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Groups: Guidelines Based on Empirical
Research

CEO Publication
G 84-14 (62)

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by

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ABSTRACT

This paper explores the importance of various design
features in employee participation programs. How
the program is designed affects the way the partici-
pation groups function, how well they fit in their
context and how much they accomplish.

INTRODUCTION

Employee participation groups are used on a large scale by organizations as part of efforts to increase productivity, improve quality, enhance quality of worklife, and promote employee involvement. Participation groups have assumed a wide variety of forms and have been used in quite different ways. Sometimes participation groups have been one tactic in an overall organizational strategy to change organizational culture; in other cases groups have been created for more limited purposes, such as solving particular quality or personnel problems. Some organizations have purchased elaborate "packages" from consultants to help them establish participation groups; other organizations have designed their own programs. Some organizations have set up "special" problem solving groups; others have tried to enhance the participativeness of existing work groups.

One of the most widely implemented participation group approaches is Quality Circles (QCs). Although QC programs embody a relatively standard set of design components, many organizations implement "hybrid" approaches, which modify certain aspects of the quality circle model and eliminate or add others. The resultant design tends to be a combination of prespecified design features and local adaptations to the organizational context, resource limitations, and other constraints. Similar empirical diversity can be found among other participation group approaches, such as union-management committees, self-managing work teams, and quality action teams.

Despite widespread adoption of participation group approaches, there has been very little systematic analysis of design options or

empirical examination of the impact of different design features. Unanswered are such important questions as: how frequently should a group meet? How well specified should its mission be? Who should be its members? How important is external facilitation? What differences does training make? Existing research tends either to be case analyses of programs in single organizations, or to be multi-organizational studies of intervention effectiveness that ignore design differences by treating the intervention as a "black box." As a result, practitioners receive little help in deciding what features to include, or what the trade-offs are between various approaches. Also, theorists develop little understanding of group design issues.

The Design of Participation Groups

Organizational systems such as participation group programs are generally designed to accomplish a purpose. The specific objectives of participation groups may vary from organization to organization. Some organizations more fully specify the values and goals of the participation effort than others. In general, however, organizations have in mind some combination of the following three general objectives when they establish participation group programs: (1) the solution of problems; (2) improvements in organizational performance; (3) changes in the organizational culture and climate aimed at better developing and utilizing human resources. Participation groups are established to meet these objectives by fostering employee problem solving, an activity that may not have occurred or may have occurred only to a limited extent prior to the establishment of the groups.

If the participation group process is to accomplish its objectives, group design must enable the groups to overcome two major challenges. First, the groups must become effective at a task--group problem solving--that group members may not have performed previously. Second, they must develop an effective role in their context, the larger organization, which already has an intact decision making structure. This means that the groups must achieve legitimacy, acquire resources and approval for their ideas, and motivate others in the organization to accept the behavioral and procedural changes that are required for successful implementation of group solutions. The external effectiveness of the groups is as critical as the internal effectiveness of the groups in performing their tasks.

Achieving external effectiveness is especially troublesome for participation groups that are designed as parallel (Stein and Kanter, 1980) or collateral (Zand, 1974) to the existing organization. Quality circles are an example of such parallel organizations. They are not designed to replace the traditional bureaucratic structure, but they are intended to supplement it by performing functions that it is not currently performing. Parallel organizational structures are frequently used to initiate innovation in organizations whose operating structures are geared to efficient routine functioning (Zaltman, Duncan, and Holbeck, 1973). Parallel groups have difficulty in achieving contextual legitimacy because the groups have no well-defined and accepted responsibilities in the daily operation of the organization. The groups' efficacy in solving problems and initiating organizational improvements depends on their ability to influence the operating

organization. Explicit attention must therefore be given to their interface with the operating organization.

Some design features of a participation group usually are determined before the group is established, while other features emerge from the group over time as it begins to function and defines its own identity. Design decisions made external to the group and prior to its establishment often include decisions about the composition of the group, its charter, the resources available to it, and its meeting times. Decisions that usually emerge from the group include those concerning the group's performance strategies, its operating objectives, and the norms guiding its behavior. Similarly, the relationship of the group to its external context is influenced by a mixture of prespecified and emergent design decisions.

The general model guiding this study appears in Figure 1. It assumes that participation group programs are organizational innovations, consciously designed to achieve objectives and promote values within the organization. The design of the participation group program affects both the way the group functions and the ability of the group to effect the organization. These in turn determine the effectiveness of the participation group program.

The Study

Background

The study was conducted in nine organizational units of a large multi-divisional corporation. The organizational units were all involved in the design and manufacture of electronic systems or components. Several of the plants were dependent on military or other

government contracts, while others were in market-competitive computer businesses. The study was conducted in 1983, during a time of relative recession in the country. The research sites differed widely in their economic health.

