Team Level Competencies in
Self-Managing Teams:
Behaviors, Norms & Processes
That Make a Difference

Vanessa Urch Druskat

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VANESSA URCH DRUSKAT

Weatherhead School of Management
Case Western Reserve University
10900 Euclid Avenue
Cleveland, Ohio 44106
(216)368-6135
Fax: (216)368-4785
E-mail: vxd@po.cwru.edu

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This study integrates, validates and extends current knowledge about the behaviors, norms and processes that support effectiveness in self-managing work teams. It uses critical incident interviews with criterion samples of "superior" and "average" performing teams to determine the behaviors, norms and processes that differentiate the samples. These are labelled team-level competencies. Results support a model of thirteen specific team competencies that fall into three clusters: Effective Interpersonal Behaviors, Performance Strategies, and Effective External Actions. Results indicate that competence in any two of the three areas is needed to support "superior" team performance.
Despite decades of research on teams, knowledge about the specific team behaviors, norms and processes that support work team effectiveness remains limited. Theoretical models of team effectiveness consistently report four to five variables as norms and processes supporting team effectiveness (e.g., communication, effort, the presence of norms) (Cohen, 1994; Gist, Locke & Taylor, 1987; Gladstein, 1984; Hackman, 1986, 1987; Pearce & Ravlin, 1987; Sundstrom, DeMeuse, & Futrell, 1990). When these models have been tested in organizations, results about the impact of the variables representing team behaviors, norms and processes have been inconsistent (see Campion, Medsker, & Higgs, 1993; Cohen, Ledford, & Spreitzer, 1996; Denison, Hart, & Kahn, 1996; Gladstein, 1984; Holahan & Schoorman, 1993). As a result, it has been suggested that the team norms and processes often included in theory and research may not be valid, exhaustive, or sufficient (Gladstein, 1984; Goodman, Ravlin, Schminke, 1987; Cannon-Bowers, Tannenbaum, Salas, & Volpe, 1995).

The team norms and processes often included in models of team effectiveness suffer from several shortcomings. First, most were identified through laboratory research conducted with ad hoc temporary groups doing tasks with short-lived or little meaning. These groups had little history or anticipated future to influence member behavior and were clearly operating in a different context than the empowered or self-managing work teams commonly found in organizations today (Campion et al., 1993; Gladstein, 1984; Goodman et al., 1987; Guzzo & Shea, 1992;
McGrath, 1991). Second, because we have no validated model or framework of the norms and processes related to team effectiveness, the decision to include or, importantly, omit a particular variable in theory or research is never entirely clear; e.g., why include communication and omit cohesion when both have received some theoretical and empirical support, or, include potency and ignore cooperation? Third, the variables included in models tend to be vaguely and inconsistently defined, thus, limiting reliable assessment of their influence and making research findings confusing and less practical (Cannon-Bowers et al., 1995; Goodman, Ravlin & Argote, 1986).

In her theory of effectiveness in self-managing work teams, Cohen (1994) argued the importance of behavioral norms to the effectiveness of such teams. Indeed, effective behavioral norms and processes seem essential for self-managing work teams that hold the responsibility for executing their work and monitoring and managing their own performance. However, Cohen, concluded that the vague status of current knowledge about team norms left her unable to propose specific hypotheses about those norms that influence team effectiveness. She called for exploratory research to uncover and define the specific norms related to team effectiveness (Cohen, 1994).

Exploratory and inductive methodologies have been proven useful for studying the rich and complex nature of team norms and processes (see Ancona & Caldwell, 1988, 1992; Barker, 1993; Murnighan & Conlon, 1991; Weick & Roberts, 1993). However, most
inductive research has examined a single category of variables and has not moved knowledge towards an integrated or validated comprehensive model of the norms and processes that influence team effectiveness.

The purpose of the present study is to develop a comprehensive model of the behaviors, norms and processes that impact effectiveness in self-managing work teams. It utilizes an inductive methodology that can examine the complex nature of group process while permitting rich and detailed analyses. It has three goals. First, to validate and integrate existing knowledge by identifying which of the behavioral variables often discussed separately by different theoreticians and researchers are related to team effectiveness. Second, to further knowledge by discovering behavioral variables overlooked or ignored in previous hypothesis testing research. Third, to more clearly define those behavioral variables that support team effectiveness and, thus, provide important information for future theory, research, and practice with self-managing work teams. Before presenting this study, I first define team norms and processes and present a brief overview of the behavioral variables most often proposed to influence team effectiveness.

LITERATURE REVIEW

Behavioral Norms and Processes in Work Teams

Team norms are defined as standards or informal rules that groups adopt to regulate and regularize group member behavior (Feldman, 1984). They express a team’s values and create
expectations about appropriate attitudes and behaviors. Researchers have operationalized norms as relatively stable and predictable behavioral processes (Bettenhausen & Murnighan, 1985). Behavioral processes are defined as the individual or collective actions, both intrapersonal and interpersonal of the members of a team (Steiner, 1972). Team members receive negative sanctions when their behaviors or actions do not conform to team norms (McGrath, 1984) and positive rewards when they do (e.g., acceptance) (see Barker, 1993).

Theory and research on team behaviors, norms and processes takes two forms. The first is within the study of comprehensive models of team effectiveness where they are considered one set of predictor variables in a broad, contextual model of team effectiveness. The second is the focused study of specific behavioral variables, e.g., conflict or external boundary management. What follows is a brief overview of findings from both forms of study.

Comprehensive models of team effectiveness. To build understanding of the systemic nature of team effectiveness several theorists and researchers have developed comprehensive models that include the contextual and behavioral variables they believe influence team effectiveness (Cohen, et al., 1996; Gist et al., 1987; Guzzo, 1986; Hackman, 1986, 1987, 1990b; Kolodny & Kiggundu, 1980; Pearce & Ravlin, 1987; Shea & Guzzo, 1987; Steiner, 1972; Sundstrom, et al, 1990). These models are most often designed as input-process-output models. Thus, behavioral
processes are theorized to be caused by conditions in a team’s context and then, in turn, to play a pivotal role in team outcomes.

Three behavioral variables often included in models of team effectiveness are norms, strategy, and effort. The presence of norms that regulate member behavior is frequently proposed to support team effectiveness (Cohen, 1994; Gist et al., 1987; Hackman, 1986, 1987; Sundstrom et al., 1990), however, the variable has not received much empirical examination. Two studies showed moderate positive correlations between the presence of norms and team self-ratings of effectiveness (Cohen et al., 1996; Denison et al., 1996), yet, one of these also revealed a negligible Pearson’s correlation ($r = .04$) with manager ratings of team effectiveness (Cohen et al., 1996). Strategy and the discussion or use of appropriate strategies is also frequently proposed to influence team effectiveness (Gist et al., 1987; Gladstein, 1982; Guzzo, 1986; Hackman, 1986, 1987; Steiner, 1972). Laboratory research has determined that when member coordination is necessary, discussions of strategy are related to team effectiveness (Hackman, Bousseau, & Weiss, 1976; Hirokawa, 1980). However, only the use of specific boundary management strategies, which involve managing relationships with individuals outside of the team, have received empirical support in the field (Ancona & Caldwell, 1988, 1992; Gladstein, 1984). The presence of effort is another variable included in some models of team effectiveness (Gist, et al., 1987; Hackman, 1986, 1987). It has
received little empirical attention but recently was found to be positively correlated with team self-ratings of effectiveness in cross-functional teams (Denison et al., 1996). In sum, the relevance of norms, strategy, and effort, to team effectiveness has received limited support; moreover, the variables have not been defined or examined at a practical level of specificity.

