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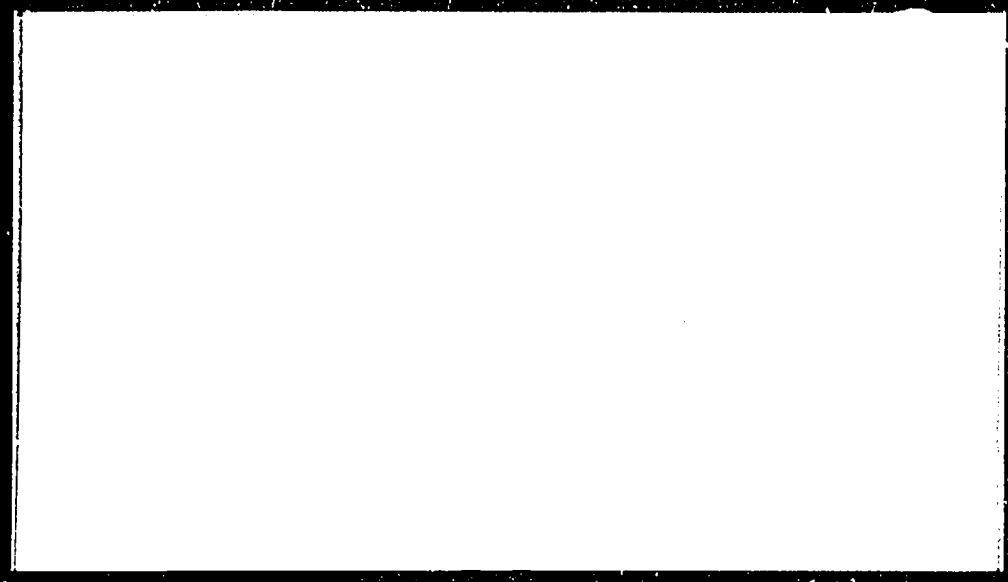
ABSTRACT

Interaction in the teaching team, team status structure, and teachers' perceptions of the team's decision-making authority were investigated as important dimensions of the team-teaching organization. Relationships between these dimensions and the teacher's sense of his own influence and autonomy are described. Each of 17 teams in six team-teaching schools was observed during six of its planning meetings. The number of times each teacher initiated task-related communication was recorded and totals were averaged to obtain individual participation scores. Teachers also responded to a questionnaire about their perceptions of their own influence and autonomy. Results indicated that interaction in team meetings is related to teachers' perceptions of their own influence and autonomy. The organization of teachers into teams that have decision-making responsibility has implications for the way teachers feel about their own impact on decisions made both within and outside of the teams. Teaching teams do sometimes have balanced, or non-hierarchically differentiated status structures. The degree of balance in team structure is associated with the teacher's perception that he is influential and autonomous. It is possible, therefore, for a task group to have a status structure in which all members participate equally and perceive themselves as having substantial influence over the decisions made. (Author/MBM)



Stanford Center for Research and Development in Teaching

SCHOOL OF EDUCATION STANFORD UNIVERSITY

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TEACHERS IN TEAMS: INTERACTION, INFLUENCE, AND AUTONOMY

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INTRODUCTORY STATEMENT

The Center is concerned with the shortcomings of teaching in American schools: the ineffectiveness of many American teachers in promoting achievement of higher cognitive objectives, in engaging their students in the tasks of school learning, and, especially, in serving the needs of students from low-income areas. Of equal concern is the inadequacy of American schools as environments fostering the teachers' own motivations, skills, and professionalism.

The Center employs the resources of the behavioral sciences--theoretical and methodological--in seeking and applying knowledge basic to achievement of its objectives. Analysis of the Center's problem area has resulted in three programs: Heuristic Teaching, Teaching Students from Low-Income Areas, and the Environment for Teaching. Drawing primarily upon psychology and sociology, and also upon economics, political science, and anthropology, the Center has formulated integrated programs of research, development, demonstration and dissemination in these three areas. In the Heuristic Teaching area, the strategy is to develop a model teacher training system integrating components that dependably enhance teaching skill. In the program on Teaching Students from Low-Income Areas, the strategy is to develop materials and procedures for engaging and motivating such students and their teachers. In the program on Environment for Teaching, the strategy is to develop patterns of school organization and teacher evaluation that will help teachers function more professionally, at higher levels of morale and commitment.

This paper, as part of the research effort of the Environment for Teaching program, explores certain features of school organization as they relate to teachers' perceptions about the authority and influence structure of the school. The type of decision-making interaction in the team-teaching organization, and teachers' perceptions of how powerful their team is in the school, both are associated with teachers' perceptions of their own influence and autonomy. Thus some of the findings in an earlier study in this program, The Impact of the Open-Space School Upon Teacher Influence and Autonomy: The Effects of an Organizational Innovation (SCRDT Technical Report 21, 1971), are further explained.

ABSTRACT

Interaction in the teaching team, team status structure, and teachers' perceptions of the team's decision-making authority were investigated as important dimensions of the team-teaching organization. Relationships between these dimensions and the teacher's sense of his own influence and autonomy are described.

The status structure of the teaching team was compared to status structures of other kinds of small groups studied by other investigators with the expectation of finding a different type of status structure in the teaching team.

Each of 17 teams in six team-teaching schools was observed during six of its planning meetings. One or both of a fixed pair of observers recorded the number of times each teacher initiated task-related communication. Totals for each teacher were averaged across the six meetings to obtain individual Participation scores.

Team variance for Participation scores was used to categorize teams as "balanced" (non-hierarchically differentiated) or "unbalanced" in status structure. Balanced teams were those with low variance in Participation scores, i.e. their members participated nearly equally. The dominance of one teacher or more on unbalanced teams was reflected in the higher variance in Participation scores.

Teachers also responded to a questionnaire about their perceptions of their own influence and autonomy. Participation during team meetings

was compared to teachers' reports of their own influence and autonomy. The sign test was applied to within-team comparisons, and chi-square was used to test comparisons in the sample as a whole.

The following results were found:

1. In the majority of unbalanced teams, teachers who participated actively during team meetings were more likely to feel autonomous and influential within the team than teachers who participated little. Among all teachers on unbalanced teams, those who participated actively were likely to feel more autonomous, more influential within the team, and more influential outside the team than teachers who participated little.

2. Teachers on balanced teams were more likely to feel autonomous and influential within the team than teachers on unbalanced teams.

3. Teachers who felt their team had power (decision-making authority) were more likely to feel autonomous and influential outside the team than teachers who felt their team had little power.

Interaction in team meetings is related to teachers' perceptions of their own influence and autonomy. Thus the organization of teachers into teams that have decision-making responsibility has implications for the way teachers feel about their own impact on decisions made both within and outside of the teams.

Teaching teams, unlike many other small groups that have been studied, do sometimes have balanced, or non-hierarchically differentiated, status structures. The balanced team structure is associated with the

teacher's perception that he is influential and autonomous. It is possible, then, for a task group such as the teaching team to have a status structure in which all members share equally in participation and perceive themselves as having substantial influence over the decisions made.

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

LIST OF TABLES

LIST OF TABLES (Continued)

TEACHERS IN TEAMS: INTERACTION, INFLUENCE, AND AUTONOMY

CHAPTER I

TEACHERS IN COLLEAGUE GROUPS: A NEW ORGANIZATION OF THE ELEMENTARY SCHOOL

Introduction

Team teaching is an educational innovation of interest to sociologists of education as well as educational practitioners. The organization of teachers into colleague groups, and the decision-making interaction which occurs in these groups, suggest problems pertinent to sociology; the way teaching teams function is important information to educators interested in assessing this new type of organization. This study describes relationships between team decision-making interaction and authority, and teachers' feelings about their own impact on the decision-making process.

It has been shown that team teachers perceive they have greater influence and autonomy than do teachers in conventional schools.[1] How does this change in school organization represented by team teaching come to be associated with teachers' feelings? In this study, the decision-making interaction in the team was investigated as a process through which school organization comes to be associated with individual feelings. The general questions investigated were:

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[1]See Brunetti (1970); Meyer, Cohen, et al., (1970); Pellegrin (1969).