The study was jointly defined by the university research team and by a corporate task force. The task force was explicitly interested in knowledge about how the design of participation group programs influenced program effectiveness. Although all nine research sites used a parallel group approach to participation, the particular design features differed substantially among and even within the sites. The sites differed, for example, in the composition of the groups and in their use of training and external facilitation. The participation programs ranged in age from six months to ten years. The diversity of participation group programs offered a naturally occurring field experiment.

Methodology

Each site was visited at least twice. With the help of a local study group at each site, questionnaire, interview, and archival data were collected over a period of four to ten days. Semi-structured interviews were conducted with 35 to 75 employees and managers at all sites except one (where three interviews were conducted). In addition, readily available archival data about the participation programs, such as reports, newsletters, and training materials, were collected at each site. The interview and archival material provided qualitative data complementary to the survey data.

The total number of questionnaire respondents was 904. This represented a sample of from three percent to 100 percent of employees

at the research sites. Sample sizes varied depending on each site's size, interest in the study, and intended uses of the results. Response rates across sites ranged from 70 percent to 94 percent; the number of respondents per site ranged from 17 to 266. The total sample was well distributed across demographic categories such as age, length of employment with the company, education level, and status in the organization. Of the sample, 52 percent currently were members of one or more participation groups, 14 percent were former members of a participation group, and 35 percent had never been members of a participation group.

Participation Group Program Design Variables

The quality circle model provides a way of conceptualizing the design characteristics of employee participation group programs (Lawler and Mohrman, 1985). QC "packages" based on the model also provide strong recommendations about most of these design characteristics. Although the underlying design principles have evolved on the basis of practical experience, they have received very little testing through empirical research. A number of program design variables derived from the quality circle model were measured for this study, including the following.

1. Values, Objectives, and Goals. Values, objectives, and goals are often mentioned as key design elements. However, there is little agreement on whether it is better to have narrow or broad program objectives and goals. Very focused, and therefore narrow, objectives can provide a clear set of goals for participation groups and thus may effectively channel the groups' energies. On the other hand, a broad range of objectives can appeal to a wide variety of organizational constituencies.

The participation group programs studied had a variety of operational objectives, which in most cases were not formalized. Participation program goals were measured in two ways. First, all survey respondents were asked to indicate which of 15 possible areas of improvement (for example, improved productivity, more interesting jobs, better pay and benefits, trust between employees and management) should be major goals of the program. The number of areas indicated serves as a measure of goal scope. Second, based on the interview data the extent to which participation programs used measurable goals based on organizational performance indicators was determined. Use of such goals explicitly links participation group activities to valued business performance indicators and provides groups with a business-related focus.

2. Volunteerism. Group membership may be voluntary or mandatory. Volunteerism is intended to heighten the motivation of group members and to symbolize the parallel structure, in contrast to the existing structure in which employees perform mostly required duties. During the life of the program, all employees may have the opportunity to volunteer for group membership. This permits the groups to be revitalized periodically through the influx of new members; it also is intended to minimize ingroup-outgroup feelings.

Almost all the participation groups in the nine sites were at least nominally constituted of volunteers. However, variation was found in two design characteristics relevant to volunteerism. First, membership opportunities measured the degree to which survey respondents believed that all employees had a chance to be members of a participation group. Second, on the basis of interview data groups were identified that were

organized around existing work groups. Use of existing work groups
avoids the kind of "special" structure typical of many QC programs. In
addition, membership in work group-based participation efforts, even if
nominally volunteerist, tended to be taken for granted; virtually
everyone in the work groups "volunteered."

3. Facilitation. Specially trained facilitators may be provided
to help the group learn to work together effectively. The variable
facilitation asked group members to indicate whether their group
received assistance from a facilitator at all meetings, at some meetings
(either at early meetings only or some meetings throughout the group's
lifetime), or never.

4. Training. The QC model stresses the importance of training for
participation group members, group leaders, and managers on such matters
as problem solving techniques and group process skills. The variable
training is an index, based on interview and archival data, of whether
relevant training was provided to all group members, group leaders, and
managers at the site, to some people in these categories, or to no one
in these categories.

5. Membership and Resource Diversity. Organizational
interdependencies usually make it difficult for members of one group to
solve work-related problems without the cooperation and support of other
groups. There are two widely used ways to overcome this problem.
First, the group may call on outside resource personnel to attend
meetings when special expertise is needed. Resource diversity was a
questionnaire measure of the number of types of outside resource
personnel (production workers, engineers, supervisors, managers, etc.)
that served as resources to the respondent's group. Second, the group

may actually be constituted of multiple constituencies. Membership diversity was a questionnaire measure of the number of different constituencies that served as members of the respondent's group.