Team open communication has been theorized as basic to group development (Luft, 1984) and important to team effectiveness (Gladstein, 1984; Pearce & Ravlin, 1987). However, the variable has received inconsistent research support. Gladstein’s (1984) research with sales teams found open communication was related to member self-ratings, but not to objective measures of team effectiveness. Campion’s (Campion et al., 1993) study of financial services teams found a three item scale measuring communication/cooperation to be significantly related to objective measures of effectiveness. Yet, a study of manufacturing teams (Holahan & Schoorman, 1993) found open communication was highly correlated with team cohesiveness, but not with team efficiency or quality of production.

Cooperation or team member support has surfaced as relevant in inductive studies of team effectiveness (Kolodny & Kiggundu, 1980; McIntyre & Salas, 1995). However, again, one large scale hypothesis-testing study (Campion et al., 1993) supported its relevance to objective measures of team effectiveness, while another (Gladstein, 1984) found it to be exclusively related to member self-reports of effectiveness.
A variable that has received much recent theoretical attention and empirical support is referred to as either potency (Guzzo, 1986; Guzzo, Yost, Campbell & Shea, 1993; Shea & Guzzo, 1987), collective efficacy (Gibson, 1996; Prussia, 1994; Silver & Bufanio, 1996), or collective efficacy performance spirals (Hackman, 1990b; Lindsley, Brass, & Thomas, 1995). The variable refers to a norm or collective belief that the team can be or is effective. It has been related empirically to team effectiveness in tests of comprehensive models (Campion et al., 1993) and in studies designed to explicitly examine the construct (Gibson, 1996; Prussia, 1994; Shea & Guzzo, 1987; Silver & Bufanio, 1996).

In sum, comprehensive models have proposed a number of behaviors, norms and processes to be related to team effectiveness. The list reviewed above presents those variables most frequently cited. Confidence in the relevance of most of these variables could benefit from increased empirical testing and increased specificity in their definitions.

**Focused examinations of specific behavioral processes.** Some researchers have concentrated their theoretical and empirical effort on understanding and validating the relevance of specific behavioral variables hypothesized to influence team effectiveness (e.g., Ancona & Caldwell, 1988, 1992; Barker, 1993; Jehn, 1995). Ancona and Caldwell (1988, 1992) have studied team boundary management strategies or "the handling of relationships with other groups or individuals who provide inputs or absorb outputs from the group" (Gladstein, 1984, p. 500). They have determined
that these strategies fall into distinct categories including, "ambassadorial" activities focused on securing resources and protecting the team from interference; "task-coordinator" activities focused on managing horizontal dependence; and "scouting" activities focused on procuring information. The highest performing product development teams have been found to utilize both ambassadorial and task-coordinator activities (Ancona & Caldwell, 1992).

Recent research by Jehn (1995) has focused on the characterization and outcomes of conflict in work teams. This research has revealed that relationship oriented conflict is not related to team performance, but, that task oriented conflict improves performance in teams that conduct non-routine tasks and hinders performance in teams that conduct routine tasks.

Barker (1993) used ethnographic methods to conduct a focused study of control processes within self-managing work teams. His research revealed that in the early stages of team development, control within self-managing teams comes from the collective values of team members and team members monitor their own behavior. As a team matures and its membership changes, it develops strict norms and control becomes rooted in norm enforcement. Finally, as a team's membership and circumstances continue to change, a third stage emerges in which norms turn into formal rules and procedures that serve to more formally coordinate and regulate team member behavior.

In sum, several researches (only a few who have been
discussed here) have chosen to conduct in-depth investigations of specific behavioral norms and processes. They have made important contributions to knowledge about work team behaviors and processes, but, have not assisted directly in the development of a comprehensive, integrated perspective on the norms and processes that influence team effectiveness.

When examined closely, it becomes clear that our cumulative knowledge about behaviors, norms and processes in work teams is not as integrated or reliable as would be ideal for designing meaningful theory, research, or practical team interventions. The present research seeks to integrate, validate, clarify and expand upon current knowledge of the behaviors, norm and processes related to the effectiveness of self-managing work teams. It involves an in-depth investigation of the behaviors, norms and processes displayed significantly more often by effective than less effective teams. These will be labelled team-level competencies.

**Team-level Competencies**

A significant body of research has examined and defined the individual-level competencies required for success in specific jobs (see Boyatzis, 1982; Spencer & Spencer, 1993). Individual competencies are defined as any characteristic that can be shown empirically to differentiate significantly between superior and average performing individuals in a job. No research has yet examined or defined the competencies that support team effectiveness. At the team level, competencies are defined as
patterns of behaviors, norms and processes that can be shown empirically to differentiate significantly between superior and average performing teams. The present research will lay the ground work for understanding team competence.

The most common method used to study individual competencies is the Job Competence Assessment Method (see Boyatzis, 1982; Klemp & Spencer, 1982; McClelland, 1976; McClelland & Dailey, 1972; Spencer & Spencer, 1993). This method involves studying those who perform a job well to determine inductively the competencies that distinguish them from less effective job incumbents. The present research adapted the Job Competence Assessment Method to study team-level competencies. Three factors related to the research goals influenced the decision to use this method. First, the need for increased specificity in defining the behaviors, norms and processes related to team effectiveness and the opportunity inductive research permits for rich, detailed descriptions. Second, to permit the discovery of new behavioral variables related to team effectiveness that have not been identified previously. Third, because of the success competency methodology has had in providing detailed and practical information for theory, research, and application (Boyatzis, 1982; Boyatzis, Cowen, & Kolb, 1995; Dubois, 1993; Lawler, 1994; Mitrani, Dalziel, & Pitt, 1993; Spencer & Spencer, 1993). The study is presented below.

METHOD

Overview of Research Strategy
The research strategy involved three steps specified by the Job Competence Assessment Method (McClelland, 1976; McClelland & Dailey, 1972): (1) the identification of criterion samples of "superior" and "average" self-managing teams, (2) data collection including in-depth team-level interviews using a critical incident-type format, and (3) data analysis to determine inductively the behavioral norms and processes that differentiate significantly the "superior" and "average" groups. The Job Competence Assessment Method specifies identifying an "average" rather than "poor" performing criterion sample because of the logic that most performers are "average" and the view that the research results will, thus, have the potential to make the greatest difference for the greatest numbers.

Sample

Research site. Research goals contributed to the decision to conduct the study in one organization. One of these was to control for contextual variance in order to isolate, as best possible, competencies based upon team behaviors, norms and processes. Thus, it was decided to conduct an in-depth and thorough analysis in one organization. The site selected was a Fortune 500 chemical processing manufacturing plant with 2000 employees and 150 self-managing production teams. At the time of data collection, these teams had been operating as intact units for approximately five years.