1. What features of the team-teaching organization are related to teachers' perceptions about their impact on decisions? Specifically,
   A) Is participation in team decision-making interaction associated with the teacher's sense of his own influence and autonomy?
   B) Is the teacher's perception of his team's power associated with his sense of his own individual influence and autonomy?

2. Does the status structure of teaching teams tend to differ systematically from that of previously studied small groups?
   A) Are differences in the status structure of teams related to teachers' perceptions of their own influence and autonomy?

The investigation included observation of interaction in team planning meetings, and teachers' written responses to questions about their own influence and autonomy. Informal interviews were also conducted and teachers were observed in their classrooms.

Definition of Team Teaching

Team teaching is a recent innovation in school organization. The first reference to "team teaching" appeared in the Education Index in the 1957-59 edition (Shaplin, 1964). The first team teaching project began in Lexington, Mass., in 1957, as part of the School and

University Program for Research and Development at Harvard University. The Lexington project was a cooperative venture between the university and the public schools.

Recent though it is, team teaching is now widespread. In 1965, a survey of the National Education Association showed that team teaching was being utilized in 76 large school districts across the United States, with an average of ten percent of the enrollments of these districts being taught by teaching teams.[2]

According to Shaplin (1964) there is considerable diversity in both goals and methods of organization of teaching teams. Shaplin also summarizes basic similarities of team-teaching projects: "Teachers are brought into a close working relationship for the joint instruction of the same group of students" (1964). Other definitions of team teaching (Singer, 1964; Anderson, 1961; Anderson, 1964; Firester, 1964) place similar emphasis on shared responsibility and on the necessity for team teachers to work closely together as colleagues.

The formation of colleague groups of teachers in elementary schools is a dramatic change. Formally recognized colleague groups have not been significant in the organization of the traditional elementary school. In fact, formal or even informal task-related interaction among elementary school teachers has been infrequent.[3] The significance of this isolation of the elementary school teacher is

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[2]National Education Association, 1965.

[3]See Becker, 1953; Lippitt, 1965; Lortie, 1969; Sieber, 1967.

summarized by Meyer, Cohen, et al. (1970):

> The isolation of the teacher is seen as insulating teachers from the innovations arising in the profession, the organizational structure of the schools, or the community. The teacher is both protected and insulated from the stimulations and the pressures outside the classroom which might make education more responsive both to community needs and the most modern educational developments. Thus, while the demands, requirements and possibilities for education created in the external social system and the educational professions are constantly changing, the little world of the classroom is believed to go on, irrelevant and independent to the point of isolation. The isolation of the teacher is also believed to have negative effects on teachers. The teacher is seen as, not only protected, but imprisoned in the classroom, with little professional contact or opportunity for development and innovation. Partly because of its insular situation and its custodial character, elementary school teaching has been thought to be an unexciting, impotent activity, low in almost every component of social status--prestige, income, social authority, power, effectiveness, and future career prospects. Many entrants into the profession leave within a few years. Hardly any--especially among the women--advance to positions of wider social significance and effectiveness.

The actual impact on teachers of the presumed change from isolation to colleague interaction was not investigated in the early research on team teaching. Drummond (1961) and Heathers (1966) describe the limitations of early studies, noting the inconclusive nature of the results reported. Most of these pre-1969 research efforts were attempts in doctoral dissertations to evaluate team teaching along one dimension or another. Gilberts (1961) found no relationship between compatibility of individuals and ratings of team and teacher effectiveness. Teacher behavior within teams was evaluated by Wilsberg (1965), who examined teachers' reports of their own behavior, and by Cunningham (1965), who investigated the association between background and personality characteristics of teachers and effective team performance.

Authority relations within different types of teams were examined by Macbeth (1967), Kilpatrick (1965), and Gallagher (1966). None of these studies focused on actual behavior of teachers in teams.

The introduction of the observable behavior of teachers into the study of team teaching required a particular definition of team teaching, similar to those described above. The teaching team is defined here as a group of teachers who share major responsibility for the instruction of the same group of students, and who coordinate their instructional activities among themselves. This definition includes two major concepts: (1) formal recognition by the school organization of shared responsibility, and (2) implementation of shared responsibility through teacher-group coordination of individual and group instructional activities. The first concept rules out informal cooperative arrangements. The second concept rules out formally constituted groups which do not engage in cooperative instructional activities.

This definition of team teaching requires that there will be regular interaction among team members, and that the interaction will relate to instruction. Thus, the definition is designed to ensure that the major independent variable of this study, formal task-related interaction, will occur in the groups studied. Since the definition also includes formally recognized responsibility, the probability that teams studied will have decision-making authority is increased, although the actual decision-making authority of the teams was not investigated.

Participation in Team Interaction

In a study contrasting team teachers with teachers in traditionally organized schools, Meyer, Cohen, et al. (1970), and Brunetti (1970) found these contrasts:

1. Task-related colleague interaction occurred much more frequently in team teaching schools than in traditional schools.

2. Influence patterns in team teaching schools were markedly different from those in traditional schools: more team teachers than traditional-school teachers reported that individual teachers and teacher groups had influence over individual teachers, the principal, and the school as a whole in a number of decision-making areas. The influence of the principal in these schools was somewhat decreased.

3. More team teachers than traditional-school teachers reported that they were autonomous. This finding was of particular interest because the teaching team apparently makes many decisions which in conventional schools are made by the individual teacher.

4. Team teaching schools were similar to traditional schools in one respect. In both types of schools, frequent task-related interaction with colleagues was positively associated with teachers' reports of both influence and autonomy.

Similar results are reported by Pellegrin (1969) for the "multi-unit" school, a type of school with an organization almost identical to the team teaching school. Pellegrin found that teachers in these schools reported more colleague group decisions and felt more influential than teachers in traditional schools.

What are the behavioral correlates of the influence and autonomy reported by team teachers? The present study examined individual participation in team planning meetings as a behavioral correlate of individual influence and autonomy. Interaction in teaching teams resembles interaction in the small groups studied by Bales (1966) and others.[4] In those groups, participation in task-related interaction has been associated with individual power and influence. Interaction in the teaching team may also be a source of influence and autonomy for team teachers. The organization of teachers into colleague groups may come to be associated with increased individual influence and autonomy through the interaction among the teachers of a team. One factor in such interaction is individual participation in decision-making. Teachers who participate actively are likely to feel more influential and autonomous than teachers who participate little.

Specific research questions related to participation, influence and autonomy are:

1. Is participation in task-related team interaction associated with teachers' perceptions of their own
   A) influence over the team;
   B) influence in the school and with the principal;
   C) autonomy?
2. When the teacher sees himself as influential in the team, does he also perceive that he is influential in the school

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[4]See Bales, 1950; Bales, et al., 1951; Bales and Slater, 1955; Bavelas, 1968; Heinicke and Bales, 1953; Norfleet, 1948.

and with the principal?

The investigation of these research questions will be reported in Chapter III.

Team Status Structure

Writers consistently report that small groups of persons equal in such characteristics as age, sex, and occupation do, in working together, develop definite status structures.[5] The explanation offered for the emergence of such a status structure is that it results from differential influence in group decision-making. Individuals whose contributions are positively evaluated by the group participate more and have greater influence on decisions. This development of differences in participation and influence in initially equal-status groups has been observed so consistently that Bales drew the generalization that, "The price of accomplishment is differentiated status" (1966).

The idea that differentiated status is essential to group accomplishment has also been applied to the teaching team. Macbeth (1967) exemplifies this view in his plea for formally designated leadership of teaching teams:

> It is suggested that considerable emphasis be placed upon role development for a team structure. A defined and stable structure of positions eliminates the necessity of the structure being constantly under contest.

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[5] Bales, 1950; Bales, 1966; Bass, 1949; Berger and Conner, 1966; Berger, et al., 1968; Heinicke and Bales, 1953; Slater, 1966; Stephan and Mishler, 1966; Strodtbeck, 1951.

