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Relationship between participation in a self-directed work group and employee communication competence and apprehension: An exploratory study

Lychuk, Gretchen Dahlberg, M.A.

University of Nevada, Las Vegas, 1993
RELATIONSHIP BETWEEN PARTICIPATION IN A SELF-DIRECTED WORK GROUP AND EMPLOYEE COMMUNICATION COMPETENCE AND APPREHENSION:

AN EXPLORATORY STUDY

by

Gretchen Dahlberg Lychuk

A thesis submitted in partial fulfillment of the requirements for the degree of

Master of Arts in Communication Studies

Greenspun School of Communication University of Nevada, Las Vegas December 1993
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University of Nevada, Las Vegas
December 1993
Abstract

Self-directed work groups are a new innovation in the workplace involving small group interaction. A by-product of working in a group environment is often increased communication between group members. This study investigated members’ perceptions of their own communication competence and communication apprehension as a result of self-directed work group involvement. Surveys were given to employees participating in self-directed work groups and a comparable group of employees not participating in work groups at a government defense contractor. Results of the study indicated no statistical differences between groups for perceived communication competence and communication apprehension, although the scores were in the predicted direction. A strong negative correlation was found for measures of competence and apprehension, indicating that as competence rises, apprehension lowers for both groups. Factors limiting the study included the relatively short time since the work groups were introduced and the government institution within which the experiment was conducted.
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The completion of this thesis is due in no small part to the efforts of several important individuals. First, I must thank my advisor Dr. Anthony Ferri whose enthusiastic support and judicious advice were gratefully accepted. My thanks also to my husband Paul Lychuk for his patience and encouragement during the long days and nights of thesis preparation and to my friend Aiessa Lawrence for her wise counsel and moral support as we both pursued our master's degrees. And, finally, to my father and mother, Paul and Kathryn Dahlberg, my deepest thanks for their endless love and support.
Chapter 1

Introduction

Over the past decade, total quality management (TQM) has been adopted by many high-profile corporations in the United States: Xerox, Ford, Motorola, L.L. Bean, IBM, and Corning to name a few. Even governmental institutions like the Department of Defense have joined the bandwagon. While these corporations have all instituted programs under the umbrella of TQM, most are based largely on the teachings of three men: W. Edwards Deming, Joseph J. Juran, and Philip B. Crosby. These "quality gurus," as they are often called, are quality consultants hired by U.S. businesses to improve their competitive edge in a world market.

TQM relies heavily on the theory of participative management and encourages moving away from the bureaucratic organizational style built by Frederick Taylor. Taylor recommended that the most suitable way to manage manufacturing organizations was to standardize the work tasks and then closely supervise those tasks and the workers (Wellins, 1991).

McGregor (1960) describes Taylor’s model as Theory X. In Theory X, communication flows in a downward direction and decisions are made primarily
at the managerial level. A number of potential communication barriers can occur within a Theory X-structured organization according to Hellweg and Mandel (1979):

First, the physical distance between members of an organization, both in terms of activity locus and the hierarchical structure, provides a definite potential communication barrier. Second, the specialization of jobs among employees, a basic characteristic of any organization, offers a complicating effect upon informational exchange and thus another potential barrier to communication effectiveness. Third, power and status relationships among organizational members impede free communication flows. (p. 35)

Unlike Theory X organizations, Theory Y organizations are marked by smooth communication flow in all directions. Ideas regarding improvements in the organization are encouraged and decision making is spread across all levels (McGregor, 1960). The importance of communication to a successful organization is stressed by Hellweg and Mandel and leaders of most participative management programs:

For an organization to function effectively, employees must be well informed; managers must realize the willingness of employees to assist in the success of the company and the power of communication to tap
this potential. Communication must be recognized by an organization as an essential tool for effective management and, hence, for the achievement of company objectives. (p. 36)

Most companies utilizing TQM attempt to integrate all of the elements of the Theory Y organization into their participative management programs. The main goal of these programs is to plan for quality, improve processes, and control for "holding the gains" (Juran, 1988). Typically, TQM programs are guided by a quality council that decides which problems need to be investigated and by whom. Most programs form groups and provide them with training in statistical process control, problem solving techniques, and team building. Group membership can be quite diverse and can include employees from the ranks of production as well as management.

A portion of these teams function as quality circles—small groups of people who do similar work and who meet voluntarily one or more times a week to identify problems for solution. A new generation of quality circles being formed in the United States today are called "self-directed" work groups.

Background

Self-directed work groups were first developed and used in Britain and Sweden in the 1950s (Orsburn, Moran, Musselwhite, & Zenger, 1990). These
groups typically consist of 6 to 18 highly-trained employees (from the ranks of management and non-management) who are fully responsible for turning out a well-defined segment of finished work.

Work groups are similar to quality circles in that they seek to correct processes in their own work environment; however, they are different in one significant way: they are self-managing. That is, as work teams mature (usually in two to five years), they begin assuming responsibilities normally under the purview of upper management such as scheduling and assigning work, handling personnel issues, hiring and firing group members, and handling compensation (Orsburn et al.).