Sample selection. The goals for sample selection were, first, to obtain criterion samples of clearly "superior" and
clearly "average" teams and second, to control for as much variance related to context, task, and group structure as possible. It was decided to utilize the criterion-sample sub-grouping method called for in the Job Competence Assessment Method despite the limitations of studying subgroups, e.g., the weaker statistical power and the discarding of data on certain sub-groups (Stone & Hollenbeck, 1989). The choice was made because of the preliminary, inductive stage of the research and the goal of isolating a group of teams that were explicitly and unquestionably superior performers in order to conduct an in-depth analysis of the differences between their behaviors, norms and processes and those of a group of clearly average performers.

Task variance is well known to play a role in team effectiveness (Goodman, 1986; Guzzo, 1986; Hackman, 1987; McGrath, 1984; Steiner, 1972), therefore, the first step taken in sample selection was to reduce the pool of 150 self-managing teams to a pool of 84 teams that completed relatively similar tasks. All tasks involved running large manufacturing equipment in a continuous process environment. Task responsibilities included producing the highest quantity and quality of their product possible and, thus, managing time, coordination of team members, equipment breakdowns, and product changes. Task and context were further controlled by matching "superior" and "average" teams by exact task (discussed below).

The selection of "superior" teams was based on triangulated criteria that included (1) objective performance data, (2)
nominations from team members, and (3) nominations from managers. It had been the policy of the plant to not maintain performance records because of prior negative experiences with competition between teams (this policy had just started to change in some areas). Thus, determining the appropriate performance data to seek out for each team involved interviewing team members, managers, and engineers and searching for records on the recommended data. The data collected included: Amount of top quality product produced per "person hour," average amount of time taken for equipment changes, and average amount of waste.

There were two constraints involved in analyzing these data: (1) teams conducted slightly different tasks, and (2) teams conducting the same tasks used equipment that differed in age and quality. Thus, to make performance data comparable, objective data were standardized across task and equipment using z-scores (four teams used each machine). Tasks and equipment were considered of comparable difficulty to perform and operate. For each team, the time period of data collected depended upon the availability of records. Data were collected for at least the time period of 4 weeks prior to sample selection (range = 4 - 40 weeks; mode = 8 weeks). All teams were then ranked according to their z-scores. Although far from perfect, it was felt that because sample selection criteria also included nominations from two separate sources (discussed below), this method was superior to using less meaningful but more standardized objective measures (e.g., attendance or turnover).
Nominations from team members and managers were obtained through nomination methods used in previous competency research (Boyatzis, 1982; McClelland, 1976). Nominations from 46 team members were obtained through the use of focus groups. Four focus groups attended by a stratified sample of employees from the plant discussed team effectiveness and then, using a confidential ballot that included a list of all teams in the sample pool, nominated the teams they considered most outstanding. Employees were capable of this task because the plant stayed in operation 24 hours per day, seven days a week, and all employees were required to take advantage of the abundant opportunities to work overtime hours on other teams. Nominators could not nominate their own teams. Teams were then ranked using a ratio of the number of nominators who knew a team well enough to judge it (as indicated by the nominators), by the number of nominations it received.

Nominations from managerial level personnel were obtained by mailing or delivering confidential ballots to 14 managerial level personnel including all second and third line managers and engineers deemed by the organization development specialist to have extensive experience working with the teams. Only one manager, who was in the process of transferring to another plant, did not respond. Again, teams were ranked using a ratio of the number of individuals who felt they could judge a team, by the number of nominations received.

The final selection data included three lists; teams ranked
by objective performance data, teams ranked by team-member nominations, and teams ranked by managerial nominations. It was decided to incorporate the general rule-of-thumb used in most competency research that the "superior" sample should include the top 10% of the sample pool. Also, it was determined that the teams selected as "superior" had to receive a top ranked performance score and receive a top ranked number of nominations from both groups. "Average" teams were selected as those with average performance scores. In 70% of the cases they received no nominations. Finally, the "average" teams were also selected to match the exact job tasks of the teams selected into the "superior" sample. This made objective performance data comparable and helped control for variance due to task, leadership above the supervisory level, and team size.

Final sample. A final sample of 10 "superior" (top 12% of the pool) and 10 "average" teams was selected. Three research goals influenced and supported the small sample size: First, the goal to control for variance around context, task and group structure so that we could, as best possible, focus on team differences due to behaviors, norms and processes. Controlling for these variables significantly reduced the size of the sample pool from which we could choose our sample. Second, the desire to limit the "superior" performing criterion sample to only those teams that were unquestionably outstanding performers. Third, the goal of taking an in-depth look at the highly complex issue of group behaviors, norms and processes, a task we felt was best
suited to the kind of deep and careful analysis possible with a small sample.

Teams in the final sample ranged in size from 6-13 members ("superior" sample mean = 9.5, "average" sample mean = 9.7). Due to the continuous process nature of the tasks and the timing of the interviews, five "average" and four "superior" teams were interviewed during off-hours. Members of these teams were paid overtime wages for participating in the study. The overall member participation rate was 77% for "superior" and 77% for "average" teams. Table 1 shows that there were no significant demographic differences between the teams in the "superior" and "average" samples.

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Insert Table 1 about here
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Data Collection

Procedures. The twenty teams in the final sample were notified verbally and in writing that they had been selected to participate in a study examining "what it takes for a team to work well and what gets in its way." At the time of data collection, each team was further told that it had been selected for the study because it knew its job well and could talk about it easily. The four hour block of time scheduled with each team included: (1) A standardized introduction to the study, (2) three hours for a team interview, (3) the completion of questionnaire scales by individual team members, and (4) a short break.
Team interviews. I conducted all interviews which were audio-taped. The interview format was the Behavioral Event Interview (BEI) (Boyatzis, 1982; McClelland, 1976; McClelland & Dailey, 1972) which is derived from the Critical Incident Interview (CIT) technique (Flanagan, 1954). The BEI provides information about what people do, say, think, and feel in actual work situations. It asks respondents to discuss recent specific events on the job where things turned out well or poorly, while the interviewer, who is blind to condition ("superior" or "average" condition), uses an investigative probe strategy to obtain a detailed and as accurate as possible account of each event without leading respondents. Specifically, the team members were asked to describe what led up to the event, who said and did what to or with whom, and what they were thinking or feeling at the time. Teams were asked to come to the interview ready to discuss four events; two in which they worked together well and felt effective as a team and two in which they did not work together well and felt less than effective.

The BEI format purposely asks interviewees to choose the events they wish to discuss and specifies that they should have occurred within the recent past. Choice and recency increase the saliency of the event and importantly, maximize the level of detail that can be recalled and discussed. The choice of specific events is less important to the outcome of the interview than the operant thoughts and behaviors occurring during the open-ended event. This is especially true in the present
research where we controlled for variance due to task, leadership above the supervisory level, team size, and organizational culture. Here, the situations faced by the teams in the final sample were similar, what differed were the behaviors, norms and processes utilized to meet common opportunities and challenges, e.g., efficiency, productivity, and member coordination. Examples of events discussed include: Specific times when the electricity went out at the plant shutting down all equipment and requiring coordinated effort to start it up again; effective and ineffective examples of the team work required to do product changes on their equipment; and designing and implementing new ideas to improve work processes.