6. Management Responsiveness. Most suggestion programs go to great lengths to insure that management responds positively to ideas and that it takes formal, visible steps to recognize the groups for their accomplishments. Formal recognition was a rating of the number of types of recognition that the participation group program used, based on interview reports. They included formal meetings with top managers or visiting VIPs, publicity about group activities, "trinkets" such as T-shirts and baseball caps, off-site ceremonies such as awards banquets, and provisions in the formal suggestion system permitting groups to win cash awards.

In some cases, participation groups report to management-level groups that are charged with supporting and assiting the lower-level groups. The variable multi-level groups is a rating, based on interview data, of the degree to which this strategy was used for each program.

7. Communication and Record-Keeping Methods. The QC model emphasizes frequent communication by the group with others in the organization in order to keep non-members informed, to gather relevant information, and to minimize ingroup-outgroup feelings. The model also heavily emphasizes the maintenance of records of group meetings as a means of communication with others as well as a means of promoting focused group discussions and followup on decisions. Communication methods was a survey measure of the diversity of communication channels used by the group. Record-keeping diversity was a survey measure of the diversity of types of records maintained by the group. The assumption

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is that multiple communication channels and types of records are likely to enhance the effectiveness of communication within and outside the group.

8. Meeting Frequency. It is reasonable to assume that groups meeting more frequently have greater opportunities to develop problem solving skills and to implement changes. Meeting frequency was a survey measure of whether the participation group met monthly, bi-weekly, or weekly.

This study, then, operationalized and measured the major design characteristics of participation groups. Some of the operational variables are measured at the program level (work groups, training, formal recognition, multi-level committee structure, and measurable goals), while the rest are measured by asking individual program members about the characteristics of their particular group.

Group Functioning Variables

The internal effectiveness of a group in producing its desired output depends largely on three variables (Hackman and Morris, 1975): (1) the skill and knowledge applied to the task; (2) the effort exerted; and (3) the performance strategy used for combining the inputs of various members in working toward shared objectives. Four related aspects of participation group functioning were measured: problem solving skill, intensity of effort, goal clarity, and conflict. These variables were measured by survey ratings by group participants of the characteristics of their participation group.

Contextual Integration Variables

The organizational impact of the participation groups depends on their ability to initiate change which solves problems and improves

organizational performance. Change is more likely to occur in

organizations if the proponents of change (in this case the

participation groups) are able to operate effectively in the larger

organizational context (Kanter, 1983). This includes the abilities to

gain attention and support from key organizational actors, to muster

necessary resources to implement change, and to integrate their own

perspectives with the perspectives and viewpoints of others in the

organization so that the change is acceptable to the critical groups and

individuals who must approve and implement it.

Five aspects of the contextual integration of participation groups

were measured by the questionnaire. Program support was measured by the

degree to which the respondents perceived eight organizational

constituencies as supporting the participation group program. The

constituencies included co-workers, the supervisor, middle managers in

general, top management, division and corporate management, engineers,

the human resource function, and the respondent. Group members were

asked to indicate the level of management responsiveness to their

group's suggestions; all respondents were asked to indicate how much

recognition the program received in the organization. Two additional

scales measured all respondents' views of the program. Program

communication asked all respondents to indicate the extent to which they

felt up-to-date on progress in the program. Group representation

measured the extent to which organizational members believed that the

participation groups were responsive to the viewpoints of non-members.

Outcome Variables

Eight outcome measures were collected. All survey respondents were

asked to assess the impact of the participation group program on fifteen

target areas, corresponding to the list of possible program goals
discussed previously. These fifteen clustered into four impact
variables: impact on company outcomes (productivity, quality, costs,
and absenteeism); impact on extrinsic employee outcomes (pay and
benefits, safety conditions, physical work environment, availability of
tools and equipment); intrinsic employee outcomes (more interesting
jobs, participation in decision making, feelings of involvement, and
development of skills and abilities); and interpersonal climate outcomes
(employee treatment by supervisors and trust between employees and
management). A general program effectiveness scale elicited a
more global reaction to the participation group process, and a
permanence scale measured the extent to which the respondent felt that
the participation groups were "here to stay." Finally, members of
participation groups were asked the extent to which they saw their group
as having accomplishments, and the extent to which they were
experiencing frustration with the participation group process.

Figure 2 provides a full list of the major variables.

Expected Relationships

Based on the model illustrated in Figure 2, the major hypotheses
were as follows. Program design characteristics were hypothesized to be
related to group functioning and contextual integration. Relationships
between particular design characteristics and particular intervening
variables could be predicted. For example, training can be expected to
be strongly related to group skill. The design characteristics may also
have non-obvious effects in practice. For example, when training is
conducted with a large segment of an organizational population, it can
become a ceremonial event that signals management commitment to a new

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organizational direction. It may have effects on the organizational context that are independent of any effects on trainee skills. Thus the general pattern of relationships between the program design characteristics and the intervening variables is as important as the relationships between pairs of variables.