With their expanded responsibilities, participants in self-directed work groups must communicate more effectively than conventional workers. Communication skills such as listening, giving feedback, making a point in a meeting, solving problems in a group, counseling peers, resolving conflict, and working together are essential for all group members. "Conventional workers rely on the boss to ensure good communication, set priorities, and handle interpersonal conflict. The peers who make up a self-directed team must handle these critical, often explosive matters on their own" (Orsburn et al., p. 18).
The importance of good communication to group success is underscored by Orsburn et al.:

Day-to-day interactions can be chaotic unless team members master the basics of listening and giving feedback. Cooperative decision making within and among teams demands the skill of group problem solving, influencing others, and resolving conflicts. In short, every team member must learn to collaborate in getting the right information, sending the right information, and using that information to increase productivity. (p. 19)

The need for effective communication among individuals participating on work groups is apparent, as is the potential for increased communication interaction in such a setting. But what is not as apparent is how these episodes affect individual group members' perceptions of their own communication competence and communication apprehension. This study sought to demonstrate whether the increased communication typical of self-directed work group meetings is related to self-perception of communication competence and apprehension.
Chapter 2
Research Literature

Communication Competence

The level of communication skill that a communicator possesses is referred to as "communication competence" by Penley, Alexander, Jernigan, and Henwood (1991). This skill has been described historically by traits such as empathy, social relaxation, attentiveness, flexibility, and interaction management, although several divergent theories have emerged in the literature on communication competence in recent years. Larson (1978) defines communication competence as the "...ability to demonstrate a knowledge of the socially appropriate communicative behavior in a given situation" (p. 307). Like Larson, McCroskey (1982) makes an argument for equating competence with demonstrable knowledge of the appropriate communicative behavior, not performance. His view is that "performance of behaviors judged to be competent is neither a necessary nor sufficient condition for a judgment of communication competence" (p. 3). Conversely, Spitzberg (1983) argues that "effectiveness requires performance. Effective performance, while not requiring skill, is far more likely when skills are possessed" (p. 326). He
suggests that competence requires effectiveness, performance, and skills, in addition to motivation and knowledge. Rubin and Henzl (1984) view communication competence as "an impression formed about a communicator by other people" (p. 264).

Quality circles and work groups are well suited to studies in communication competence because participative management systems provide a framework in which communication can thrive (Jackson, 1983; Marshall & Stohl, 1993). This idea has been given credence by a study which examined supervisor communication competence and supervisor satisfaction as a result of quality circle participation.

Berman and Hellweg (1989) studied members of twelve voluntary quality circles at a government defense contractor. Of the 104 subjects, half had participated in the quality circle process for a minimum of six months; the other half were just starting in newly-formed quality circles. The authors examined communicative processes within these quality circles, specifically the relationship between the supervisor-subordinate quality circle experience and subordinate perceptions of supervisor satisfaction; subordinate perceptions of supervisor communication competence; and supervisors’ perceptions of their own communication competence. The independent variable in the study was the amount of time associated with quality circle participation (new versus six-month old circles). Results showed that quality circle participation was
directly related to increased perception of supervisor communication competence by subordinates and increased satisfaction with supervisor by subordinates. However, supervisors did not perceive a difference in their own communication competence.

Competence has also been measured by examining the relationship between a communicator's thoughts and actions (Cegala & Waldron, 1981). This research was aimed at testing the role of thought protocol in competent communication. The model describes the competent communicator as "a highly adaptive individual who can process information in the social environment and implement this knowledge in the form of communicative strategies" (p. 105). In this study, data was gathered from two separate samples using participants from university communication courses. All participants were asked to obtain three pieces of sensitive information from their partner during an informal conversation. The authors found that highly competent communicators had more goal-relevant thoughts, while low competent communicators had significantly more self-assessment thoughts. Highly competent communicators were also better equipped to integrate multiple aspects of the situation (instrumental, identity, and relational concerns) than the less competent individuals.

The relationship between cognitive complexity and communication competence has interested other researchers as well. Generally, cognitive
complexity is described in communication research as the tendency for highly complex individuals to form more complex impressions of others and to incorporate these impressions into messages than their less complex counterparts (Rubin and Henzl, 1984). This particular study examined university students in an introductory speech communication class. The students were asked to present a three-minute persuasive talk, view a videotape representing "a first day in a class," orally answer questions about the tape, and orally explain experiences they have had in college situations. The authors hypothesized that students with higher cognitive complexity would exhibit greater levels of communication skill and that verbal ability would be related to skill and complexity. The results revealed a low to moderate correlation between verbal ability and cognitive complexity, and a moderate correlation among verbal ability, communication competence, and cognitive complexity. The items that differentiated the high complexity groups from the low complexity groups were distinguishing facts from opinions, recognizing understanding or non-understanding in message receiver, use of voice (clarity of speech) and using appropriate facial expressions and tone of voice.

Further research sought to understand the effect of individual communication competence on problem solving performance in group situations (Leathers, 1972). Three treatment groups received disrupted, natural, or facilitated communication. In the disrupted communication treatment group, two
"plants" interposed five variables known to interfere with small group communication (high level abstraction, internally inconsistent or irrelevant statements, negative reinforcement, facetious interpolation, and withdrawal). The facilitated communication treatment group received only positive reinforcement ("plants" suggested that the group keep a record of ideas, use brainstorming techniques, give a summary of long contributions, and encourage participants who expressed themselves concisely, clearly, and relevantly). The natural communication group was not exposed to any experimental manipulation. Results showed that groups experiencing low quality communication (abstract, inconsistent, or irrelevant, or negatively reinforcing statements) arrived at significantly lower quality solutions than groups participating in high quality communication episodes (precise, consistent, relevant, or positively reinforcing statements).

Gouran, Brown, and Henry (1978) also observed many problem-solving groups to determine behaviors that lead to higher quality decision making. The quality of three audiotaped decision-making discussions was evaluated by panels of students in group communication classes. The results indicated that behaviors which contribute positively to decision making are more substantive (addressing relevant issues, analysis of issues, documenting assertions contributions) than socio-emotional (promotion of interpersonal relations and even distribution of participation). Similar findings were reported by Harper and Askling (1980).
when studying groups operating in a corporate environment. They found that groups displaying high quality decisions had more open communication, higher proportion of active participants, and higher quality leadership than those groups making decisions considered to be of low quality.

Still other research has explored the role of experience in communication competence development (Rubin and Graham, 1988). The authors found that the extent of communication experiences was linked, among other things, to the level of interaction involvement (ability to perform introductions, ask and answer questions, express feelings, and describe differences of opinion). Three scales, measuring communication competence, apprehension, and interaction involvement, were used to test this relationship. The findings supported the notion that the accumulation and development of behavioral experiences (communication episodes) is important to skill development (competence). The authors also reported a moderate negative relationship between communication apprehension and communication competence, indicating that high apprehensives may be viewed as less communicatively competent.