Questionnaire scales. Team members completed demographic information sheets and two questionnaire scales to be used as manipulation checks. The scales assessed the clear distinction between the samples of "superior" and "average" teams on two dimensions: (1) Internal Fragmentation, which had 4 items, e.g., "There is constant bickering in my work group" (Seashore, Lawler, Mirvis & Cammann, 1982), and (2) Group Viability, which had 7 items, e.g., "As a team, this work group shows signs of falling apart" (reverse scored) (Hackman, 1990a). Item response formats ranged from 1 (Strongly Disagree) to 7 (Strongly Agree) with some items reverse scored.

Data Analysis

Developing an interview coding scheme. Audio tapes of the team interviews were transcribed verbatim into written text (mean
pages for "superior" teams = 79; "average" teams = 75). Data analysis then began with the reading of each of the 20 transcripts and the field notes taken after thorough tours of each team's work area and after other observations, informal interviews, and discussions with team members, managers, supervisors, and staff during the data collection period. (Data collection involved six weeks of full-time, in-residence presence at the plant.) While reading these data, I recorded a list of the behaviors, norms and processes exhibited by the "superior" teams and a list of those exhibited by the "average" teams.

The second phase involved selecting a subsample of five random transcripts of "superior" teams and a subsample of five random transcripts of "average" teams and conducting a more in-depth content analysis of these transcripts. This process involved taking detailed notes while going back and forth between transcripts comparing and contrasting statements made by team members and looking for and recording similarities or patterns of behaviors, norms and processes reoccurring within each of the subsamples ("superior" and "average"). Information taken from the notes recorded during the initial reading of all transcripts were added to these data. The end result was a list of examples of behaviors, norms and processes occurring within the "superior" and "average" groups. These were then clustered by themes.

I then compared and contrasted the themes of behaviors, norms and processes across the two subsamples and identified those that differentiated the "superior" and "average" groups.
At this point, I reread the subsample of 10 transcripts to
determine the presence or absence of each of the themes while
editing their labels and the examples under each label so as to
maximize how well they would differentiate between the "superior"
and "average" groups.

From this analysis, a codebook was created which consisted
of 19 competency themes of behaviors, norms and processes that
appeared to be exhibited by the "superior" teams more often than
the "average" teams. Each theme consisted of a thematic label
and a list of behavioral indicators or examples of alternate ways
in which the competency theme could be revealed in the team
interview. I then used the codebook to code one full interview
transcript for the presence or absence of each of the competency
themes. Codes that were unclear or difficult to apply were
revised. Importantly, although this inductive theme-building
process was informed by my knowledge of the small groups
literature, a strong attempt was made to ground all competency
themes in the data and build data driven codes.

In the final phase of code development two coders who were
blind to condition were employed. The coders underwent an
iterative training process. They used the codebook to code one
full transcript and then thoroughly discussed their code
interpretations and applications with the researcher. Codebook
themes and examples were then clarified and refined. Coders then
coded a second transcript and the code refinement process was
repeated. Table 2 presents the nineteen final competency theme
codes and examples of how they could be manifested.

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Insert Table 2 about here

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Coding procedures. Three coders (two blind coders and myself) read and coded each transcript. Coding involved scoring the original interview transcripts for the presence or absence of each of the competency themes, that is, identifying each time a behavior, norm, or process defined in one of the nineteen competency themes was cited and then marking that statement with the appropriate code. The interview was considered the unit of analysis so that the number of times a competency theme could be cited was limitless. Coders followed explicit rules to determine the presence or absence of a competency theme. These rules are presented in the Appendix.

When a complete transcript had been coded, a frequency count of the number of times each competency theme had been applied to each team was tallied. The interviews contained a fair amount of company jargon and context specific statements that I, as the primary researcher, fully understood but might not be fully understood by the other coders. Therefore, to maximize the validity and reliability of the final code applications the following coding process was utilized: (1) All three of us coded all transcripts independently, (2) coder #1 and I then met, discussed coding discrepancies and agreed upon our final codes, (3) coding reliability was calculated by comparing the
frequencies of our final codes with those of coder #2. Frequencies used for the final analysis came from the codes agreed to by coder #1 and myself. Table 3 presents descriptive statistics for each code.

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Insert Table 3 about here
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Coding reliabilities were calculated for each separate code as the percent agreement across all transcripts between the frequency of the code assigned by (1) myself and blind coder #1 and (2) blind coder #2. Reliabilities are based on 18 of the 20 transcripts because two of the transcripts had been used to train coders. Code reliabilities ranged from .92 to .60, Median = .83. Table 3 presents the coding reliabilities for each code.

RESULTS

Manipulation Checks

Scale data collected for the manipulation check were aggregated to the group level because scale items in both scales referred to the group (Van de Ven & Ferry, 1980). Intraclass correlations were used to assess interrater reliability of the aggregate responses across team members in each team. These were significant (p<.001) for both scales. T-tests revealed significant differences between the groups on both scales. Members of the "average" teams rated their teams as having significantly more Internal Fragmentation (Cronbach alpha = .82) \((M = 3.45, SD = .86)\) than did the "superior" teams \((M = 2.59, SD = .75)\).
= .75), \( t(20) = 2.40, p < .05 \). Members of the "superior" teams rated their teams as having a significantly higher level of Group Viability (Cronbach alpha = .84) (\( M = 5.60, SD = .82 \)) than did the "average" teams (\( M = 4.69, SD = .68 \), \( t(20) = 2.71, p < .01 \). (Scales ranged from one to seven.) These results increase our confidence that we have selected criterion samples that differ significantly on constructs proposed to be dimensions of team effectiveness (see Hackman, 1986, 1987).

**Research Findings as they Relate to the Competency Themes**

Results supported 13 competencies that significantly distinguished between the "superior" and "average" teams. The study findings are presented in Table 4. The table presents the means, standard deviations, and t-tests for each competency theme. Probability levels of \( p < .10 \) are considered significant because of the small sample size, the likelihood for large standard deviations in this type of research, and the exploratory nature of the study. Patterns within the study findings are discussed in greater detail in the sections which follow.