While teaching teams are similar in some respects to the groups studied by Bales and others, teams differ in important ways from groups studied previously. Teaching teams are continuing groups performing multiple and varied tasks. One study of the structure of teaching teams found that teams could be differentiated into "hierarchical" and "collegial" structures (Gallagher, 1966). The present study investigates the possibility that the more "collegial" teaching team may embody a non-differentiated or "balanced" participation and influence structure. Since influence is shared in balanced teams, teachers on such teams should feel more influential and autonomous than teachers on "unbalanced" teams.

Specific research questions related to teaching-team structure are:

3. Are there identifiable differences in status structures of teaching teams, with regard to the distribution of participation in team interaction?
4. When teams with differentiated and undifferentiated status structures are compared, what differences are found with respect to teachers' perceptions of their own influence within the team and their own autonomy?

Investigation of specific predictions related to these questions will be reported in Chapter IV.

Team Power and the Individual Teacher

Teaching teams make many instructional decisions. If some of

these were formerly made by administrators, teachers may actually have more influence and autonomy in team teaching schools. However, unless the teacher perceives that his team is powerful, he himself may not feel influential. Moreover, even if the teacher sees his team as powerful, he may still not feel influential as an individual unless he also feels he has influence over his team.

This study investigated relationships between the teacher's perception of his team's power and his feelings about his own influence and autonomy. Teachers who feel their team is powerful are more likely to feel influential and autonomous than teachers who feel their team has little power. Teachers who see their team as powerful, and who also feel they are influential within the team, are more likely than any other teachers to feel influential and autonomous.

The specific research questions related to team power are:

5. Is the individual's perception of his team's decision-making authority associated with his feelings about his own influence and autonomy?

6.1. Do teachers who perceive their team to be powerful feel influential and autonomous even when they do not think they have influence within the team?

6.2. Do teachers who do not perceive their team to be powerful, but who feel influential within the team, feel generally influential and autonomous?

6.3. If teachers perceive their team to be powerful, and also feel influential within the team, are they more likely

than other teachers to feel influential and autonomous as individuals?

Investigation of these questions is reported in Chapter V.

CHAPTER II

DESIGN OF THE STUDY

Overview

Teachers in six team teaching schools were observed during team planning meetings. Each of 17 teaching teams was observed during six different meetings. Participation rates of teachers at these meetings were compared with teachers' questionnaire reports of their own influence and autonomy. Certain questionnaire indices were also compared with other indices.

Sample

Schools

Nine open-space team-teaching schools were contacted. Seventeen teams in six of these schools agreed to participate. All teacher participation was voluntary,[1] except for one school where the principal made the decision for the teachers.

The schools were located in three different suburban school districts in predominantly white, middle class communities. Three schools were less than a year old, two were three years old, and one

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[1]The presence or effects of possible volunteer bias were not investigated. There seemed to be no obvious reason why relationships should differ in groups which did not volunteer.

was five years old.

In five of the six schools, not all teams in the school participated in the study. Two-person teams were not included. Team participation by school is shown in Table 1.

Table 1

Participating Teams, Compared with Total Number of Teams, in Each of Six Participating Schools

School Number	Number of Teams in the School	Participating Teams
1	3	3
2	4	3
3	6[a]	2
4	7[a]	5
5	5	3
6	6[a]	2

[a]Includes one or more two-person teams.

Teams

The 17 teams varied in size from three to eight members. Table 2 shows the frequency of different-sized teams.

Table 2

Number of Participating Teachers in Each of Six Schools

School #		Number of Teachers in Teams of Size					Total
		3	4	5	6	8	
1			8		6		14
2				5	12		17
3			4	5			9
4		3	12				15
5			8			8	16
6		3	4				7
TOTALS:	Teachers:	6	36	10	18	8	78
	Teams:	2	9	2	3	1	17

Fifteen teams were newly formed at the beginning of the school year in which the study took place (1969-70). In two teams, teachers had begun working together in the beginning of the 1968-69 school year.

Teachers

Seventy-eight teachers were observed. The number of teachers in each school is shown in Table 2.

There were 11 men and 67 women teachers in the study. The men were members of five teams in four schools, with 12 teams being composed entirely of women teachers. In the teams with men teachers, there were always at least two men (one team had three men teachers).

There were too few men in the sample to permit analysis by sex. Of the 11 men in the sample, seven were active participators, eight reported that they were highly autonomous, and seven reported that their team was powerful. The men were as likely to be "low" as "high" in their reports of their influence in the team and outside it.

The age range of participating teachers was from under 26 to over 50. Slightly over half the sample was in the "under 30" age group. The sample age distribution may not correspond with the age distribution of all teachers in the schools. It is possible that younger teachers more often volunteered their participation.

Teachers ranged from less than one year to 23 years of full-time, non-substituting teaching experience. One-half of the sample had been teaching for five years or less, with one-third having less than three years' experience. One-third of the teachers had taught on teams other than their present team. Two-thirds of the teachers had taught in self-contained classrooms (from one to 15 years) in non team-teaching schools.

Observation

Observers

Ten observers were trained. Training consisted of practice with a video-taped team meeting (simulated), followed by observation of an actual meeting of a team not included in the sample. Reliability was measured following the training, before actual observation began. Three observers did not meet reliability criteria. The remaining seven observers, plus the investigator, carried out the actual observation.

Two observers made records during two meetings of each team. For the other meetings of each team there was just one observer. Usually every meeting of a given team was recorded by one or both of a fixed pair of observers. Scheduling problems necessitated some substitutions. Some teams were therefore observed by three or four different observers, although no more than two observers were present at any one meeting.

Instructions to Observers

The instructions for recording appear in Appendix A.[2] In addition, observers were told how to answer anticipated questions from teachers as to the purpose of the study. Observers were told to explain that the study concerned the way teaching teams plan their activities. If necessary, observers were free to explain the scoring

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[2]Observers recorded the number of statements made to each teacher, as well as the number of remarks made by him. The former data is not used in this report.

system. Teachers who asked any other questions were to be referred to the investigator. Observers were able to refer such questions because they did not, in fact, know anything more about the study. The investigator's manner of dealing with teacher's questions was somewhat unorthodox and is discussed in Appendix B ("A Note on Observer Interference").

Observation Method

At each meeting, a sequential record was kept by the observer(s) of all task-related statements. In tabulating the total statements initiated at each meeting, statements were counted only for teachers who were present. For example, if the principal and a reading specialist were present at a meeting, their task-related statements were recorded by the observer(s), but omitted from the tabulation for that meeting.

Participation totals were thus calculated only for teacher members of the team. The pattern of teachers' participation rates did not change when a principal was present. If a principal dominated a meeting, he interacted most with those teachers who led the interaction when he was not present.

A teacher received a score each time he began to speak, and each time he shifted his attention, while speaking, to a new recipient. Detailed instructions to observers are shown in the Observers' Manual, Appendix A.

Participation Scores

For each meeting a teacher's participation score consisted of the number of times he had begun to speak about the task at hand, plus the number of times he shifted his attention to a new recipient. If a teacher was absent for more than five minutes of a meeting, his score was adjusted using the formula:

$$\text{Adjusted Participation Score} = \frac{\text{Length of Meeting (Minutes)}}{\text{No. of Minutes Present}} \times \text{Actual Number of Statements Initiated}$$

Thus, if a teacher were present for 20 minutes of a 40 minute meeting, and during that 20 minutes he made 88 task-related statements, his adjusted raw participation score for that meeting would be:

$$\text{Adjusted Raw Participation Score} = \frac{40}{20} \times 88 = 176$$

For each teacher, a participation score was obtained for each meeting attended. An average (mean) participation score (P_i) for all meetings attended was then obtained (N_m = total number of meetings attended, j = each meeting attended):

$$\text{Individual Mean Participation Score } (P_i) = \frac{\sum_{j=1}^{N_m} (P_j)}{N}$$

Team mean participation scores (P_t) were calculated, with

$$P_t = \frac{\sum_{j=1}^{6} \sum_{i=1}^{N_t} (P_{ij})}{6N_t}$$

where N_t equals the number of teachers on the team. Individual participation scores were then divided by the team mean participation score and multiplied by 10, yielding transformed participation scores ($P_{i(tr)}$):

$$P_{i(tr)} = \frac{10P_i}{P_t}$$

This transformation results in a participation score mean of 10 for each team, permitting comparison of individual scores across teams. Individual scores higher than 10 were classified as "high"; scores less than 10 were classified "low."