Finally, recent investigations by Penley et al. (1991) have focused on communication abilities of managers. Their study sought to clarify the relationship between managerial performance and communication competence through the identification of necessary communication skills for male and
female managers. The authors gathered data from managers at multiple banking institutions using several communication scales that measured communication competence, oral communication apprehension, and written communication apprehension. Other scales evaluated media sensitivity, created a hypothetical incident of a confrontation between supervisor and subordinate, and measured introversion (feeling uncomfortable being the center of attention), ability to play out social roles, and ability to adapt to situational demands. Participants were also asked to compare themselves with their peers and rate the amount of improvement in their career in five areas: salary, responsibility, influence, skill and ability, and job level. Female managers exhibited lower self-reports of communication skills than male managers, and lower performers reported difficulty in writing, less accurate communication, and higher public and interpersonal apprehension.

*Communication Apprehension*

The impact of communication apprehension on organizational communication has received widespread attention by communication scholars since the early 1970's. Communication apprehension is defined by McCroskey (1982) as "an individual's level of fear or anxiety associated with either real or anticipated communication with another person or persons" (p. 78). Although most people will experience significant anxiety in some communication settings,
such as public speaking, a high apprehensive will experience such difficulties in most settings which require oral communication with another person. "This, of course, does not mean that the person with high communication apprehension will never engage in oral communication. Rather, the person will choose to do so much less frequently than persons with lower levels of communication apprehension" (McCroskey, p. 78). The literature also distinguishes between state communication apprehension, which is considered a normal response when a person is confronted with oral communication in a public setting, and trait communication apprehension, which occurs in those communication situations that would not be considered threatening (McCroskey, 1977).

The inference that apprehensives are more comfortable working independently than in groups is of interest to small group researchers. According to McCroskey and Richmond (1979), the high communication apprehensive will initially attempt to avoid joining a group. If it is unavoidable, the person will participate as little as possible and seek to leave the group as quickly as possible.

The role that group interaction or non-interaction plays in determining the effectiveness of group decision making was explored by Hirokawa (1980). Subjects for the study included undergraduate volunteers in university speech courses. These volunteers were presented a decision task based on the NASA moon survival problem, which involved role playing a crash landing on the
moon. Subjects were asked to rank in order of importance all equipment and supplies available after the accident; the groups' answers were then compared to the ordering presented by the NASA Space Center and computed according to the deviation from the correct score. The magnitude of the deviation was representative of the quality or effectiveness of the groups' decisions. The results suggested that group interaction plays an important role in determining the effectiveness of a decision-making group. A critical difference was that effective groups spent considerably more time interacting and establishing procedural directions (such as criteria for making a decision) than the ineffective groups.

Fear of communication has also been observed to affect job tenure. Scott, McCroskey, and Sheahan (1978) examined the relationship between communication apprehension and length of service. Their survey instrument asked questions concerning expressing oneself in a group, fielding questions at a meeting, speaking up in conversations, talking to a supervisor, and conversing with people in positions of authority. Respondents were also asked questions about potential advancement and desire for more or less face-to-face communication. Results of the study revealed that low communication apprehensives reported more years of service in their present organization than did the high communication apprehensives. High communication apprehensives had less desire for advancement, less expectation for advancement, preferred
positions with low communication requirements, and saw their job as having lower communication requirements.

The impact of high communication apprehension on organizational satisfaction was examined by Harville (1992), who predicted that high communication apprehensives would prefer jobs with low communication requirements while low apprehensives would prefer jobs with high communication requirements. He also theorized that only low apprehensive employees in jobs with high communication requirements would report job satisfaction. As predicted, overall results revealed that the most satisfied employees had low communication apprehension and were in jobs with high communication requirements; high communication apprehensives had low job satisfaction regardless of the communication requirements of their job.

Other research indicates that the level of communicative involvement in an organization is critical to the acquisition of organizational knowledge. Marshall and Stohl (1993) examined the likelihood that workers who are more involved in the organizational network would be more knowledgeable about the organization than those who were less involved. They also looked at whether employees with leadership experience would be the most knowledgeable. The definition of leaders was broadened to include leaders of self-managed work groups who would have similar communication links when compared to formalized leadership roles (managers and supervisors).
The authors hypothesized that all group members, but primarily the leader, would be expected to participate in more communicative activities and be generally more knowledgeable about work-related matters. Specifically, they theorized that workers who were more involved in the organizational network via communication would be more knowledgeable about the organization than those who were not. They also theorized that formal leadership experience would be linked with more organizational knowledge. Surprisingly, results of the study revealed no link between organizational knowledge and involvement in the organizational network but did reveal a positive relationship with formal leadership experience.

Finally, a wealth of studies have examined individual and group communication as one of many attitudinal measures such as employee recognition, morale, problem solving skills, quality of work, work attendance, interest in work, and input on how work is done (Bowman, 1989; Honeycutt, 1989; Tang, Tollison, & Whiteside, 1987). Results of these studies showed varying degrees of increase on most measures, including communication.

While the data on quality circles and self-directed work groups is mixed, there is evidence that quality circles enhance employee/management relations, increase problem solving skills, encourage group participation, and improve overall group communication. Generally, individuals with lower communication apprehension and higher communication competence are higher performers,
remain in their jobs longer, and choose positions with higher communication requirements. Cognition, experience, and inherent personality traits may also significantly affect individual communication competence and apprehension.

Although researchers have established that quality circles enhance organizational communication, few have focused on the benefits to interpersonal communication as a result of circle participation. Given the increased exposure to communication-related interactions, it is not improbable that group members would perceive an increase in their own communication competence level and a lowering of their communication apprehension in work-related situations. However, in a similar study, supervisors who underwent a quality circle experience did not report an increase in their own communication competence (apprehension was not measured). The authors of that study, Berman and Hellweg, suggested future research regarding communication competence of subordinates as a function of their role shift in quality circles.