Insert Table 4 about here

**A Post-Hoc, Within-Code Analysis**

To perform a validity check of the results, I reread the field notes I had taken during my six week residence in the plant. These notes had been taken during and after numerous observations of the teams, the 20 team interviews, and interviews
and conversations with team members, supervisors, managers, and staff. The one result that was not supported by my field notes was that for Open and Honest Communicating (t(20) = 1.15, n.s.). My notes indicated that frank and open communication had been clear and pervasive within the "superior" teams. Thus, I returned to the coded transcripts and examined how and when the code had been applied. It appeared that both the "superior" and "average" teams were likely to express awareness of the importance of open and honest communicating, but, that the "superior" teams discussed more examples of frank and honest confrontation when a team member's actions did not comply with team norms. Thus, I chose to run a post-hoc analysis and broke the code into two categories: (1) Expressed awareness of the importance of open and honest communicating and (2) confronting team members who break norms. Other coded behaviors involving openly and honestly communicating were too infrequent to test (Superior teams M = .30, SD = .68; Average teams M = .40, SD = .97). Table 4 includes the results of the post-hoc analysis. "Average" teams were equally as likely as "superior" teams to discuss examples in which they expressed awareness of the importance of open and honest communicating, t(20) = 0.14, n.s. However, Confronting Team Members Who Break Norms was exhibited with greater frequency in the "superior" teams, t(20) = 1.45, p < .10. Due to this analysis and the strong support it received in my field notes, I decided to consider Confronting Team Members Who Break Norms a team competency and included it in all further
Relationships Among the Competencies

To better understand the interrelationships among the 13 team-level competencies and their underlying structure, two processes were undertaken. I first examined the Pearson's correlations among the competencies. I then scheduled separate meetings with one expert on competency model development, and three experts on group dynamics and team effectiveness (all hold a Ph.D. and conduct research in the areas mentioned). In each meeting we discussed the clustering of the 13 competencies into conceptually clear categories while examining the definitions and examples of the competencies and their intercorrelations. The result of these meetings was full agreement that the competencies fell into three clusters labelled: Performance Strategies, Effective Interpersonal Behaviors, and Effective External Actions. There was also full agreement about the competencies that fell within the clusters for all competencies except Proactivity in Problem Solving which appeared to fit in both the Performance Strategy and External Action clusters. After several iterative conversations there was 75% agreement that Proactivity in Problem Solving should be included in the External Action cluster. Table 5 shows the intercorrelations among the competencies in the three clusters. Table 6 shows the intercorrelations among all competency theme codes examined. Figure 1 shows the final three cluster competency model and the Pearson's correlations between clusters.
Profiles of Team Effectiveness

An important question is whether all superior teams are competent in all three clusters or whether effective teams can be strong in one area and weak in another. To test this question, the frequency with which each team exhibited the competencies in a cluster was calculated. Then, each team was tested to see whether this frequency was above or below the mean frequency for all teams (See Table 7). Teams with frequencies that fell above the mean for a cluster were considered to be characterized by that cluster. Performance Strategies characterized 70% of the "superior" teams and 30% of the "average" teams. Interpersonal Behaviors characterized 70% of the "superior" and 30% of the "average" teams. External Actions characterized 70% of the "superior" teams and 20% of the "average" teams.

The results also revealed that only 20% of the "superior" teams could be characterized by all three clusters; while 90% could be characterized by at least two of the clusters. For the "average" teams, 10% could be characterized by all three and 20% could be characterized by at least two clusters. A further look at the data for the "superior" teams indicated that all three
teams that were not characterized by External Actions were characterized by both Performance Strategies and Interpersonal Behaviors. Also, all three teams that were not characterized by Interpersonal Behaviors were characterized by External Actions and two of the three were also characterized by Performance Strategies. All three teams that were not characterized by Performance Strategies were characterized by External Actions and two of the three were also characterized by Interpersonal Behaviors. Importantly, no set of clusters was most common among the "superior" teams. Of the seven "superior" teams characterized by only two clusters; two were characterized by Interpersonal Behaviors and External Actions, three by Interpersonal Behaviors and Performance Strategies, and two by External Actions and Performance Strategies. These data indicate that to be "superior," a team need only be competent in two of the three clusters in the team competency model.

DISCUSSION

The present study develops a comprehensive, wholistic model of the specific team behaviors, norms and processes that support effectiveness in self-managing teams who share similar contexts, structures and tasks. Thirteen behaviors, norms and processes were labelled team competencies because they significantly differentiated criterion samples of "superior" and "average" self-managing teams.

The team-level competencies that distinguished superior team performance fell into three behavioral clusters: Effective
Interpersonal Behaviors, Performance Strategies, and Effective External Actions. The early social psychological laboratory research of the 1950's and 1960's, upon which many of our existing theories of team effectiveness are based, consistently supported models with two clusters of behaviors focused on task and interpersonal processes (Bales, 1950--instrumental and expressive; Benne and Sheats, 1948--task and maintenance; and Steiner, 1972--coordination and motivation). More recent theorists have continued to focus on only one or two of the three clusters identified here. Hackman (1986) proposes the importance of performance strategies but minimizes the causal role of interpersonally related behaviors and externally focused actions. Pearce and Ravlin (1986) propose the relevance of interpersonally related behaviors (e.g., commitment to the group), but ignore performance strategies and external actions. Ancona's research, the first to determine empirically the importance of externally focused actions, deemphasizes intra-team performance strategies and intra-team interpersonal behaviors (1990; Ancona & Caldwell, 1988, 1992; Gladstein, 1984). Thus, the results of the present study integrate perspectives on team effectiveness while validating and extending current knowledge.

Importantly, the results of this study reveal that all superior performing teams do not behave alike. Most of the "superior" teams in the present study were characterized by two of the three behavioral clusters. This implies that expecting or training all teams to engage in similar normative behaviors may
be like expecting all employees to behave alike. Teams seem to have different strengths and personalities. In fact, variety amongst problem-solving methods may contribute to organizational effectiveness by spreading a variety of skills and strengths across the organization. Team members bring varying methods with them to cross-functional problem solving teams. Also, teams are not all placing the same stresses on employees and organizational support systems, e.g., effectiveness does not require all teams to ask their members to work through breaks or to knock on the doors of upper level managers to get resources. Another implication involves the concept of fit between team member and team task-norms. As in person-organization fit (Chatman, 1991; O’Reilly, Chatman, Caldwell, 1991; Posner, 1992), a team member may be most satisfied, committed, and less likely to leave when team norms and processes are consistent with one’s own values.

In sum, the present research has identified three clusters of team-competencies that present alternative routes to team effectiveness. The section which follows discusses how the specific competencies within each behavioral cluster contribute to our understanding of effectiveness in self-managing work teams and extend previous research and theory.

**Study Results as they Relate to the Behavioral Clusters**

**Performance Strategies.** Performance strategies are defined here as choices made by members about task-related behaviors and actions performed within the team in order to complete the task well. The term strategy is not meant to suggest the actions are
always intentional, but, rather, that they represent a subset of activities demonstrated consistently (Ancona & Caldwell, 1992).

Three competency theme codes focused on aspects of team learning: Attention to Learning and Development, Attention to Feedback, and Team Self-Evaluation. Two of these were supported. "Superior" teams did not demonstrate greater Attention to Learning and Development through sharing knowledge, coaching, or focusing to a greater extent on learning more about the job or organization. However, they did attend more to feedback inherent in their work process. Feedback is well-known to play an important role in team effectiveness (Hackman, 1986; Kolodny & Kiggundu, 1980; McIntyre & Salas, 1995; Nadler, 1979; Pearce & Ravlin, 1987; Shea & Guzzo, 1987; Sundstrom, et al., 1990).

Members of the "superior" teams in this study obtained this feedback by carefully monitoring their equipment and outputs and by giving it to one another. A member of one "superior" group responded to the interviewer's question of how the group knew when it was doing good work in the following manner:

"I guess they tell me. We are pretty good about telling each other...pretty open, you know, if somebody is not doing too good we will approach him and tell him."