Both group functioning and contextual integration were expected to affect the program outcomes, but group outcomes (group accomplishments and frustration) were expected to be more closely related to group functioning than to contextual integration. Group accomplishments was expected to be related to all group functioning variables, but frustration was expected to be most closely related to group conflict and to the level of management responsiveness.

Analysis and Results

Overview of Results

Two kinds of statistical analyses were used. Correlational analyses tested the relationship of the continuous value design variables to the intervening group and contextual variables (Table 1), and the intervening variables to the outcome variables (Table 3). The correlation coefficients are presented only for relationships which are highly significant ($p < = .001$).

Several design variables were categorical rather than continuous. For example, a location either has measurable goals for its participation groups or it does not. Other categorical variables are workgroup, facilitation, training, multi-level groups and meeting frequency. An analysis of variance test was used to detect differences in the intervening variables between the various response categories for

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these design variables. For example, do respondents in programs with measurable goals differ significantly from those that did not use measurable goals in their perceptions of management responsiveness to the group? Table 2 presents the statistical significance levels for each relationship where there was a difference between groups.

The reported results in most cases are based on a respondent pool of current or past participants, approximately 538 individuals. Many of the design variables and all of the group functioning variables were only responded to by participants with reference to particular groups. The relationships of contextual integration variables to program outcomes are tested using both participants and non-participants, since all organizational members have a perspective on these variables. Table 3 presents these relationships for all respondents and for participants only. Comparing the two sets of correlation coefficients, it is evident that the addition of 366 non-particicants does not alter the relationships.

Relationships Between Design Characteristics and Intervening Variables

In general, the predicted pattern of relationships did emerge. The results will be briefly summarized and discussed for each design characteristic.

1. Goals. Goal scope was not highly related to the intervening variables in general; however, it is significantly correlated with group intensity (Table 1). This suggests that groups that feel they have a broad mandate may be better able to find issues to capture their energies.

The use of measurable goals is related to almost all aspects of effective group functioning and to contextual integration (Table 2).

Explicitly linking the group's activities to workgroup performance measures affords a clear target for the group, and enables it to more fully understand how it might impact business performance. Such measures also allow others in the organization an objective basis on which to judge effectiveness and form opinions of the group, which appears to result in greater support and recognition of the group program.

2. Volunteerism. Respondents in groups which were defined as intact work groups (Table 2) experienced more conflict than those in groups composed of volunteers, probably because some individuals in the group preferred not to be there. On the other hand, intact work group members reported greater management recognition and increased program communication. The use of intact work groups implies a close link to the operating organization, and possibly therefore the attention of the management structure and the organizational communication channels.

The availability of membership opportunities (Table 1) to all interested employees enhanced all aspects of the integration of the groups in their context, probably by eliminating ingroup/outgroup jealousies, underscoring management's commitment, and increasing the number of people who are knowledgeable about the participation group process. Membership opportunities were also significantly, but less strongly, related to internal group functioning. The importance of this variable suggests that participative approaches are most effective if participation is not limited to a select few.

3. Facilitation. Respondents from groups which had facilitators (Table 2) reported higher group skill and more effective program

communication than those which had no facilitation. The effects are greatest when facilitators are present at all meetings.

4. Training. Respondents from locations where the groups and the managers received a great deal of training (Table 2) were higher on both the indicators of group functioning and contextual integration. These relationships represent some of the strongest findings in the study. In separate analyses the magnitude of the relationships of training to group functioning was even stronger in the six locations where the participation programs were mature, thus suggesting that the impact of training grows stronger with time.

Training most likely has a direct effect on the internal skills of the group and on its skills in relating to the environment. It also contributes to management's skills in relating and responding to the groups. In addition, the commitment of training resources is likely to be perceived as evidence that the management is serious about the group participation effort.

5. Membership and Resource Diversity. Results in Table 1 show that the diversity of membership in a group is not significantly related to any intervening variable. In contrast, diversity of resource personnel utilized by the group relates strongly to every contextual integration variable and to all group functioning variables except conflict. The group apparently does need to integrate its efforts and perspectives with those of other groups, and it needs to utilize outside expertise in addressing some problems. However, it does not seem to help to include diverse specialists as group members. Interview findings suggest that resource people often do not want to be members, but may be willing to come to meetings where their expertise is explicitly needed.

Furthermore, the presence of diverse viewpoints, especially if coupled with status differences in the organization, may detract from the cohesion and openness in the group, and make it difficult for the group to decide on a direction.

6. <u>Management Response Mechanisms</u>. The use by management of <u>formal recognition</u> techniques (Table 1) was not significantly related to any internal group functioning variables. It does not seem to be a factor, as had been expected, in reinforcing group effort and therefore contributing to group intensity. Of the contextual integration variables, it was related only to perceptions of program recognition and program support. Such formal recognition apparently was not confused with management responsiveness to group ideas. Formal recognition techniques may therefore be more ceremonial in nature than substantive in imapct.