This research suggestion is the basis for this study; however, it was adapted to examine self-directed work groups instead of quality circles and modified to include a measure of communication apprehension suggested by Harville (1992) and studied by Rubin and Graham (1988).
Hypotheses

This study was guided by three hypotheses:

H1 - Employees of self-directed work groups will report significantly higher levels of communication competence than similar groups not involved in self-directed work groups.

H2 - Employees of self-directed work groups will report significantly lower levels of communication apprehension than similar groups not involved in self-directed work groups.

H3 - There will be a negative correlation between communication competence and communication apprehension for the self-directed work group and the reference group.
Chapter 3

Method

Subjects

Subjects for this study comprised 53 employees currently participating on self-directed work groups and a comparable group of 53 employees not participating on self-directed work groups at a government defense contractor in Las Vegas, Nevada.

This high-technology company is piloting self-directed work groups as part of its two-year old quality improvement program. The program is guided by a quality council whose membership includes high-ranking managers from each organization within the company. Initial stages of the program included the formation of ad-hoc groups (called quality improvement teams) to review and find solutions for problems selected by the quality council. These teams were only marginally successful, but were the catalyst for the formation of self-directed work groups. These self-directed work groups were composed of individuals already working together in a unit. The groups included both hourly and salaried employees from administrative and technical areas, specifically public relations, security, internal publications, policies and
procedures, and fabrication services. Job titles for group members included clerk, secretary, administrative assistant, drafter, designer, engineer, programmer, technical writer, budget analyst, office manager, technical supervisor, and communication specialist.

Only select managers instituted teams in their organization and participation was involuntary. All groups were given one-day of introductory training on data gathering tools, statistical methods, and team dynamics, with additional training offered on an as-needed basis. Approximately 5% of the company's employees were participating in groups at the time this study was conducted.

Survey Instrument

For this study, the independent variable was participation on a self-directed work group. The dependent variables in this study were perceptions of communication apprehension and communication competence by self-directed work group members and non-members.

Part I of the survey questionnaire was a Self-Report of Communication Apprehension (PRCA) designed and validated by McCroskey, Beatty, Kearney, and Plax (1985). This 24-item measure examined public speaking, speaking in small groups, speaking in meetings, and speaking in dyads. Each context was represented by six items. A Cronbach alpha of .97 was reported by
McCroskey et al. (1985). Cronbach’s alpha (see Bowers and Courtright, 1984) for this study was computed at .91; correlations between the subscale scores and the total score ranged from .71 (group) to .77 (meeting).

Part II of the questionnaire was based on the 19-question Communication Competency Self-Report (CCSR) designed and validated by Rubin (1985) as a self-report of skills which create a sense of competence. A Cronbach alpha of .87 was reported, indicating that the CCSR is an internally consistent measure (Rubin, 1985). The CCSR questionnaire was originally intended for a college student population but is conducive to studying communication skills such as clarity and accuracy in communicating information in an organizational setting (Penley et al., 1991). Only minor changes were necessary to adapt the questionnaire to this particular study. Cronbach’s alpha for the present study was computed at .87.

Part III of the form asked for general information on how long participants had been with the company, gender, age, education, membership on a quality improvement team (if applicable), and length of time on a work group (if applicable). A pilot study, using several graduate students and company employees, was conducted in order to verify the clarity of the cover letter, instructions, and the survey. The pilot study revealed the need for minor changes to the instructions and layout of the 5-point scales in Parts I and II to increase consistency.
Procedure

The survey was distributed by mail to the subject population along with a cover letter describing the study in general terms (see Appendix A). The letter assured the survey participants of anonymity and consent was obtained by virtue of the survey being returned by mail. Permission to conduct the survey was requested and granted by the Office of Research Administration at the University of Nevada, Las Vegas and the company being surveyed (see Appendix B). Each survey participant was assigned a number for tracking purposes. Survey questionnaires numbered 1-53 were issued to participants in self-directed work groups; survey questionnaires numbered 54-106 were sent to the reference group.

Membership in each grouping was determined by human resource listings. An effort was made to exclude quality improvement team members from the reference group. This separation was attempted because of the potential for similar communication episodes (i.e., regular team meetings) which could potentially affect the data results. Only six reference group participants had participated on quality improvement teams. Employee job listings were also used to match, as closely as reasonably possible, the job classifications of reference group and self-directed work group participants. The surveys were sent to the employees’ work location to eliminate the possibility of non-delivery to an incorrect home address.
Chapter 4

Results

Of the initial 106 employees who were sent surveys, a total of 72 employees returned usable surveys. Of the 72 survey participants, 32 identified themselves as belonging to a self-directed work group and 40 did not. The return rate was 68%. Approximately 70% of the self-directed work group and 60% of the reference group subjects were female. The mean number of years of education for both groups was four years of college. On average, those participants in the self-directed work groups were younger ($M=35, SD=8.9$) than the reference group ($M=43, SD=9.7$). Most work group participants had been members of a work group for less than one year and had been in their current organization for fewer than four years and with the company for fewer than seven years. Reference group participants had been with their current organization for fewer than six years and with the company for eight years on average. Frequency of work group meetings varied widely from daily to quarterly ($M=16.5/yr., SD=10.3$).

Hypothesis one: The first hypothesis predicted that employees of self-directed work groups would report a higher level of communication competence
when compared with similar groups not involved in self-directed work groups. This hypothesis was not supported. A $t$-test for independent groups was performed to compare the average scores (a higher score showing higher competence) for both the self-directed work group ($M=67.25$, $SD=8.2$) and the reference group ($M=66.25$, $SD=5.1$). The one-tailed $t$-test produced no significant differences ($t=0.64$, $df=70$, $p > .05$) for the measure of communication competence, although the mean and median scores were in the predicted direction (see Figures 1 and 2). Then, $t$-tests were performed on each item within the competence measure for the self-directed and reference groups as suggested by the measure's author (Rubin and Graham, 1988). No statistical differences were found.