Absences

Of 468 possible observations (six observations for each of 78 teachers), 448 were actually completed. The 20 absences were distributed among 18 teachers (two teachers were each absent twice). Thus, the absence rate was less than one percent of total planned observations. About one-fourth of the teachers were observed fewer than six times, but no teacher was observed less than four times. Absences occurred in ten of the 17 teams: in two teams the absence rate was 13 percent of total planned observations, in two other teams the absence rate was eight percent and in six teams the absence rate was less than five percent.

Relative participation of teachers did not change during meetings when one or more teachers were absent. This may be because

teachers who had relatively high participation scores were never absent--or, more accurately, meetings which these dominant teachers could not attend were always scheduled or re-scheduled so they could be present.

Reliability

Two sources of possible error in the observations were (1) inconsistency between observers (judges) and (2) changes in individual participation rates across occasions. Taking one team at a time, each of these sources was examined in a separate two-way analysis of variance (without replication), to determine whether either source accounted for serious error in the obtained observations. Three-way analysis of variance was not used, since the data were not well adapted to such analysis, and additional information regarding second- and third-order interactions was not regarded as essential for deciding whether reliability was adequate.

Observer Reliability. In determining the extent of error due to inconsistency of observers, variability in participation scores of teachers within a team was regarded as including three possible components: differences in participation rates of different teachers (person effect); differences in frequency of recording by different observers (observer effect); variability in the pattern of participation recorded by different observers (persons X observer interaction effect).

The use of transformed scores (described on pages 18-19)

precluded examination of the observer effect, since all team means of transformed scores were equal to 10. This factor was not, however, important for the analyses carried out in the study. Two observers could conceivably record very different total scores for a team; but as long as they were similar in the proportion of the total recorded for each individual, the observers were in agreement for the purposes of this study.

Six teams were examined for observer reliability. For each team, one occasion recorded by two observers was selected.[3] The design was fully crossed: each teacher was observed by both observers in the analyses to be described in this section. Analysis of variance was used to estimate the variance arising from person and person X observer effects. The analysis of variance was based on a random effects model. Observers were regarded as representative of the universe of observers with equivalent training, and the teachers were regarded as representative of all teachers in teams which have the characteristics described in Chapters III and IV of this report.

The variance component for persons was estimated by the formula

$$\hat{\sigma}^2(P) = \frac{MS(P) - MS(PJ)}{N_J},$$

where J represents judges (observers), and P represents persons.

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[3]Occasions with two observers present occurred twice for each team. The earlier of these two occasions was selected for some teams, the later occasion for others.

$\hat{\sigma}^2(P)$ indicates the variability due to differences in teacher participation. The variance for the interaction component (persons X judges) was estimated by the formula

$$\hat{\sigma}^2(PJ) = MS(PJ).$$

$\hat{\sigma}^2(PJ)$ indicates the extent to which observers differ in their scores for different teachers. The reliability of the teacher's score was based on N_J judges by the formula[4]

$$\text{rho} = \frac{\hat{\sigma}^2(P)}{\hat{\sigma}^2(P) + \frac{\hat{\sigma}^2(PJ)}{N_J}}.$$

Reliability coefficients for the six teams examined were all 0.99 or better. It appears that error in participation scores due to observer inconsistency was quite small.

Reliability across Occasions. Each team was observed on six different occasions. Variation of individual participation from occasion to occasion might reduce the accuracy of the description. "Occasion reliability" was examined to determine whether six observations were sufficient to describe participation with reasonable accuracy.

In determining the extent of error due to changes in participation from occasion to occasion, variability in participation scores

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[4]Based on Ebel, 1951.

was regarded as including three possible components: differences in participation rates of different teachers (person effect); differences in participation of teachers from occasion to occasion (occasion effect); variability in the pattern of participation from occasion to occasion (person X occasion interaction effect).

The use of transformed scores precluded examination of the occasion effect. This factor was not, however, important for the analyses carried out in the study. Overall participation of a team might vary from meeting to meeting because of length of meetings, subjects discussed, or other factors. As long as the individual teachers' participation rates remained relatively constant across meetings, the variability due to occasions would not interfere with the accuracy of the obtained observations.

Occasion reliability was examined in only three teams, since the focus was on whether reliability was adequate, rather than on obtaining a precise estimate of the reliability coefficient. For each team, occasions recorded by the same observer were selected. Analysis of variance was used to estimate the variance arising from person and person X occasion effects. Again, the design was fully crossed: each teacher was present on each occasion in the analysis described in this section. Analysis of variance was again based on a random effects model, since the observed meetings were regarded as representative of the universe of formal meetings a team might hold. A reliability coefficient was obtained as follows:

Variance over persons was estimated by the formula

$$\hat{\sigma}^2(P) = \frac{MS(P) - MS(PO)}{N_O},$$

where O represents occasions and P represents persons. $\hat{\sigma}^2(P)$ indicates the variability due to differences in teacher participation. Variance for interaction of persons and occasions was estimated by the formula

$$\hat{\sigma}^2(PO) = MS(PO).$$

$\hat{\sigma}^2(PO)$ indicates variability due to different patterns of participation on different occasions.

Reliability over occasions was then estimated by the formula[5]

$$\text{rho} = \frac{\hat{\sigma}^2}{\hat{\sigma}^2(P) + \frac{\hat{\sigma}^2(PO)}{N_O}}$$

With N_O equal to six, reliability coefficients for the three teams are shown in Table 3. The reliability coefficient for team #53 is relatively low. This team is what will be referred to later as a "balanced" team: variability in individual participation is low in balanced teams; thus variability due to other factors would be higher, resulting in decreased reliability coefficients for other sources such as occasions. Individuals in balanced teams were not, however, differentiated on the basis of participation in this study. Error in participation

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[5]Based on Ebel, 1951.

Table 3

Occasion Reliability Coefficients (ρ) for Three Teams

Team #	N(P)	$\hat{\sigma}^2(P_{i(tr)})^{(a)}$	ρ
21	6	24.095	0.95
49	4	14.985	0.98
53	4	2.615	0.84

(a) $\hat{\sigma}^2(P_{i(tr)})$ will reappear in Chapter IV as a measure of balance.

scores of balanced-team teachers due to variability across occasions does not affect analyses reported in this study which involve teachers on balanced teams. The reliability coefficients for team #21 and team #49 indicate that error in participation rates from occasion to occasion is very small in those teams.

If only four meetings had been observed, occasion reliability would have been 0.96 and 0.92 for the two unbalanced teams, respectively. These figures indicate that absences of teachers in this study did not seriously affect the accuracy of their scores since no teacher was observed fewer than four times. In future studies using this observation method, four meetings might be sufficient to obtain reasonably accurate participation scores for unbalanced teams.

Questionnaire

Pre-Test

The nine pre-test questions shown in Appendix C were administered to 23 teachers in one team-teaching school which was not included in the actual study.[6] The pre-test school is known by reputation to place great value on participation in decision-making for all teachers in the school. This participation has been observed, and is strongly attested to by teachers and principal alike. Thus, some homogeneity of responses to the pre-test questions was expected. Although the teachers in this school are known to agree strongly about certain school norms and behaviors, the distribution of responses to most of the pre-test questions covered most of the range of possible responses. On the basis of these results and intensive interviews with individual teachers in the pre-test school, question #6 was modified, and two questions on influence were added to the final questionnaire. These modifications are shown in Table 4.