This competency supports theory proposing that jobs should be designed to maximize the feedback available from a task (Hackman, & Oldham, 1980), and research revealing that members of effective teams monitor each others performance and provide one another with feedback (McIntyre & Salas, 1995).

Consistent with previous research (McIntyre & Salas, 1995)
the "superior" teams also had a good sense of their strengths and weaknesses (Team Self-Evaluation). Towards this end, they frequently watched and compared themselves to other teams; a form of social comparison (Festinger, 1954) that gave them a better sense of the benefits and costs of their own team norms. One member of a "superior" team stated:

"At the beginning of the shift we know who's going to be relieved [for breaks] and when and who's going to relieve them. I've worked on other crews before and it'd be 10:00 and nobody said nothing about who was going to relieve me...And I said something...[and they said] 'just leave' [turn off the equipment]. I think that's one reason we get a little bit more [production] out than other crews; because they'll just leave it."

Results also revealed that the "superior" teams were more focused on their performance (Performance Orientation). They exhibited a higher level of what McClelland (1961) labels achievement motivation. They were concerned with achieving a high level of production, worked through breaks, kept equipment running when short of help, and worked harder or faster than required. A member of one "superior" team shared the following:

"When they doff [the job done by half of the team] we come up out of the creel [job done by the second half] and go help doff...We'll be flying around, working, working working...but see, that's production."

The "average" groups were less focused on performance and discussed fewer examples in which they exhibited extra or discretionary effort. They were more likely to shut down their equipment or slow down their production when short of help.

The "superior" teams also set up clear work procedures for break schedules and common and uncommon tasks such as product
changes and emergency shut downs (Creating Clear Work Procedures). Thus, unlike the "average" teams, they did not waste time in daily procedural discussions or in arguments over perceived inequities. One member of a "superior" team described his team's product changes in the following way:

"We've got a system. Without the system it was chaos so we sat down in a meeting and said we needed to come up with something. In the system...we are all working together and [all know] what the other person is going to do."

A member of an "average" team that had agreed to rotate jobs said the following:

"You can't rotate people like they are supposed to... people in the team get upset at whoever is doing the line-up... its not the coordinators fault."

On the other hand, when needed, the "superior" teams were also flexible in their work roles, break schedules, and in equipment use (Flexibility). In one "superior" team, the truck a member used for moving heavy equipment broke down. A team member who had a shorter distance to travel lent her her truck and carried her own heavy equipment by hand. The "superior" teams also discussed more events in which members performed tasks that were the responsibility of another member or another team.

The "superior" teams in this study were also more confident in their ability to perform well and to be self-managing (Team Confidence). It was common to hear them say things like:

"If everybody [did product changes] the way we do, they'd be the best too," or "Any supervisor will tell you that [we have] a reputation of running without a supervisor...we don't need any supervision to do a good job."

This finding is supported by theory and research indicating a
relationship between team performance and the similar constructs of collective efficacy (Gibson, 1996; Prussia, 1994) and potency (Campion et al., 1993; Guzzo et al., 1993; Shea & Guzzo, 1987). It has been proposed that confidence creates a self-fueling spiral; confident teams continue to improve while those without confidence have compounding problems (Hackman, 1990b; Lindsley et al., 1995). This finding suggests the importance of positive feedback and feelings of success.

Effective External Actions. External actions are defined here as task-related behaviors and actions directed outward towards other parts of the organization or that use an "external" perspective (Ancona, 1987, p. 207). Past theory and research propose a positive relationship between team effectiveness and contextual supports such as adequate direction, information, and resources (Argote, 1989; Goodman, 1979; Hackman, 1986, 1987; Shea & Guzzo, 1987; Sundstrom, et al., 1990; Walton, 1977). The present findings suggest that "superior" self-managing teams don’t wait for these supports; they use creative and persistent means to reach outside of their boundaries and get what they need (Organizational Resourcefulness). To acquire new equipment and timely information about product specifications, teams in this study showed up in the right places and knocked assertively on the doors of lab assistants, engineers, and upper level managers. When members of one "superior" team felt that management was not listening to their request for a new truck to pull waste, a team member attended a kick-off meeting for a new safety program in
the plant. He stood up in the meeting and reported that in his area they were pushing buggies with 500 pounds of waste. He told the chairman of the program that three supervisors and two managers in his area were not listening. At the time of our interview, a new truck had been ordered. The "average" teams waited for resources and information to be brought to them.

The "superior" teams also referred more often to understanding the organizational culture, structure, and systems; for example, they understood how and why management made specific decisions (Organizational Awareness). The "average" teams did not display the same sense of understanding how the organization functioned. Members in "superior" teams made statements such as:

"They [their department] got the money in the budget to spend, if the don't spend it, they [upper management] will take it away from them next year...if they spend it, they'll keep getting it from year to year."

The "superior" teams also saw utility in developing reciprocal relationships with neighboring and maintenance teams (Building Relationships with Other Teams). They lent a hand when neighbors were short staffed, communicated with other teams on a regular basis, and nominated them for awards. They said:

"[Maintenance] considers themselves part of our team. That is extremely important to us in maintaining our jobs and machinery." Also, "A lot of times individuals on the other line [a neighboring team] will come over and help us doff...which means we get done a lot quicker...and a lot of times in turn you go back and show them the same courtesy."

The "average" teams more often discussed having conflicts with neighboring teams and having to deal with angry neighbors. One member of an "average" team said the following of her poor
relationship with the member of a neighboring team:

"She never says anything to me. In no way, shape, form or fashion will she speak to me."

The final competency within this cluster was Proactivity in Problem Solving. "Superior" teams more often monitored their equipment and diagnosed and solved their own technical problems. They watched mechanics repair their equipment so they could learn to repair it themselves, repaired their broken-down equipment when maintenance was taking too long to respond to them, and they proactively designed parts and tools to improve their equipment and work processes. They consistently took initiatives to solve production problems and reduce their lost production time more often than did the "average" teams. The correlational analysis reveals that this competency is highly correlated with the other variables in the external action cluster suggesting its strong relationship with boundary management. This may be because proactive problem solving often requires using and understanding the broader organizational system, or because these behaviors are enacted in the service of the larger organization and its goals. Alternatively, this competency may be related to boundary management through its ability to do what Louis and Yan call "bringing up a boundary" (1996: 28), that is, proactive problem solving may serve to strengthen a team's own boundary by increasing its independence and sense of identity.

**Effective Interpersonal Behaviors.** Interpersonal behaviors are defined here as relationship-based behaviors enacted within the team. Six competency theme codes focused on interpersonal
behaviors; three of these were supported. Members in the
"superior" teams more often displayed Interpersonal Understanding
by revealing an awareness and sensitivity towards other member’s
attitudes, feelings, or situations. For example, they discussed
understanding why uncooperative members were behaving the way
they were, and understood the causes of certain members’ stress.
They were also perceptive in reading the moods and personal
situations of their teammates and discussed reacting and
adjusting their own work patterns as a result. A member of one
"superior" team stated:

"The job is one thing, but you have to learn people’s
personalities in order to [know] how you can get along with
them; and sometimes that’s harder than the job itself."