Hypothesis two: The second hypothesis predicted that employees of self-directed work groups would report a lower level of communication apprehension when compared with similar groups not involved in self-directed work groups. This hypothesis was not supported. A $t$-test for independent groups was performed to compare the average scores (a lower score showing lower apprehension) for both the self-directed work group ($M=59.5$, $SD=15.1$) and the reference group ($M=63.3$, $SD=13.9$). The one-tailed $t$-test produced no significant differences ($t=-1.10$, $df=70$, $p > .05$) for the measure of communication apprehension, although the mean and median scores were in the predicted direction (see Figures 1 and 2). Then, $t$-tests were computed for each
of the four elements of the apprehension measure (groups, meetings, dyadic, public speaking) as suggested by the measure’s author (McCroskey, 1985). The self-directed work group and the reference group differed on the meeting measure only \( (t = -1.86, df = 70, p = .03) \); that is, self-directed work groups had less apprehension concerning interaction in a meeting setting when compared with the reference group (see Table 1). No differences were revealed when comparing scores for group, dyadic, and public, although mean scores for public apprehension were significantly higher than the other three elements for both groups (see Table 1).
| Competence  | Mean | 67.2500 | 32 | *(X)* | *(X)* |
| Competence2 | Mean | 66.2500 | 40 | *(X)* | *(X)* |
| Apprehension| Mean | 59.4688 | 32 | *(X)* | *(X)* |
| Apprehension2| Mean | 63.2500 | 40 | *(X)* | *(X)* |

**Figure 1**

Box Plot of Mean Scores for Competence and Apprehension for the Self-Directed Work Group and the Reference Group
Figure 2
Box Plot of Median Scores for Competence and Apprehension for the Self-Directed Work Group and the Reference Group
Hypothesis three: The third hypothesis predicted that there would be a negative correlation between communication competence and communication apprehension for both groups. This hypothesis was supported. A Pearson product-moment correlation was computed between average total scores on the competence and apprehension measures. This analysis revealed a moderate negative correlation between competence and apprehension ($r = -0.64$, $p < .001$) for the self-directed work group and for the reference group ($r = -0.53$, $p < .001$); that is, as competence increased, apprehension decreased for both groups. Simple bivariate scatter plots illustrate the correlation (see Figures 3 and 4).
Figure 3
Scatter Diagram of the Correlation Between Competence and Apprehension for the Self-Directed Work Group
Figure 4
Scatter Diagram of the Correlation Between Competence and Apprehension for the Reference Group
Other demographic variables were compared and contrasted. First, it was conjectured that length of time on a self-directed work group might influence the dependent variables of competence and apprehension. A Pearson product-moment correlation was computed for the total scores for communication competence and communication apprehension versus length on a work group (measured in months). Length of time on a work group was weakly correlated with an increase in competence ($r = .16, p > .05$) and a decrease in apprehension ($r = -.13, p > .05$).

Additional statistical analyses were conducted to reveal any correlation between age and education and the dependent variables of communication competence and communication apprehension. A Pearson product-moment correlation revealed that education was positively correlated to competence ($r = .41, p = .01$) and negatively correlated to apprehension ($r = -.38, p = .02$) for the reference group only (see Figures 5 and 6). Education had no correlation to competence and had a weak positive correlation to apprehension ($r = .24, p > .05$) for the self-directed work group. Age was weakly correlated to competence ($r = .20, p > .05$) and apprehension ($r = -.15, p > .05$) for the reference group and had no correlation for the self-directed work group.
Figure 5
Scatter Diagram of the Correlation Between Competence and Education for the Reference Group
Figure 6
Scatter Diagram of the Correlation Between Apprehension and Education for the Reference Group
Chapter 5
Discussion

This study examined individual perception of communication competence and apprehension by employees involved in self-directed work groups at a federal government contractor. The results of the study did not support the prediction that members of self-directed work groups would, by virtue of their increased exposure to communication episodes, increase their perception of their communication competence (replicating Berman and Hellweg’s 1989 results), nor did they reveal an overall decrease in communication apprehension, although scores for both competence and apprehension were in the predicted direction. One explanation for this data may be the relatively short time that the groups have been meeting, less than one year in most cases. Given the trends in the data in this study, it is not inconceivable that the measures would change given increased exposure to communication episodes of all kinds (primarily leading meetings and discussions and giving presentations to other employees).

Nevertheless, industry studies have pointed to problems with companies adapting to the team environment. Pioneers in the field of self-directed work
groups talk about the amount of time necessary to get a program of this type institutionalized. Most view the movement from independent worker to team player as requiring two to five years (Orsburn, et al., 1990). Both supporters and detractors of the team strategy agree that it will take years to achieve substantial change (Adam, 1991; Klein, 1984). Results of this exploratory study appear to confirm this idea.

Training may also have played a role in participants’ communication skill level. Problem solving, group dynamics, and data gathering techniques are most often emphasized in the training received by the group members (Berman & Hellweg, 1989; Orsburn et al., 1990), with much less emphasis on teaching communication skills. Results of this exploratory study may indicate a need for additional training in communication skills, especially because the results did not show an appreciable increase in individual perception of communication competence and an equivalent decrease in communication apprehension.

This finding is significant because high communication apprehension and low communication competence may decrease the effectiveness of organizational communication. High apprehensives may be isolated, less likely to seek advice and training from their managers or peers. Likewise, low competents in positions requiring high communication requirements (work groups) may adversely affect the flow of organizational communication and
eventually job performance (Harville, 1992). High communication apprehensives are also more costly to an organization because, according to McCroskey and Richmond (1979), they are more likely to leave or be dismissed.

