ability of the clinician to articulate the specific rationale of the program.

CONCLUSION

Quality circles have the potential for both success and failure. Though very popular, QCs have not been subjected to sustained empirical scrutiny. Thus, practitioners are only beginning to identify the dynamics of QCs and the elements that can lead to meaningful and successful work programs. This paper has

suggested several directions for intervening into QC programs. **First, QC programs must be viewed as comprising several different levels of analysis. Successful intervention must take each of these levels into account. Second, each of the levels presents the practitioner with a distinct set of problems.** Third, constructive intervention requires the clinical skills of researchers who are able to address creatively the problems emerging from each of these levels. Last, clinical intervention requires, first and foremost, an analytical way of viewing QCs, which includes proposing specific solutions and asking difficult questions at each level of the program.

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