Consistent with previous research (Klodny & Kiggundu, 1980;
McIntyre & Salas, 1995) members of the "superior" teams also
displayed more examples of Unified Effort and Cooperation. Here,
members worked together and helped one another complete their
tasks. They were confident that teammates would ease their load
when they needed help. One member of a "superior" team stated:

"I feel like I can ask any of them to help me, and I have
asked them to help me, and I’ve gotten help. And I help
them, or I try to, when ever my time allows. If I get some
free time, I’ll check to see if everything is running good
with the others."

This was the competency most frequently demonstrated by the
"superior" teams. Members of these teams said "you just expect
it." The "average" teams often discussed frustration at the lack
of cooperation and help amongst their members. One member of an
"average" team said the following about a teammate:
"He does not care about the team, he doesn't care if Jane [another team member] has to work like a dog, he's not going to help her."

Together, the combination of Interpersonal Understanding and Unified Effort and Cooperation creates the kind of heedful performance discussed by Weick and Roberts (1993). By being heedful of one another's thoughts and situations, members could respond, react, and cooperate to get their work done in the most efficient, effective, and caring manner. For example, one "superior" team discussed an incident in which team members helped a teammate with a sore ankle get her work done. They lightened her load by stepping in and taking over some of her work and even periodically told her to sit down and rest. According to Weick and Roberts (1993) heedful performance decreases errors. In this context, it also seems to reduce downtime and create a contagious climate of cooperation.

At the same time, and consistent with previous research (Barker, 1993; Jehn, 1995; Murnighan & Conlon, 1991), members in the "superior" teams were not afraid to engage in constructive conflict. They spoke-up when members stayed at break too long, were not working hard enough, were completing a procedure incorrectly, or were generally doing something considered out of line (Confronting Members who Break Norms). This is consistent with Barker's (1993) finding that team collective responsibility generates a powerful form of concertive control. Importantly, this was seen significantly less often in the "average" teams, where members spoke of trying not to hurt another's feelings or
of avoiding confrontations because "everyone has a bad day." The hypothesis that Resolving Conflicts would characterize the "superior" performers was not supported. Conflict resolution was rarely discussed. It may be that permission to engage in constructive conflict is more important to team effectiveness than the relatively infrequent clear resolution of conflicts.

Three competency theme codes involving interpersonally related behaviors were not supported. Results indicated that those supported were strongly correlated with the task-focused behaviors in the performance strategy and external action clusters. For example, Table 5 shows that Cohesion, Work Related Communicating, and Conflict Resolution are highly correlated with each other and with the other behaviors in the Interpersonal Behaviors cluster. However, they also have negative or low positive correlations with the more task-focused competencies (e.g., Attention to Feedback, Performance Orientation, Proactivity in Problem Solving). The interpersonal behaviors supported as team competencies in this study have strong positive correlations with both the other interpersonal behaviors and the more task-focused competencies. These data provide an addendum to the conclusion of Goodman and his colleagues (1987) that task-focused processes are related to team performance but affect-based processes have little to no relationship to performance. The data presented here indicate that task-related affect-based processes are related to "superior" team performance. When studies examining the relationship between interpersonal
processes and team effectiveness only consider the popular variables of cohesion and communication, they limit what we can learn about the role of interpersonal relationships in team effectiveness.

Conclusions, Limitations and Future Research Directions

This research advances our understanding of effectiveness in self-managing work teams. It provides a comprehensive model of the behaviors, norms and processes that influence team effectiveness. This model integrates, validates and extends previous theory and research on team effectiveness and takes us one step closer to a more specific, less heuristic model of team effectiveness (see Goodman et al., 1986). The model also provides practical information useful for the training and development of self-managing work teams and their leaders.

This research also has several important limitations. The research methodology utilized was selected for its ability to provide in-depth information about complex team behaviors, norms and processes. Despite the rich data obtained, several limitations in the research design make testing the present model on a larger, independent sample a necessity. First, inductive competency theme codes were developed and tested on the same sample of teams, and thus, important factors contributing to the results may have been overlooked. Also, the intensive interview method used here required the use of a small sample size (N=20). This problem, common in research with work teams (Campion, et al., 1993; McIntyre & Salas, 1995), precluded the use of powerful
statistical tests (e.g., principal components analyses) and requires that caution be used in interpreting the results.

Clearly, future research must test the validity and utility of the model. This research should also investigate the processes that give rise to the team competencies. One fruitful area for examination is the role of the internal leader(s) of the team. Another is the relationship between competencies. Certain competencies may be critical to the development of others; for example, Interpersonal Understanding may create the sense of safety that allows members to confront those who break norms without causing destructive conflict. Also Flexibility may require Team Confidence and Performance Orientation may require Team Self-Evaluation. This kind of information would be useful for team competency development.

The reliability and generalizability of the model must also be tested. Technically, the present results are generalizable to self-managing production teams who have been operating as intact units for approximately five years. However, many of the team competencies identified here are supported by research conducted with a wide variety of teams including professional level teams, (Ancona & Caldwell, 1988, 1992; Gladstein, 1984), naval tactical decision-making teams (McIntyre & Salas, 1995) and string quartets (Murnaghan & Conlon, 1991). Thus, the applicability of the results to other industries and tasks is promising.
1. For data collection purposes I needed to remain blind to the categorization of teams. Thus, these data were passed to David McClelland who drew upon his extensive experience using Job Competence Assessment Methodology to select the final sample.
REFERENCES


Denison, D. R., Hart, S. L., & Kahn, J. A. 1996. From chimneys to cross-functional teams: Developing and validating a


Hackman, J. R. 1987. The design of work teams. In J. Lorsch

Harvard University, Cambridge, MA.

Hackman, J. R. 1990b. Groups that work (and those that don’t).

Hackman, J. R., Brousseau, K. R., & Weiss, J. A. 1976. The
interaction of task design and group performance strategies
in determining group effectiveness. Organizational Behavior
and Human Performance, 15: 250-279.

Addison-Wesley.

patterns within effective and ineffective decision-making
groups. Communication Monographs, 47: 312-321.

Holahan, P. J., & Schoorman, F. D. 1993. Determinants of work
group effectiveness in a manufacturing setting. Paper
presented at the Annual Meeting of the Academy of
Management, Atlanta, GA.

Jehn, K. A. 1995. A multimethod examination of the benefits and
detriments of intragroup conflict. Administrative Science
Quarterly, 40: 256-282.


Kolodny, H. F., & Kiggundu, M. N. 1980. Towards the development
of a sociotechnical systems model in woodlands mechanical


APPENDIX

Summary of Coding Rules

1) Code descriptions of behaviors that reveal a competency theme, e.g., the following statement was coded for Work Related Communicating, "I announced over the intercom that position 15 was down."

2) Code expressions of what the team members were thinking or feeling during the event being discussed, e.g., the following statement was also coded for Work Related Communicating, "That is where the communication comes in; I mean we were communicating with each other to make things go smoothly."

3) A code can only be applied once per example, e.g., two team members may be discussing how one assisted the other in completing a task. The discussion of this specific example of Unified Effort and Cooperation may continue for numerous pages of the transcript, however, the behavior may only be coded once.