On the other hand, <u>multi-level groups</u> (Table 2) were significant to group skill and intensity, and to all contextual integration variables except representation of non-members. Management-level groups created to respond to participation group ideas can be powerful symbols of management commitment to the parallel organization. Such groups also can be an important vehicle for various kinds of direct assistance and support for employee groups.

7. <u>Communication and Record-Keeping</u>. The number of communication methods used by a group (Table 1) is related to its intensity of effort and goal clarity, as well as to all five indicators of contextual integration. Record-keeping is among the strongest design predictors of all three measures of internal effectiveness, and is also strongly related to four of the five measures of contextual integration. Keeping

records and communicating are aids in the work of the group and manifestations of its effort. These activities provide tangible evidence and information about what the group is doing for both its members and for outsiders, and make it more likely that others in the organization will pay attention to the group and respond to it.

8. Meeting Frequency. Groups which met weekly or biweekly were experienced by group members as more intense than those which met monthly or less (Table 2). Meeting frequency was also related to group skill, goal clarity, management responsiveness, program communication and the representation of non-member viewpoints.

Participation Program Outcomes

The general pattern of relationships between the outcomes and the group functioning and contextual integration variables is very strong (Table 3). Every pair of variables is significantly related. In general, the group functioning variables, management responsiveness and program recognition have the strongest positive relationships to respondent ratings of their own group's accomplishments. Frustration is strongly positively related to the amount of conflict in the group and negatively to management responsiveness, program recognition, and the skill, goal clarity and intensity of the group. Management responsiveness, program recognition and program support are the best predictors of the program outcome variables in general. Intensity of effort is particularly strongly related to the program effectiveness variable.

Although not shown, the design variables also are related to the group and program outcome variables, although the magnitude of the relationships is much smaller than between the intervening variables and

the outcomes. There is a particularly strong relationship between group accomplishments and the diversity of records kept, resource personnel used, training received and use of measurable goals. This indicates that design variables do affect the ability of the group to produce ideas and changes in the organization. All program outcomes are consistently related to training, the use of measurable goals, the use of multi-level groups, and to the record-keeping and communication methods used by the groups. In addition, opportunities for membership are strongly related to program outcomes.

Discussion

The Results in Perspective

The strength of the relationships between the design characteristics and the group functioning and contextual integration variables is impressive in part because the design characteristics variables are simple measures of the extent to which a characteristic is present. For example, the communication methods variable is a count of the number of methods used by the group to maintain communication with the rest of the organization; it is not a measure of the degree to which group members perceive their level of communication as effective. This reduces the likelihood of perceptual bias. For some design characteristics, the rating is provided by group members, as in the example of communication methods; in other cases, the rating is provided by the researchers, based on interview and archival evidence. It is important to note that the design characteristics are only partially tapped by our measures. One would expect the relationships to be even stronger if it were possible to rate not only the presence of the design characteristics, but also to rate objectively how well these characteristics were

implemented (for example, whether the training was conducted well). The strength of the relationships even in the absence of more refined indicators is striking. Simply the degree to which certain design characteristics are present apparently makes a difference.

The strong relationship of the group functioning and contextual integration variables to the group and program outcomes is also impressive. These relationships are much stronger and more consistent than the relationships between the design characteristics and the intervening variables or (in analyses not reported here) between the design characteristics and the outcomes. This suggests that design characteristics do not account for most of the variance in participation group program success. A variety of other factors no doubt help explain program success, including the pattern of historical development in the program, the nature of the work technology, the financial health of the organization, characteristics of group members, and so on. Especially important are the personal beliefs, values, and skills of management, which affect the level of management responsiveness and recognition provided to the participation groups. Management's orientation is influenced only to a limited extent by group design characteristics.

Objective outcome measures, such as indications of improved productivity, would have been preferrable to individual ratings of outcomes; however, such measures were available only in one of the nine locations. Furthermore, the use of objective outcome measures would have required a quite different study with a longitudinal research design that separates out participation group effects from the effects of other causal factors. For example, each location was involved in multiple simultaneous productivity improvement efforts, many of which

were not related to the participation group effort. Given the purposes of this study, we are satisfied with the outcome ratings by the survey respondents. They are within the range that was expected at each site based on interview and archival data about the group accomplishments. Indeed, a rank ordering of the effectiveness of the nine site programs based on respondent ratings of the outcomes matches researcher rank ordering based on other data.

The overall pattern of results reported here was confirmed in additional analyses which used different subgroups of respondents to investigate the model. The pattern of results was examined for group participants and for all respondents in all nine sites and in just the sites with mature participation group programs. The pattern of results was exactly the same in all cases, with one exception: in mature sites as opposed to all sites, training is even more strongly related to group functioning variables and to contextual integration variables.