Final Questionnaire

The final questionnaire (Appendix D) was administered to each team of teachers after all observation of that team had been completed.[7] In some cases, all participating teachers in a school answered

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[6]Other questions were also pre-tested, but were either dropped from the final questionnaire, or were not analyzed for this report.

[7]The final questionnaire contained other items which were not used in the analyses reported here.

Table 4

Changes Made in the Questionnaire
Subsequent to the Pre-Test

Question Resulting from Modification of Pre-Test Question #6

There seem to be many different styles of decision-making in team teaching. Please read all of the statements below, and mark the one which best describes the way your team makes decisions:

____ 1. Our principal appoints a team leader. Our team leader has the most "say so" in our team decisions.

____ 2. Our principal appoints a team leader, and all team members have equal "say so" in making final decisions in our team.

____ 3. Though we have no official team leader, one of our members usually has more "say so" in decision-making than do the other members.

____ 4. We have no official team leader, but some of our team members have more "say so" in decision-making than do other members.

____ 5. We have no team leader, and all our team members usually have about equal "say so" in team decisions.

Questions Added to Final Questionnaire

#4

#7

How much influence do you have over your principal's decisions regarding	A Great Deal	A Considerable Amount	A Moderate Amount	Not Very Much	None
a. school rules and regulations					
b. student grading practices					
c. curriculum					
d. teaching methods					
e. student control and discipline					

How much influence does your team have over your principal's decisions regarding	A Great Deal	A Considerable Amount	A Moderate Amount	Not Very Much	None
a. school rules and regulations					
b. student grading practices					
c. curriculum					
d. teaching methods					
e. student control and discipline					

the questionnaire at the same time. The investigator was present each time the questionnaire was administered.

Of the 78 teachers, five were absent when the questionnaire was administered to their teams. Two such questionnaires were returned by mail, two were picked up at the school at a later date. One absent teacher was seriously ill and did not return to school at all. Thus, 77 of the 78 teachers completed questionnaires.

When teachers were given the questionnaire, they were told that it was very important that all questions be answered. The system devised to protect teachers' anonymity was explained.[8] In general, teachers were very cooperative. Teachers who had difficulty with a particular question were asked again to choose the "best possible" response, and to explain any reservations verbally.

Few teachers failed to complete the questionnaire. Those who did not answer particular questions explained their "non-response" to the investigator (e.g., one teacher who had only been in the school for a few months and who was not planning to return the following year was not able to respond to questions 3 and 4 of the final questionnaire).

One question in the final questionnaire had been used in the Meyer, Cohen, et al. (1970) and Brunetti (1970) studies. The distribution of responses reported here agrees substantially with the distribution obtained by those authors (see Table 5).

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[8]Each teacher received an envelope with his name on it, containing a questionnaire with his identification number on it. Questionnaires were returned to the investigator without the envelopes.

Table 5

Responses to an Autonomy Question in the Meyer, Cohen, et al. Study Compared with the Present Study

Item	Sample	Percent of Team Teachers Responding				
How much influence do you have over your own		A	B	C	D	E[a]
a. administration of school rules and regulations?	This study	30	42	18	8	1
	Meyer, Cohen, et al.	26	43	24	4	1
b. student grading practices?	This study	44	35	12	6	3
	Meyer, Cohen, et al.	39	34	17	6	1
c. curriculum planning?	This study	44	37	12	5	0
	Meyer, Cohen, et al.	43	41	13	1	0
d. teaching specific lessons or classes?	This study	72	21	4	4	0
	Meyer, Cohen, et al.	70	23	5	0	0
e. student control and discipline practices?	This study	65	30	4	0	0
	Meyer, Cohen, et al.	65	26	6	4	0

[a]Response categories were: A - A great deal; B - A considerable amount; C - A moderate amount; D - Not very much; E - None.

Indices

Four indices were constructed from teachers' responses to questionnaire items #1 through #6 (see Appendix D). The Index of Reported Influence over the Team was based on items a through e of Question #2. The Index of Reported Autonomy was based on responses to items a through e of Question #1.

The Index of Reported Influence outside the Team was based on items a through e of Questions #3 and #4. Similarly, the Index of Team Power was based on scores for Questions #5 and #6.

For each of the four indices, intercorrelations between items were substantial. Intercorrelation matrices for items of each index are shown in Tables E1 to E8 of Appendix E.

In general, comparisons were planned between persons scoring "high" and "low" on these indices. An individual's score was assigned to the "high" or "low" category according to one of three procedures described below:

1. Within-Team Comparisons

In responding to the question, "How much influence do you have over your team's decisions . . . ?" teachers presumably would use other members of their team as their comparison group. Therefore, teachers' scores on the Index of Reported Influence over the Team were assigned to "high" and "low" categories on the basis of the team mean score on this Index. Scores higher than the team mean were "high," scores below the team mean were "low." Scores exactly equal to the team mean were

assigned at random to "high" or "low" categories. There were three "ties" (among 76 cases). Randomization was achieved with a table of random numbers;[9] if the random number ended in zero through four, the score was called "low," otherwise the score was called "high."

This within-team procedure was also used for scores on the Index of Reported Autonomy.

2. Within-School Comparisons

Teachers' responses to the questions, "How much influence do you have over the decisions made in this school . . . ?" and, "How much influence do you have over your principal's decisions . . . ?" were presumably based on their comparison of themselves to other teachers in the school. Therefore, teachers' scores on the Index of Reported Influence outside the Team were assigned to "high" and "low" categories on the basis of school mean scores on this Index. Individual scores higher than the school mean were "high"; scores lower than the school mean were "low." The one "tie" score was assigned according to the procedure described above under Within-Team Comparisons.

The Within-School procedure was also used for scores on the Index of Team Power.

3. Total Sample Comparisons

For comparisons of balanced groups with unbalanced groups (Chapter IV), Index scores for all teams were assigned to "high" and

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[9] In Dixon and Massey, 1957.

"low" categories. Scores above the median for the entire sample were "high"; scores below the median were "low."

Tests of Statistical Significance

Tests of statistical significance using χ^2 were based on Siegel (1956, pp. 104-111, 249).[10] Since the hypotheses being tested predicted the direction of differences between groups, one-tailed tests were used throughout.

[10] Observed and expected frequencies were used.

CHAPTER III

PARTICIPATION AS A SOURCE OF THE TEACHER'S SENSE OF INFLUENCE AND AUTONOMY

Introduction

The team-teaching school is organized differently than the conventional school. Each teaching team is responsible for the instruction of one group of students. As a result of this mutual responsibility, team teachers must make joint decisions about many teaching tasks. This necessitates a great deal of formal task interaction, the task-related colleague interaction which is so rarely found in conventional schools.

The teacher's sense of influence has also changed in the team teaching school. According to Meyer, Cohen, et al. (1970), team teachers were much more likely to perceive that they were influential than teachers in conventional schools. Team teachers also reported more autonomy than teachers in conventional schools. This latter finding is particularly striking, as team teachers share decision-making with several other teachers--indeed, they share in decisions that teachers in conventional schools make individually. Why, then, do team teachers report more autonomy than conventional school teachers? Such findings raise the broad question of how a change in the organization of teachers, such as the one represented by the increase in

formal task interaction in the team teaching school, comes to be associated with teachers' perceptions of their own autonomy and influence. The relationship between organizational structure and teachers' perceptions of autonomy and influence may be described this way: the necessity for collective decision-making by teaching teams creates the necessity for formal task-related interaction, with variation in participation rates of individual teachers and variation in the overall patterning of participation in teams. One pattern of participation is described here as "unbalanced": one or two team members are very active participants in decision-making interaction, while other team members are considerably less active. This chapter reports associations between individual differences in participation and teachers' feelings about their own influence and autonomy.

Teams with relatively equal distribution of participation (balanced teams) are not considered in this chapter.