4) Expressions of thoughts or feelings that are similar but are clearly made by different individuals should be coded separately, e.g., in the following exchange, Cohesion was coded twice:

\[ \text{Member 1} \ "Our \ team \ has \ personal \ relationships \ with \ one \ another...I \ believe \ there \ is \ a \ secret \ that \ each \ one \ of \ us \ knows \ about \ one \ another." \]

\[ \text{Member 2} \ "We're \ all \ family, \ this \ is \ our \ family." \]

4) Any example or statement can be coded for more than one competency theme, e.g., The following statement which concerns solving a problem about how to clean a piece of equipment the
safe way possible was coded for both Proactivity in Problem Solving and Organizational Resourcefulness: "All we had to do was clean behind it and up inside of it and I said, 'we'll just make us a door so we can reach in there and do it rather than having to climb in [inside] it [the machinery].' So, I went and talked to maintenance and finally got one of them to listen and he decided he would do it [cut a door into the machine]."

5) Interactions that reveal a competency theme during the course of the interview are not codeable, e.g., during the interview, one member teaches another how to do a job related task.

6) Hypothetical statements are not codeable, e.g., "if that happened we would all help one another."

7) Be careful not to make inferences, e.g., the following statement should not be coded for Team Confidence because it would involve making an inference that the statement reveals confidence or pride, "Where it takes maintenance four or five hours to fix it; we did it in two hours."
TABLE 1

Means, Standard Deviations and t-tests* of the Differences in Demographics Between the "Superior" and "Average" Teams

<table>
<thead>
<tr>
<th>Demographic Question</th>
<th>&quot;Superior&quot;</th>
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<th>&quot;Average&quot;</th>
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<th>t</th>
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<td>s.d.</td>
<td>Mean</td>
<td>s.d.</td>
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* t-tests are two tailed.
Mean "superior" team = 9.5 members. Mean "average" team = 9.7 members. Numbers do not total the full sample because of missing cases.
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<tr>
<th>Competency Theme Codes</th>
<th>Examples</th>
</tr>
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<tbody>
<tr>
<td>1. Organizational Resourcefulness</td>
<td>a) Actively seek what is needed from the organization to perform well. b) Use creative, assertive, and persistent means to obtain needed resources.</td>
</tr>
<tr>
<td>2. Building Relationships w/ Other Teams</td>
<td>a) Express awareness of the importance of building relationships with other teams. b) Take actions to build good relationships with other teams.</td>
</tr>
<tr>
<td>3. Attention to Feedback</td>
<td>a) Recognize or attend to feedback from the job. b) Members give each other feedback.</td>
</tr>
<tr>
<td>4. Attention to Learning &amp; Development</td>
<td>a) Demonstrate interest in learning more about the job, machinery, org., etc. b) Experienced members coach and share knowledge.</td>
</tr>
<tr>
<td>5. Performance Orientation</td>
<td>a) Exhibit discretionary effort in order to improve or maintain good performance. b) Express concern with performance. c) Express concern with customer satisfaction d) Express concern with safety.</td>
</tr>
<tr>
<td>6. Proactivity in Problem Solving</td>
<td>a) Initiate own technical problem solving rather than depending on outside sources. b) View technical problems as a challenge. c) Monitor equipment to prevent problems.</td>
</tr>
<tr>
<td>7. Work Related Communicating</td>
<td>a) Any type of intra-team work related communicating. b) Create opportunities for communication. c) Express awareness of the importance of communication.</td>
</tr>
<tr>
<td>8. Open &amp; Honest Communicating</td>
<td>a) Openly communicate feelings and opinions. b) Confront members who break team norms. c) Express awareness of the importance of open and honest communication.</td>
</tr>
<tr>
<td>9. Unified Effort &amp; Cooperation</td>
<td>a) Work together and cooperate to get work done. b) Exhibit confidence that teammates will work to make the job easier for each other.</td>
</tr>
<tr>
<td>10. Resolving Conflicts</td>
<td>a) Resolve conflicts through discussions.</td>
</tr>
<tr>
<td>11. Managing the Supervisor/Manager</td>
<td>a) Take charge assertively with supervisors/managers. b) Open and honest communicating with supervisors/managers. c) Work to define or increase level of autonomy.</td>
</tr>
<tr>
<td>12. Team Self-Evaluation</td>
<td>a) Express understanding of their team's strengths and weaknesses. b) Members compare their team with other teams.</td>
</tr>
<tr>
<td>13. Team Confidence</td>
<td>a) Express high expectations or confidence in their team's capability to perform well. b) Express pride in their team's work. c) Express confidence in their ability to be self-managed.</td>
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<td></td>
<td>Commitment to the Company</td>
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<tr>
<td>14.</td>
<td>a) Express recognition of the role they play in the company's future. b) Express desire to improve the company. c) Make changes that improve the work situation for all teams.</td>
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<thead>
<tr>
<th></th>
<th>Organizational Awareness</th>
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<tr>
<td>15.</td>
<td>a) Express understanding of the broader organizational structure and culture and how management operates and makes decisions.</td>
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<tr>
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<th>Creating Clear Work Procedures</th>
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<td>16.</td>
<td>a) Hold clear and accepted rules and procedures for everyday and less common tasks. b) Hold clear guidelines for determining assignments and schedules.</td>
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<th></th>
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<td>17.</td>
<td>a) Exhibit flexibility around work roles, missing breaks, and sharing equipment and tools.</td>
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<td>18.</td>
<td>a) Members demonstrate sensitivity to others' feelings, interests, attitudes, or situations. b) Members demonstrate perceptiveness in understanding another's moods or feelings.</td>
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<td>a) Express pleasure in being a member of their team. b) Express affection for each other. c) Compliment each other.</td>
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* N = 20 teams.
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*a All t-tests are one-tailed.
*b Indented codes are post-hoc.

*p < .10.  *p < .05.  **p < .01.  ***p < .001.
### TABLE 5
Intercorrelations of Team Competencies (N=20)

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Md = Median intercorrelation.

* p<.05  ** p<.01
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Correlations above r=.45 are significant at p<.05.
Correlations above r=.58 are significant at p<.01.
TABLE 7
Frequency Above or Below the Mean\textsuperscript{abc} Each Team Scored on the Interpersonal, Performance, and External Clusters

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<th>Average Teams</th>
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\textsuperscript{a} Interpersonal Behavior Cluster Overall Mean = 34.6
\textsuperscript{b} Performance Strategy Cluster Overall Mean = 60.0
\textsuperscript{c} External Action Cluster Overall Mean = 21.6

Superior and Average teams across from each other in the table (e.g., Teams 1 and 11) were matched for task.
FIGURE 1
A Model of the Competencies that Support Effectiveness in Self-Managing Work Teams

Team

Effective Interpersonal Behaviors
- Interpersonal Understanding
- Unified Effort & Cooperation
- Confronting Team Members Who Break Norms

Performance Strategies
- Attention to Feedback
- Team Self-Evaluation
- Team Confidence
- Performance Orientation
- Creating Clear Work Procedures
- Flexibility

Organization

Effective External Actions
- Organizational Awareness
- Organizational Resourcefulness
- Building Relationships with Other Teams
- Proactivity in Problem Solving

*p > .05