Guidelines for Participation Group Design

The results of this study suggest some guidelines for the design of employee participation group programs. Participation groups should use measurable goals that are based on organizational performance indicators. As many people as possible should have the opportunity to be members of participation groups, and the use of intact work groups is preferable to a strict volunteerist model. The use of multiple communication channels and the maintenance of a variety of records of group activities are two of the most important predictors of internal and external effectiveness. The groups should meet at least weekly if possible. Facilitation of group meetings has some positive effects. Training for the groups, group leaders, and managers is critical. The

groups should be able to call on non-members with special expertise on an as-needed basis. Finally, formal management recognition techniques and a multi-level management committee structure should be used to increase the integration of the groups with the organization.

It is interesting that the data confirm the importance of some design features associated with the quality circle model. The QC model stresses the importance of training, making external resource personnel available to the groups, using multiple communication channels, maintaining good records, and meeting frequently. Of these factors, the importance of record-keeping was initially surprising, probably because the importance of written communication tends to be taken for granted. Written records play an important role in the normal decision making processes of most organizations; it is understandable that such records can play similar roles for participation groups.

The findings also suggest that some design features associated with the QC model are not nearly as important as one would expect, given their prominence in QC packages. The use of facilitators and formal recognition programs are associated with some positive effects, but the effects are not as strong and pervasive as the effects of such factors as training and record-keeping. Facilitators, however, were observed to play a number of important roles in group programs, such as conducting training, providing an internal consulting resource for management, acting as a communication link for the groups, and helping to design many specific features of the group program. Thus, although direct facilitation of group meetings had modest benefits, the added roles assumed by those with the title "facilitator" were possibly

more important. The use of formal recognition techniques apparently is no substitute for more traditional types of management responsiveness--such as making resources available and implementing group proposals. It appears that a multi-level committee structure, which is recommended only by some participation group designers, is as important as formal recognition efforts. Finally, the volunteerist approach recommended by QC designers appears to have fewer advantages than the use of intact work groups, which automatically include all employees in groups.

The data also suggest a resolution to some open questions in the design literature. First, is a broad or narrow goal scope desirable? The results suggest that neither offers pervasive advantages. It is interesting that a narrow goal scope for the group program is not associated even with goal clarity for particular groups. Much more important is whether the groups use measurable goals based on organizational performance indicators. Second, the use of outside resource personnel as needed appears to be much more effective as a way of dealing with organizational interdependencies than including the same types of people as members of participation groups. Interview data suggest that calling on outside resources as needed strikes a good balance between the need of the groups for external assistance and the desire of external constituencies to avoid involvement with groups whose concerns do not always match their own.

The Quality Circle Model: Implications and Speculations

It is important to note that participation group programs designed as parallel organizational structures require a great deal of nurturing and commitment. The design features that are associated with maximum

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success--extensive training, management responsiveness, multi-level teams, broad membership opportunities, facilitation, ongoing multi-channel communication, careful record-keeping, and so on--are highly demanding of organizational time, energy, and resources. Clearly, it would be wise for any organization to consider its purposes thoughtfully and to lay the groundwork carefully before adopting quality circles or other types of participation groups.

This study only investigated groups that were, to varying degrees, "special" groups parallel to and separate from the normal decision making structure of the organization. The study did not investigate the relative advantages and disadvantages of parallel groups compared to self-managing work teams and other types of groups that are more fully integrated within the existing organizational structure. However, the data readily invite speculation on the strengths and weaknesses of parallel group models compared to other models of participation.

The quality circle model offers a set of systematic, internally consistent principles for designing a parallel organization. Such design features as training, facilitation, record-keeping and communication, formal management recognition, widespread opportunities for group membership, and so on can be mutually reinforcing. These features provide means both of enhancing the functioning of participation groups and of linking the groups to their organizational context. Yet, the "special group" status of participation groups such as quality circles makes it difficult to sustain the program over the long run. If the participation group program is seen as an expensive, time-consuming appendage to the organization rather than an integral part of its functioning, the parallel organization is built on the shifting sands of resource availability and management enthusiasm.

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It is striking that if program designers fully follow the design prescriptions suggested by the data presented here, participation groups will look less like special groups and more like groups that are integral to organizational functioning. In particular, two design features that are not widely recommended in quality circle packages--the use of intact work groups and use of measurable organizational performance goals--blur the distinction between parallel groups and self-managing teams. On the other hand, other design features that help set the groups apart as a parallel structure, such as facilitation, special management recognition programs, and placing members of multiple work groups in the same participation group, do not seem to be as strongly related to group effectiveness.

Perhaps the real contribution of the quality circle model is as a transition strategy (Lawler and Mohrman, 1985) between traditional organizational designs and designs that incorporate much higher levels of self-management by existing work groups. High-involvement designs require a great deal of management support and commitment, as well as widespread basic communication, problem solving, and record-keeping skills. The data suggest that participation group programs can help provide such skills and demonstrations of management support, at least during the lifetime of those programs. The larger issue is how to embed these programs deeply in the organization, so that a heavy investment in the parallel organization can continue to pay dividends.