It should be noted that a single difference was revealed for the subscale measuring meeting apprehension. This difference may be explained by the scale’s historical use with a college population. As originally written, the Personal Report of Communication Apprehension (PRCA) attempted to measure a student’s response to four potentially apprehensive situations: giving a speech in front of a classroom (public apprehension); participating in a round table discussion with five or so students (group apprehension); conversing with another student (dyadic apprehension); and listening to a speaker invited to the classroom and participating several times in the class discussion (meeting/class apprehension).

It is possible that the original intent of the meeting measure (measuring student participation in the classroom) may have survived in the newer version, the PRCA-24, which is targeted toward organizational communication situations. Hence, its application in the workplace may have been confusing. It is also possible that participants on work groups drew a distinction between the informality of work groups and the formality of meetings and decided that meetings required less guaranteed participation by the individual, thereby
reducing apprehension. This last relationship, whatever its cause, may be worth noting.

Another observation relates to the scores for the public apprehension subscale. It should come as no surprise, given the general fear of public speaking, that these scores were considerably higher than any other subscale measure of apprehension for both groups. While it is somewhat surprising that the work group members did not differ from the reference in this area, it may also suggest that these work groups are not participating in an appreciable amount of presentations with their work groups, or only one individual is assuming the public speaking role for the group. Also not surprising was the strong negative correlation between competence and apprehension for all survey participants. These results directly supported Rubin and Graham’s 1988 study results and Rubin’s 1985 study results.

Length of time on a work team, age, and education had little or no correlation to competence and apprehension for the self-directed work group. However, education was moderately correlated with an increase in competence and a decrease in apprehension for the reference group (age was only weakly correlated). It is difficult to interpret the difference between the groups given the seemingly contradictory data. This finding may benefit from further study.

A critical factor in this study may have been the use of self-report measures. While research findings on self-report scales have been inconsistent,
this study looked exclusively at individual perception of communication competence which is highly conducive to self-reporting measures. According to McCroskey, self-report scales may be very useful if the researcher is looking for how communicatively competent a person believes he or she is (cited in Rubin and Graham, 1988). However, perception notwithstanding, respondents may have felt some pressure to be perceived as a high competent, low apprehension employee.

Probably the single most important factor in this test case is the government institution within which these groups were operating. At the time this survey was administered, the company was undergoing a major restructuring with the idea of downsizing the workforce by half. One solution suggested by management was the movement toward work groups as a way to minimize the need for managerial staffing. Thus, employees may have wanted to appear as good candidates for a work group (this survey being one possible measure). A Hawthorne-type effect (see Babbie, 1989) may have been present, which might have proved detrimental to the survey results.

One last observation concerns the attitude of participants toward participating in this survey. Although complete anonymity was assured to all those who participated, it is not clear that subjects had complete confidence that their responses would not be seen by their employer. Several respondents declined to participate because of this belief. This apprehension may have
developed because of a survey done at this company by the University of Nevada, Las Vegas several years ago. The answers to that particular survey were to be reported only in combination with others so that anonymity could be maintained. However, individual quotes from actual survey responses were later published in department and all-company meetings, with loss of anonymity as well as trust.

Limitations and Future Research

As the present study was conducted at a government defense contractor, the results are generalizable only to the degree to which the sample is typical of other types of employees and other self-directed work group programs. Other studies might examine a non-government company (institution) where self-directed work groups are operating. Additionally, the small population from which the survey data was gathered and the short time that the groups had been operating was extremely limiting. Because only select organizations within the company were implementing the work group concept and departments at the same site differed significantly in their implementation of the work group strategy, this small percentage may not have been indicative of the whole company. Future research might focus on organizations where self-directed work groups have been in operation for an extended period of time in more areas of the company. Another option for further study might be a company
where there is a planned team intervention. Pre-test and post-test studies could be completed on the target population to assess any significant changes in perception of communication competence and apprehension.

This study also relied solely on self-report for measuring communication competence and apprehension. Recent research suggests that self-report is a better measure when compared with actual behaviors (Penley et al., 1991; Rubin & Henzl, 1984; Spitzberg, 1983). The ideal situation would be to study the behavior (witnessing a formal presentation by the subject for instance) along with a self-report, as Rubin did with her college student population (1985), although this might be extremely difficult to accomplish in the workplace. Self-report measures, while reliable indicators of self perception, are strongly affected by other psychological motivations, including the inability to perceive one’s own strengths and weaknesses. Perhaps some open-ended questions would have elicited additional information or hinted at bias.

Finally, future research needs to examine the causal relationships between involvement in a participative management system like work groups and communication behaviors such as competence or apprehension. Many factors may account for differences in perceived communication competence and apprehension. Certainly, various predispositions like pre-existing personality traits (McCroskey, 1977) and previous type and quantity of experiences (Rubin & Graham, 1988) contribute to a person’s motivation to
become more communicatively competent or less communicatively apprehensive.

The results of this study do add to the limited research conducted outside the laboratory and in the workplace (Berman & Hellweg, 1989; Harville, 1992) and may stimulate further interest in defining the relationship between participatory management programs and communication traits such as competence and apprehension.
Appendix A

Survey and Cover Letter
I am a master’s candidate in the Greenspun School of Communication at UNLV. I am also a part-time facilitator for the company’s Quality Improvement Program. I am conducting a survey as a part of my master’s thesis that focuses on your opinion of your communication with others at work.

Your participation in this survey is voluntary. Your responses will remain completely confidential and will be reported only in combination with other responses to form a composite picture. Because of the relatively small population being surveyed and the significant time constraints, your timely response is considered crucial to the success of this project. Also, it is important that you respond to each question for this study to be statistically valid.

I appreciate your participation.
This part of the questionnaire is composed of statements concerning your feelings about communication with other people. Many of the statements are similar to other statements. Do not be concerned about this. Respond to each question by circling the appropriate number or filling in an answer in the space provided. PLEASE RESPOND TO EACH QUESTION.