Influence

In teams with large variation in participation rates of individual teachers (unbalanced teams), a positive association is expected between participation and the teacher's perception of his own influence. The expectation for this association is based on reports of previous research, and on the theories of Joseph Berger (Berger and Conner, 1966; Berger, Conner and McKeown, 1968), and Robert Bales (1966). In previous research, active participators perceived themselves to be more influential than less active par-

ticipators.[1] Both Berger and Bales have suggested that differential evaluation occurs in initially-equal-status groups, and that it causes stable participation and influence rates to emerge.

Differential evaluation occurs because each individual must make decisions regarding the merit of his own and others' contributions. Such evaluation need not be overt: differential evaluation is assumed to occur as contributions are made, since the group must achieve consensus on decisions. Thus, active participation is related to perceived influence through the positive evaluations which are made of the active participator's contributions. The active participator perceives that his contributions are being positively evaluated, and thus perceives himself to have influence within the group.

In the present study, team meetings (where the formal task interaction takes place) were observed, and the teacher's participation was compared with his report of his influence within the team. In unbalanced teams, teachers who are active participators in decision-making interaction are expected to perceive themselves as influential more often than teachers who participate little.

The teacher's more general sense of influence--influence over the school and with the principal--is also under investigation. There is little opportunity in team teaching schools for participation in group decision-making outside of the individual teams. However, participation in team decision-making may be related to feelings of

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[1]See Bales, Strotdbeck, et al., 1951; Bales and Slater, 1955; Bavelas and Hastorf, 1968; Heinicke and Bales, 1953; Norfleet, 1948; Slater, 1966; Strodtbeck, 1951.

influence outside the team. Teachers who participate actively in team meetings are likely to report that they are influential, in the school and with the principal, more frequently than teachers who participate little. The association between participation in team meetings and feelings of influence outside the team will be explained further.

Participation and Influence over the Team

As indicated above, participation in small groups has shown a consistent positive relationship to the individual's perceptions of his influence in the group. If participation in the teaching team is to be regarded as a source of the teacher's sense of influence, there should be a relationship between participation rate during the team meetings and the teacher's perception of his own influence over the team.

Prediction 1: In unbalanced teams, teachers who participate actively are more likely to report that they are influential within the team than teachers who participate little.

To test Prediction 1, the teacher's participation score was compared with his score on the Index of Reported Influence over the Team. A "high" score on both measures or a "low" score on both measures would be consistent with the prediction.

Prediction 1 was tested in two ways: (1) at the group level of analysis, the prediction, or research hypothesis, was that a majority of teachers would have the same score (i.e., both high or both low) on these measures in over half the teams. The null hypothesis is that in half of the teams a majority of teachers will have

the same score on both measures. (2) At the individual level of analysis, the prediction, or research hypothesis, was that among the teachers having "high" participation scores, the proportion who report "high" influence over the team will exceed the proportion among teachers having "low" participation scores. The null hypothesis is that there is no difference between teachers with "high" and "low" participation scores in the proportion who report "high" influence over the team.

(1) At the group level of analysis, the sign test[2] was applied. Within each unbalanced team, each teacher was categorized as a "hit" if his scores for Participation and for the Index of Reported Influence over the Team were "low" for both measures, or "high" for both measures. If more than half the individuals in a team were scored as "hits," the team was scored as a "plus." If fewer than half the individuals in a team were scored as "hits," the team was scored as a "minus." Where exactly half the individuals in a team were "hits," the team was scored as a "tie." Of the eleven unbalanced teams in the study, seven received "plus" scores, three were "ties," and one received a "minus" score. With three "tied" teams omitted, N was equal to 8, with one team showing a difference in the opposite direction from that predicted. These results are statistically significant with $p < 0.02$.

(2) At the individual level of analysis, for all teachers in

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[2]In Siegel (1956), pp. 68-75.

unbalanced teams, scores on Participation were compared to scores on the Index of Reported Influence over Team. Results are shown in Table 6. χ^2 for this comparison equals 3.71, statistically significant with $p < 0.05$.

Table 6

Percent of Teachers with "High" and "Low" Scores on the Index of Reported Influence over the Team, among Teachers "High" and "Low" in Participation (Unbalanced Teams Only)

Participation	Reported Influence over Team	
	Low	High
Low (N = 25)	60%	40%
High (N = 27)	33%	67%

Results of both tests reported above were consistent with the prediction that in unbalanced teams, teachers who are active participators are more likely to report that they have influence within the team than teachers who participate little. In teaching teams, as in groups studied previously, active participators see themselves as more

influential than less active participators.

Small groups studied previously by other investigators have often been composed of individuals who did not know each other before becoming part of the group under investigation. In those groups, there was no possibility that previous patterns of influence could have determined observed participation rates. The association between participation and influence has been given a causal interpretation by investigators: active participation was thought to result in influence over group decisions. The teaching teams studied here had been working together for most of a school year (or longer). However, prior to becoming members of these teams, most teachers of a team had not known each other, in many cases even by reputation. It seems likely, then, that participation in teaching teams is a cause, or source, of teachers' feelings of influence within the team. The results presented above regarding Prediction 1, based on correlational data, cannot be interpreted as a conclusive test of a causal relationship. However, the causal explanation is supported by earlier findings and is suggested here as a reasonable hypothesis for further investigation.

Participation and Influence outside the Team

The school as a whole is important as a larger sphere of influence than the teaching team. Influence over the school means influence over a larger number of people. Moreover, school-wide decisions and the "climate" of the school may have profound effects on individual teachers. Similarly, influence over the principal is important because the elementary school principal is often thought to

have considerable authority in decisions which affect teachers. Team teachers report they have more influence over the school than teachers in conventional schools.[3] In the present study, an investigation was made of the possible sources of the team teacher's sense of influence over the school and with the principal.

The evidence for a relationship between participation and perceived influence within teaching teams might suggest a similar relationship outside the team. Such an association is precluded, however, by the near absence of decision-making interaction outside of the team. What may be associated with perceived influence outside the team is participation in team decision-making interaction. That is, teachers who participate actively in team interaction may report more influence outside the team than less active participators. The relationship is suggested here because the extensive and intensive interaction in a teaching team seems to have powerful effects on team teachers' general views of their own influence.[4] Participation as a dimension of team interaction should be associated, then, with teachers' feelings of influence outside as well as within the team.

Prediction 2: Teachers who participate actively in team decision-making interaction are more likely to perceive themselves as influential in the school and with the principal than teachers who participate little.

The two tests applied to Prediction 1 above were also carried

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[3] See Meyer, Cohen, et al., 1970, and Brunetti, 1970.

[4] Ibid.

out for Prediction 2. The sign test was applied to distributions of scores for Participation and the Index of Reported Influence outside the Team. Of the eleven unbalanced teams, seven were counted as "plus," two as "minus," and two as "ties." With the two "ties" omitted, N is equal to 9; seven "plus," two "minus." The results, while not statistically significant ($p < 0.05$), do suggest that a relationship might be established with a larger number of teams in the sample. Table 7 shows the distribution of responses to both measures, "Participation" and "Reported Influence outside the Team," for all teachers on unbalanced teams. χ^2 for Table 7 is equal to 3.714 ($p < 0.05$). Participation is related to feelings of influence outside the team. This relationship will be considered further in the following section.

Table 7

Percent of Teachers with "High" and "Low" Scores on the Index of Reported Influence outside the Team, among Teachers "High" and "Low" in Participation (Unbalanced Teams Only)

Participation	Reported Influence outside the Team	
	Low	High
Low (N = 25)	60%	40%
High (N = 27)	33%	67%

Influence over Team and Influence outside Team

Teachers who report frequent colleague interaction are more likely to report that individual teachers are influential in the school, compared with teachers who report little colleague interaction.[5] The findings presented above suggest that participation in team decision-making is one important dimension of team interaction. Participation in team interaction is associated with feelings of influence within the team and outside the team. Since there is little decision-making interaction outside of teams, the association between participation within the team and feelings of influence outside the team requires further explanation. It may be that participation comes to be associated with feelings of influence outside the team through feelings of influence within the team. A test of the association between the two types of influence is the first step in developing this idea.