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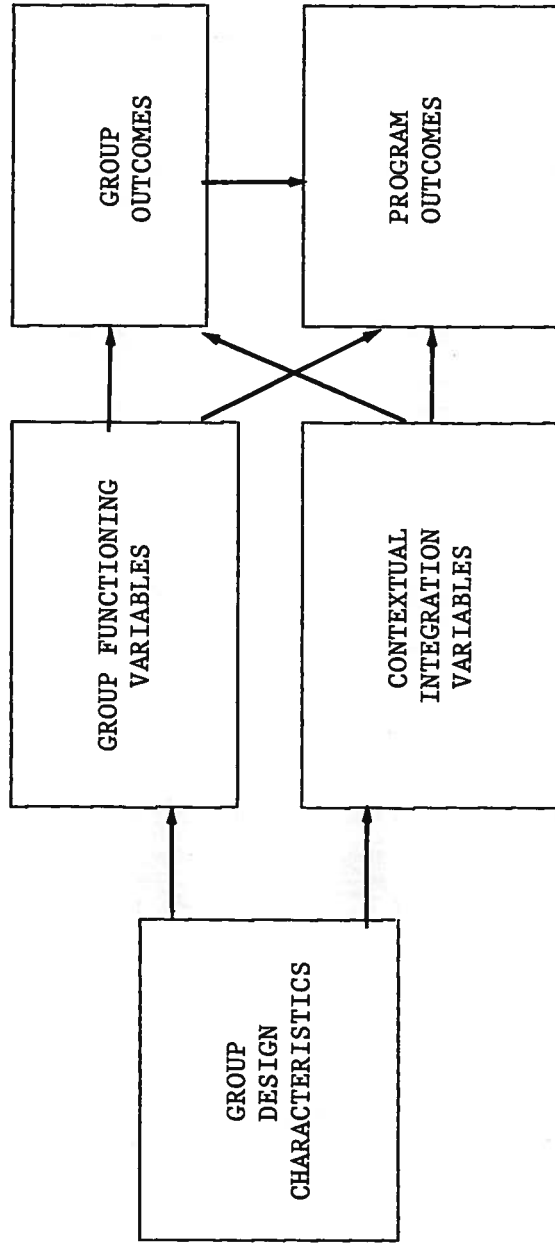
FIGURE 1