Part I - Communication Performance

Please indicate how each statement reflects your own communication behavior by marking: (circle one)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<tbody>
<tr>
<td>Strongly Agree</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Agree</td>
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<tr>
<td>Undecided</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

1. I dislike participating in group discussions. 1 2 3 4 5

2. Generally, I am comfortable while participating in a group discussion. 1 2 3 4 5

3. I am tense and nervous while participating in group discussions. 1 2 3 4 5

4. I like to get involved in group discussions. 1 2 3 4 5

5. Engaging in a group discussion with new people makes me tense and nervous. 1 2 3 4 5

6. I am calm and relaxed while participating in meetings. 1 2 3 4 5

7. Generally, I am nervous when I have to participate in a meeting. 1 2 3 4 5

8. Usually I am calm and relaxed while participating in a meeting. 1 2 3 4 5
<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.</td>
<td>I am very calm and relaxed when I am called upon to express an opinion at a meeting.</td>
<td>1 2 3 4 5</td>
<td></td>
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<tr>
<td>10.</td>
<td>I am afraid to express myself at meetings.</td>
<td>1 2 3 4 5</td>
<td></td>
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<td>11.</td>
<td>Communicating at meetings usually makes me uncomfortable.</td>
<td>1 2 3 4 5</td>
<td></td>
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<tr>
<td>12.</td>
<td>I am very relaxed when answering questions at a meeting.</td>
<td>1 2 3 4 5</td>
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<td>13.</td>
<td>While participating in a conversation with a new acquaintance, I feel very nervous.</td>
<td>1 2 3 4 5</td>
<td></td>
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<tr>
<td>14.</td>
<td>I have no fear of speaking up in conversations.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
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<td>15.</td>
<td>Ordinarily I am tense and nervous in conversations.</td>
<td>1 2 3 4 5</td>
<td></td>
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<tr>
<td>16.</td>
<td>Ordinarily I am very calm and relaxed in conversations.</td>
<td>1 2 3 4 5</td>
<td></td>
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<tr>
<td>17.</td>
<td>While conversing with a new acquaintance, I feel very relaxed.</td>
<td>1 2 3 4 5</td>
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<td></td>
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<td><strong>Strongly Agree</strong></td>
<td><strong>Agree</strong></td>
<td><strong>Undecided</strong></td>
<td><strong>Disagree</strong></td>
<td><strong>Strongly Disagree</strong></td>
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<td>18.</td>
<td>I’m afraid to speak up in conversations.</td>
<td>1</td>
<td>2</td>
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<td>19.</td>
<td>I have no fear of giving a speech.</td>
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<td>2</td>
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<tr>
<td>20.</td>
<td>Certain parts of my body feel very tense and rigid while giving a speech.</td>
<td>1</td>
<td>2</td>
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<tr>
<td>21.</td>
<td>I feel relaxed while giving a speech.</td>
<td>1</td>
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<td>4</td>
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<td>22.</td>
<td>My thoughts become confused and jumbled when I am giving a speech.</td>
<td>1</td>
<td>2</td>
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<td>23.</td>
<td>I face the prospect of a giving a speech with confidence.</td>
<td>1</td>
<td>2</td>
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<tr>
<td>24.</td>
<td>While giving a speech I get so nervous, I forget facts I really know.</td>
<td>1</td>
<td>2</td>
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</table>
### Part II - Communication Behavior

Please indicate how each statement reflects your own communication behavior by marking if it applies to you:

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<tbody>
<tr>
<td>Always</td>
<td>Usually</td>
<td>Sometimes</td>
<td>Seldom</td>
<td>Never</td>
</tr>
</tbody>
</table>

1. When speaking with someone, the words I use say one thing while my face and tone of voice say something different.  
   1 | 2 | 3 | 4 | 5

2. When I speak with others, I speak clearly and distinctly.  
   1 | 2 | 3 | 4 | 5

3. When I speak with others, I can be persuasive when I want to be.  
   1 | 2 | 3 | 4 | 5

4. When I speak with others, my ideas are clearly and concisely presented.  
   1 | 2 | 3 | 4 | 5

5. When I speak with others, I thoroughly express and fully defend my positions on issues.  
   1 | 2 | 3 | 4 | 5

6. I am unable to tell whether or not someone has understood what I have said.  
   1 | 2 | 3 | 4 | 5

7. I know when I’m hearing a fact and when I’m hearing someone’s personal opinion.  
   1 | 2 | 3 | 4 | 5

8. When members of my work group make suggestions on how I can improve, I understand the suggestions.  
   1 | 2 | 3 | 4 | 5
<table>
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<tr>
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<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Always</strong></td>
<td><strong>Usually</strong></td>
<td><strong>Sometimes</strong></td>
<td><strong>Seldom</strong></td>
<td><strong>Never</strong></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>I understand the assignments that are given orally by members of my work group.</td>
<td>1</td>
<td>2</td>
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<td>4</td>
</tr>
<tr>
<td>10.</td>
<td>When I tell others about work-related information I’ve heard, my version leaves out some important items.</td>
<td>1</td>
<td>2</td>
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</tr>
<tr>
<td>11.</td>
<td>When I have to introduce myself in a meeting at work, I am able to fully and concisely describe my interests and let others know who I am.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12.</td>
<td>When speaking with others at work, I have to ask a question several times, in several ways, to get the information I want.</td>
<td>1</td>
<td>2</td>
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<td>4</td>
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<tr>
<td>13.</td>
<td>I have to answer a question several times before others seem satisfied with my answer.</td>
<td>1</td>
<td>2</td>
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<td>4</td>
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<tr>
<td>14.</td>
<td>I find it difficult to express my satisfaction or dissatisfaction about an issue to my work group.</td>
<td>1</td>
<td>2</td>
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<tr>
<td>15.</td>
<td>When I explain something to someone, it tends to be disorganized.</td>
<td>1</td>
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</table>
16. When I give directions to another person, the directions are accurate.