Prediction 3: Teachers who report that they have greater influence than others within the team will be more likely to report that they are influential outside the team than other teachers.

The sign test and χ^2 were both used to test this prediction. The sign test was applied to the distribution of scores on the Index of Influence over the Team and the Index of Influence outside the Team. Of the eleven unbalanced teams, eight were "plus," two were "ties," and one was "minus." Omitting the two "ties" leaves nine teams;

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[5] Ibid.

eight "plus" and one "minus." These results are statistically significant with $p < 0.05$.

Table 8 shows the distribution of scores on the Index of Influence over the Team and the Index of Influence outside the Team for all teachers on unbalanced teams. χ^2 for Table 8 is equal to 7.55, statistically significant with $p < 0.01$. The results of the χ^2 test, as well as the sign test, are consistent with Prediction 3.

Table 8

Percent of Teachers with "High" and "Low" Scores on the Index of Reported Influence outside the Team among Teachers Reporting "High" and "Low" Influence over the Team (Unbalanced Teams Only)

Reported Influence on Team	Reported Influence outside the Team	
	Low	High
Low (N = 24)	67%	33%
High (N = 28)	29%	71%

The finding that teachers who report influence over the team are more likely to report influence outside the team may help to clarify the relationship in the present study between participation and influence outside the team (see Table 7). Through active participation in team decision-making, the individual may develop a sense of his own influence over his team. This sense of influence within the team is associated with a feeling of being influential outside the team as well, even though there is little opportunity for participation outside the team. It may be the sense of influence over the team associated with active participation, rather than the participation itself, which is important for this more general sense of influence outside the team. If this argument is valid, the relationship between participation and influence outside the team should be reduced for teachers who report that they are influential in the team.

Prediction 4: There will be no association between Participation and Influence outside the Team for teachers reporting "high" Influence over the Team.

The results are shown in Table 9. There is no association between Participation and Influence outside the Team for teachers who report influence over the team. These teachers are quite likely to report that they have influence outside the team, even if they were not active in participation. The results are consistent with the idea that the development of the general sense of influence, influence outside the team, is a two stage process. The process begins with active participation in team decision-making interaction which is associated

Table 9

Distribution of "High" and "Low" Scores on Participation and on the Index of Influence outside the Team, among Teachers Reporting "High" Influence over the Team (Unbalanced Teams Only)

Participation	Reported Influence outside Team	
	Low	High
Low (N = 10)	30%	70%
High (N = 18)	22%	78%

with the sense of influence over the team. These feelings of influence within the team are in turn associated with a more general sense of influence outside the team.

The dynamics of influence are not as clear for teachers who do not report influence within the team. These teachers do report more influence outside the team if they are active participators in team interaction (see Table 10). To interpret these findings, the association between participation and influence within the team must be considered again. Not all active participators report they are influential in the team (see Table 6). Some teachers may continue to participate

Table 10

Distribution of "High" and "Low" Scores on Participation and on the Index of Influence outside the Team, among Teachers Reporting "Low" Influence over the Team (Unbalanced Teams Only)

Participation	Reported Influence outside Team	
	Low	High
Low (N = 15)	80%	20%
High (N = 09)	44%	56%

actively in team interaction even if they perceive their influence attempts to be unsuccessful. Indeed, several teachers in the sample who dominated team interaction were resented rather than influential. The reasons for their continued active participation are not clear. They may be more senior teachers who expect to be leaders. They may in fact receive support outside the team, as is suggested by the findings in Table 10. In any case, such "overly-active" participators are very few in number in this study; suggestions offered to explain the five teachers in the lower right-hand cell of Table 10 are offered as

ideas to guide future work, rather than conclusions for the present.

The conclusions drawn from the findings presented here are (1) individual participation in team decision-making interaction is positively associated with teachers' reports of their feelings of influence within the team, (2) teachers' reports of their influence within the team are positively associated with their reports of influence outside the team, (3) participation is related to influence outside the team, except that (4) teachers who report they are influential in the team are likely to report they are influential outside the team, regardless of their participation rates in team interaction.

Autonomy

Team teachers report more autonomy than teachers in traditional schools (Meyer, Cohen, et al. (1970) and Brunetti (1970)). Yet teachers in conventional schools make many decisions as individuals, while in team teaching schools decisions often demand the consensus of the entire team. The necessity for making and carrying out joint decisions might be conceived of as a constraint on individual autonomy. The conditions under which team teachers do view themselves as limited in autonomy will be examined in this section.

Since the team makes many decisions which seem to affect the activities of individual teachers, those teachers who have an active voice in team decisions should feel less constraint on their individual autonomy than teachers who do not participate much in team decision-making interaction.

Prediction 5: Teachers who participate actively in team decision-making interaction are more likely to report that they are autonomous than teachers who participate little.

Both the sign test and χ^2 were used to test the association between Participation and the Index of Reported Autonomy. Results of the sign test were nine "plus" teams, one "minus," and one "tie." These results are statistically significant with $p < 0.02$.

Distribution of responses is shown in Table 11.

Table 11

Distribution of "High" and "Low" Scores on the Index of Reported Autonomy among Teachers "High" and "Low" in Participation (Unbalanced Teams Only)

Participation	Reported Autonomy	
	Low	High
Low (N = 25)	60%	40%
High (N = 27)	19%	81%

χ^2 for this table is equal to 9.43, statistically significant with $p < 0.01$. The results of both the sign test and χ^2 are consistent with Prediction 5. Active participators are more likely to report feelings of autonomy than less active participators.

These results help to explain the findings in Meyer, Cohen, et al. (1970) and Brumetti (1970) that team teachers report more autonomy than teachers in conventional schools. Those studies also reported that teachers in both types of schools who report frequent colleague interaction are likely to report more autonomy than teachers reporting little colleague interaction. One dimension of colleague interaction which may explain those findings is participation in team decision-making interaction. Not all teachers reporting frequent colleague interaction reported that they were autonomous. Active participation in team interaction may be a condition under which teachers develop a sense of their own autonomy.

Summary

Evidence was presented that an observable dimension of team interaction, individual participation in decision-making, is positively associated with

(1) individual feelings of influence in the team;

(2) individual feelings of influence outside the team;

(3) individual feelings of autonomy.

Teachers who feel influential within the team are likely to feel influential outside the team. Controlling for influence within

the team reduces the relationship between participation and influence outside the team for teachers who do feel influential within the team, but not for teachers who do not feel influential within the team.

CHAPTER IV

BALANCED PARTICIPATION: A NEW APPROACH TO THE ANALYSIS OF THE STATUS STRUCTURE OF SMALL GROUPS

Introduction

This chapter is about balanced teams: why balanced participation was expected in teaching teams; how balance was determined; and how teachers on balanced teams perceive their own influence and autonomy, compared to teachers on unbalanced teams.

Status Structure of Small Groups

One of the most consistent findings in small group research has been that most task groups whose members are initially status equals develop status structures in which some members participate much more than others and have more influence over group decisions. A group so dominated by one or more members will be referred to here as hierarchically differentiated. Not all groups in previous small group studies have formed hierarchically differentiated structures. The non-hierarchical groups have been described as engaging in continual power or status struggles, at the expense of successful task accomplishment (Bales, 1966). Bales concluded that small groups of individuals initially equal in status must become hierarchically differentiated in order to succeed at their tasks.