GENERAL MODELS OF THE EFFECTS
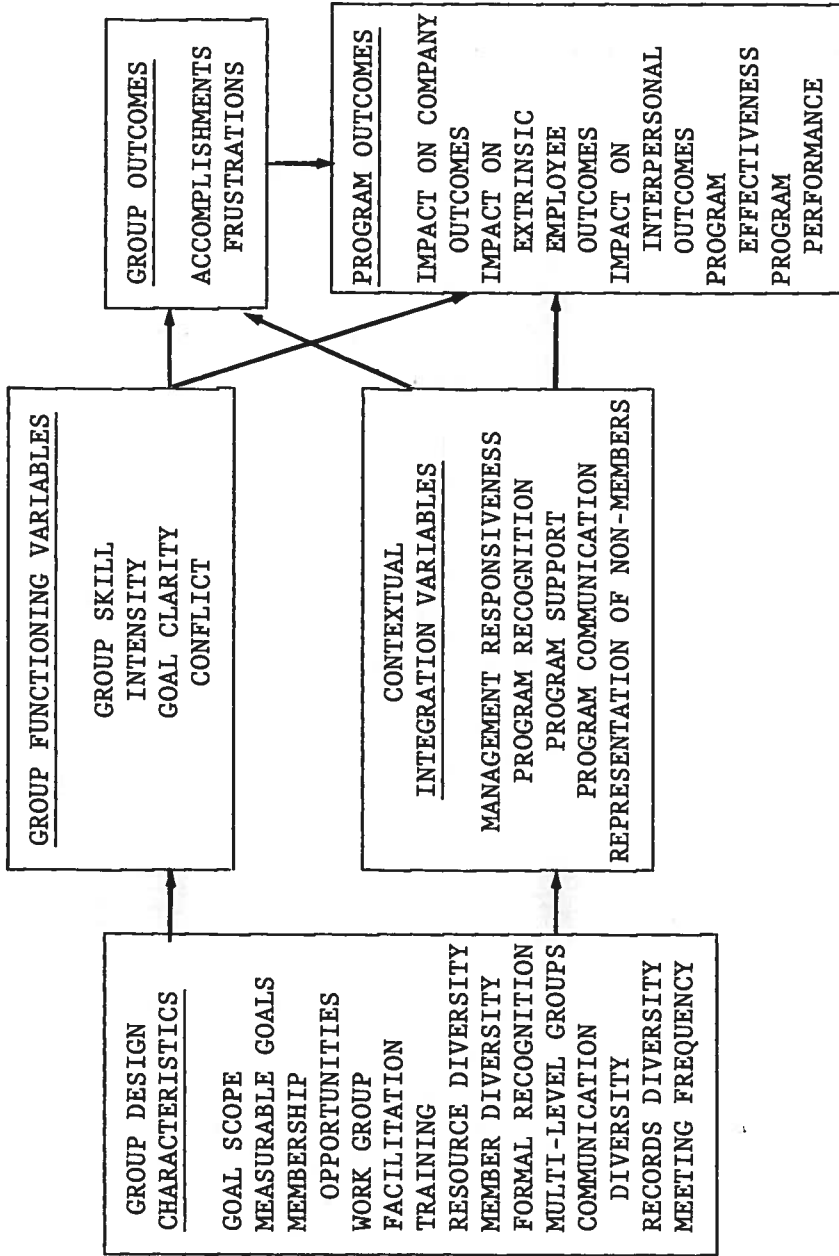OF PARTICIPATION GROUP DESIGN

FIGURE 2

VARIABLES IN PARTICIPATION GROUP DESIGN MODEL

TABLE 1

ZERO-ORDER CORRELATIONS BETWEEN DESIGN CHARACTERISTICS
AND INTERVENING VARIABLES
(N = 538)

DESIGN CHARACTERISTICS	GROUP FUNCTIONING VARIABLES				CONTEXTUAL INTEGRATION VARIABLES				
	Group Skill	Inten-sity	Goal Clarity	Conflict	Mgt. Respons	Program Recogntn	Program Support	Program Commun.	Represen. Non-Membrs
Goal Scope		.19							
Membership Oppor.	.13	.16	.17		.20	.30	.17	.31	.15
Resource Diversity	.20	.25	.16		.19	.16	.17	.19	.16
Member Diversity									
Formal Recognition						.20	.19		
Communic. Methods		.23	.17		.20	.17	.16	.23	.15
Records Diversity	.23	.33	.28		.25	.21	.21	.18	

Note: All correlations shown are statistically significant (p < = .001).

TABLE 2

ANALYSIS OF VARIANCE (ANOVA) RESULTS: SIGNIFICANCE LEVELS OF F-RATIOS FOR CATEGORICAL DESIGN CHARACTERISTICS

	CATEGORICAL DESIGN CHARACTERISTICS					
	Measurable Goals (N=363)	Work Group (N=469)	Facilitation (N=534)	Training (N=404)	Multilevel Groups (N=395)	Meeting Frequency (N=477)
GROUP FUNCTIONING						
Group Skill	.01		.05	.000	.05	.05
Intensity	.01			.000	.01	.000
Goal Clarity	.01					.05
Conflict		.001		.01		.01
CONTEXTUAL						
Mgt.Responsiveness	.000			.000	.01	.05
Progr.Recognition	.000	.05		.000	.01	
Progr.Support	.000			.01	.05	
Progr.Communicat'n	.05	.05	.01	.000	.000	.01
Non-Member Repres.	.05					.05

TABLE 3

ZERO-ORDER CORRELATIONS BETWEEN INTERVENING VARIABLES AND OUTCOMES
(N = 538)

INTERVENING VARIABLES	GROUP OUTCOMES		PROGRAM OUTCOMES					
	Accomplishments	Frustration	Impact Company Outcomes	Impact: Employee (Extrin)	Impact: Employee (Intrin)	Impact: Interprl Outcomes	Program Effectiveness	Program Permanence
GROUP FUNCTIONING								
Group Skill	.57	-.34	.32	.32	.36	.27	.43	.33
Intensity	.75	-.34	.42	.39	.47	.40	.64	.45
Goal Clarity	.78	-.38	.37	.33	.40	.31	.56	.37
Conflict	-.35	.41	-.21	-.24	-.28	-.23	-.28	-.19
CONTEXTUAL								
Mgt. Responsvness	.69	-.43	.45	.50	.53	.50	.58	.51
Program Recognition	.57	-.38	.45 (.41)	.50 (.48)	.60 (.55)	.51 (.47)	.67 (.63)	.64 (.60)
Program Support	.43	-.28	.49 (.43)	.49 (.48)	.55 (.51)	.55 (.51)	.57 (.54)	.54 (.51)
Program Communication	.45	-.26	.37 (.35)	.44 (.41)	.42 (.42)	.41 (.39)	.52 (.49)	.46 (.43)
Non-Member Representation	.36	-.17	.30 (.27)	.30 (.29)	.32 (.33)	.27 (.27)	.45 (.44)	.33 (.35)

Notes: (1) All correlations shown are statistically significant (p < .001).
(2) Correlations shown in parentheses are for all survey respondents (N = 904); all other correlations are for current and former group participants (N = 538).