17. When I try to describe someone else’s point of view, I have trouble getting it right.

18. I am able to give a balanced explanation of differing opinions.

Part III - General

1. How long have you worked with this organization? _____ years

2. How long have you worked for organizations within this company? __ yrs.

3. Have you been a member of a quality improvement team? ___ yes ___ no

4. Have you been a member of a self-directed work group? ___ yes ___ no

   If "yes," move on to question 5; if "no," move on to question 7.

5. How long have you been active in a self-directed work group? ____ yr./mo.

6. How often does your self-directed work group meet? once every ____

7. Male ____ or female ____?

8. What was your age at your last birthday ____ years

9. How many years of schooling have you had? (circle one)

   High School  Undergraduate  Some Graduate  Master’s PhD
PLEASE!

Earlier this month, you received a questionnaire on communication in the workplace. For this study to be considered valid and representative, it is essential that as many responses are received from the original sample as possible. If you have already returned your questionnaire, thank you very much for your participation. If you have not yet returned the questionnaire, please take a few moments to complete and return it.

Thank you.
Thank you to everyone who returned the communication survey sent out last month. Check the following number and compare it to your "prize ticket" to see if you are the winner!

The $50.00 prize was donated by the Society for Technical Communication. If you have the winning ticket, please contact the administrative offices at 295-2923 to collect your prize.

Thank you again to everyone who participated in the survey.
Appendix B

Reviews and Approvals
PERMISSION TO SURVEY SELF-DIRECTED WORK GROUP POPULATION FOR MASTER'S THESIS

We are in the third year of a Quality Program which employs a methodology based in large part on Joseph Juran's Quality Improvement Process. An outgrowth of this activity has been the discovery and employment of self-directed work groups (sometimes called process improvement teams). These groups, normally formed of employees in the same work location and/or department, appear to be making strides in improving their work processes by meeting regularly to identify, analyze, and solve work-related problems.

A by-product of working in the team environment is often increased communication between employees within the work unit, between supervisors and employees, and often with those groups of employees outside the unit as well. Researchers have concluded that group participation has positive effects on perceived individual influence and communication effectiveness with supervisors, subordinates, and to some degree with peers. Little empirical research has been done on whether team participants perceive that they are increasing their level of communication competence.

As part of my master's thesis in Communication Studies at the University of Nevada, Las Vegas, I am proposing to survey those employees who have participated in self-directed work groups regarding group members' perceptions of influence, opportunity, autonomy, and communication competence as a result of group participation.

The survey will take approximately 15-30 minutes to complete. Participation will be voluntary and responses will remain completely confidential and will be reported only in combination with other responses to form a composite picture. The results of the survey may be valuable to managers of these work groups.
HUMAN SUBJECTS REVIEW
DESCRIPTION OF STUDY: RESEARCH PROJECT

1. **SUBJECTS:** Approximately sixty persons will be mailed a survey involving communication competence and communication apprehension. These sixty persons comprise all employees participating in self-directed work groups at a local engineering firm (approximately 30) and an equal amount not involved in work groups.

2. **PURPOSE, METHODS, PROCEDURES:** This exploratory study will examine communication competence and apprehension as perceived by employees of self-directed work groups as a function of their role shift in the group environment. A by-product of working in the group environment is often increased communication between employees within the work unit, between supervisors and employees, and often with those groups of employees outside the unit as well. Researchers have concluded that group participation has positive effects on perceived individual influence and communication effectiveness with supervisors, subordinates, and to some degree with peers. Little empirical research has been done on whether group participants perceive that they are increasing their level of communication competence and decreasing their level of communication apprehension.

The local engineering firm under study is in the third year of a Quality Program which employs self-directed work groups (sometimes called process improvement teams). These groups, normally formed of employees in the same work location and/or department, appear to be making strides in improving their work processes by meeting regularly to identify, analyze, and solve work-related problems.

As part of my master's thesis in Communication Studies at the University of Nevada, Las Vegas, I am proposing to survey those employees who have participated in self-directed work groups regarding members' perceptions of their communication competence and apprehension as a result of group participation. A control population (of equal size) will also be surveyed. Permission has been granted by the company to survey this population.

3. **RISKS:** The survey will take approximately 15-30 minutes to complete. Participation will be voluntary and surveys will be mailed to participants (a letter will be assigned to each survey and no names will be requested). Participants are reassured in the introduction to the survey that all responses will remain completely confidential and will be reported only in combination with other responses to form a composite picture. A letter will also be attached explaining that this research is part of a master's thesis on communication competence and communication apprehension.
4. **BENEFITS**: Information gathered from this study will be useful to the academic community. Future research was suggested on this topic in an article published in the *Journal of Business Communication* in 1989.

5. **RISK-BENEFIT RATIO**: Risk to participants is negligible. Benefits to communication and organizational management theorists may be substantial.

6. **COSTS TO SUBJECTS**: None.

7. **INFORMED CONSENT**: There will be implied consent by virtue of the participants returning the completed survey.
FROM: Dr. William E. Schulze, Director, Research Administration
DATE: 25 March 1993
RE: Status of human subject protocol entitled:
"Relationship Between Participation in Self-Directed Work
Groups and Employee Perception of Communication
Competence: An Exploratory Study"

The protocol for the project referenced above has been reviewed by
the Office of Research Administration, and it has been determined
that it meets the criteria for exemption from full review by the
UNLV human subjects committee. Except for any required conditions
or modifications noted below, this protocol is approved for a
period of one year from the date of this notification, and work on
the project may proceed.

Should the use of human subjects described in this protocol
continue beyond a year from the date of this notification, it will
be necessary to request an extension.
Bibliography


Communication abilities of managers: the relationship to performance.

*Journal of Management, 17*, 57-76.