The necessity for hierarchical status differentiation in task groups is being questioned here. The prediction made in this study was that some teaching teams would combine an observed non-hierarchically differentiated status structure with successful accomplishment of their tasks.[1]

Certain conditions have been suggested previously as necessary and sufficient for the emergence of a hierarchically differentiated participation and influence structure[2] (Bales, 1966; Berger and Conner, 1966; Berger, et al., 1968). Two such conditions have been:

1. Groups were task oriented;

2. Tasks performed by the group were of a collective nature.

Task orientation or commitment to the task, together with the

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[1]The question may arise as to whether these teaching teams are in fact effective in their task performance. There are many reasons why no formal examination of team effectiveness was attempted in the present study. Perhaps the major problem in conducting such an investigation lies in the difficulties of specifying criteria of effectiveness adequate to the field setting. Since this problem has not been addressed in this study, we must rely on observers' impressions of effective functioning. In general, the writer's impressions, and those of the other observers, are that most teams did perform their planned tasks at team meetings, and in most cases tasks were performed efficiently. During those meetings when tension management problems were prevalent, it is of some interest that conflict of the greatest intensity occurred without exception in groups where there seemed to be a stable but well differentiated status structure. Invariably these groups were dominated by one member who was more or less resented by all the other members. These impressions raised questions about earlier conclusions of other investigators as to the association between group effectiveness and the stability of group structure in initially-equal-status groups. It may be that stability of group structure is a necessary but not sufficient condition for group effectiveness in task performance.

[2]We shall refer to the participation and influence structure as the "status" structure of the group.

collective nature of the decision-making process, has been thought to result in differential evaluations. If an individual cares about the successful accomplishment of a collective task, he will need to make decisions regarding the best way to reach the goal. Such decisions involve evaluating the suggestions and ideas of other members of the group. Since group consensus must be reached, certain individuals come to be evaluated positively, while others do not. The positively evaluated individual tends to participate more, and continues to receive a greater number of positive evaluations (a self-perpetuating process). Note that evaluations need not be overt. Differential evaluation is assumed to be occurring as groups strive for consensus.

There are two further conditions under which previous research has been conducted, which have not been previously considered as factors contributing to the formation of the participation and influence structure of the group:

3. A single task was performed by the group at any one time;
4. Groups met for a predetermined and limited number of sessions (transient groups).

The above four conditions will now be compared to corresponding conditions in teaching teams. The implications of similarities and differences for the type of group status structure expected in the teaching team will be discussed.

The corresponding conditions in the teaching team are:

1. Teaching teams are task oriented: same as in experimental groups.

2. Tasks performed by teaching teams are of a collective nature: same as in experimental groups.
3. Teaching teams perform multiple and varied tasks: unlike experimental groups.
4. Teaching teams are continuing groups; the number of sessions is not externally limited: unlike experimental groups.

As discussed earlier, in laboratory studies experimental manipulation has been directed toward ensuring that group members will be task oriented--highly committed to successful accomplishment of the task. Teaching team members do not seem to require any manipulation in order to be highly committed. Teaching itself, under any conditions, demands a certain amount of planning. The added feature, in teaching teams, of the necessity to coordinate classroom activities among a group of teachers produces even greater task orientation. Most team teachers spend many hours before and after school, and even on weekends and evenings, in cooperative planning. Observation of teams by the author and others indicates that task orientation was quite high during planning meetings. It appears that teachers who are members of teaching teams are at least as committed to effective task accomplishment as members of small groups studied under experimental conditions.

Teaching teams also handle collective tasks. Indeed, they cannot do otherwise. If a question arises as to whether some task is a legitimate one for the group, that question must be resolved by the group. Sometimes the team may decide that a particular task should

not be within the group's authority. Such tasks may then be carried out independently and autonomously by each member. However, the process of resolving such a question is itself a collective task.

To summarize, teaching teams are task-oriented and they perform collective tasks. Other writers have argued that task orientation in groups performing collective tasks results in hierarchical status differentiation in an initially-equal-status group. Why then did we expect to find teaching teams which were not hierarchically differentiated in status?

First, teaching teams must handle a wide variety of tasks, such as making joint decisions about scheduling of activities, or assigning responsibility for preparation of curriculum for use by the entire team. The significance of the variety of tasks is that it provides opportunity for different individuals to emerge as task leaders in different tasks, and thus opportunity for all individuals to receive positive evaluation.[3]

Second, teaching teams are continuing groups, committed to working together for at least a school year. This condition should interrupt the development of the status hierarchy, through modification of differential evaluation: teachers who must face each other daily over a long period of time are likely to be concerned about resentment and tension resulting from strongly differentiated evaluation. A teacher whose ideas are consistently rejected by the group

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[3]The variety of tasks may actually necessitate specialization among teachers. Pellegrin (1969) reports the emergence of specialization on teaching teams. However, there is not enough evidence to suggest that specialization must occur when there are multiple and varied tasks.

may develop feelings which result in behavior not particularly helpful to the work of the group. Moreover, there are many tasks to be accomplished. A negatively evaluated individual is not to be trusted with work regarded as important, whereas a teacher who is always positively evaluated, at the expense of others, may find himself doing the lion's share of the work! Such concerns are likely to reduce the tendency to make negative evaluations, while encouraging a wider distribution of positive evaluations.

These two conditions, continuity of the group and multiple and varied tasks, are likely to result in a fairly equal distribution of positive and negative evaluation. This does not imply that all members will receive equal evaluation at all times for all tasks. Reaching consensus on important decisions necessitates some differentiation of evaluation. However, the tendency to distribute positive and negative evaluation across different tasks so that members are approximately equal in overall evaluation is likely to result in a status structure unlike that of the experimental groups studied previously: if differential evaluation results in hierarchical status differentiation, then equal distribution of evaluation should result in a non-hierarchically differentiated, or balanced group.

This investigation attempted to document the existence of balanced teaching teams, and to describe the relationship between balance and the teacher's sense of influence and autonomy.

The Measurement of Balance

Balance is defined as equal and active participation in formal

task interaction by all members of a small group.

Balance may be regarded as a continuous variable; groups approach or depart from "perfect" balance. However, due to the small number of groups studied, balance was treated as a dichotomous variable.

The first measure of balance was team participation-score variance. Variance was used because it describes the extent to which individual scores depart from the average score, a concept which corresponds closely to the concept of balance. A team would be perfectly balanced if its variance was zero.

Variance and standard deviation of individual participation scores (described in Chapter II) were computed for each team. The eight teams with the lowest variance scores were tentatively categorized as balanced and the remaining nine as unbalanced.[4] The mean of the team standard deviations (3.54) was used as the sample standard deviation.

A second criterion of balance was then applied. Since balance is defined as the widest possible distribution of participation, a group with a single very active participator is regarded as less balanced than a group with a single very low participator. This is because a highly dominant individual participates so much that the

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[4]The variance scores of different-sized groups are not entirely comparable, since the maximum possible variance is a function of group size. However, the fact that there is more room for statistical variance in larger groups reflects the social reality of these groups: an individual who controls the interaction in a large group dominates more people than his counterpart in a smaller group.

possibility for active participation for other members is reduced, whereas very low participation leaves more room for others to participate. The second criterion of balance, then, was a limitation on the amount of the highest participation score in a team. A cut-off point for the highest possible score consistent with balanced participation was set at one sample standard deviation (3.54) above the team mean participation score. Since all team means were equal to 10 (see Chapter II), any team with at least one score higher than 13.54 was regarded as unbalanced. The cut-off point was selected because it differentiated teams with score distributions which seemed unbalanced from teams with score distributions which were regarded as balanced.

Each of the nine teams initially classified as unbalanced on the basis of participation score variance, had at least one score higher than 13.54. These nine teams remained in the unbalanced category. Among the eight teams initially classified as balanced, the two teams with the highest variance scores each had one score higher than 13.54. These two teams were reclassified as unbalanced. Thus, the application of two criteria, low team participation score variance, and individual participation scores less than 13.54, resulted in six balanced and 11 unbalanced teams.

As a further check on this classification, teachers' responses to a question on team leadership patterns were examined. Responses #2 and #5 shown in Table 12 were interpreted as reporting a balanced structure: no team members are seen as dominating. Responses #1, #3, and #4 were interpreted as reporting an unbalanced structure: one or

Table 12

Distribution of Responses to a Question
Regarding Team Leadership

Questions	Responses (N = 75)
There seem to be many different styles of decision-making in team teaching. Please read all of the statements below and mark the one which best describes the way your team makes decisions:	
1. Our principal appoints a team leader. Our team leader has the most "say so" in our team decisions.	0
2. Our principal appoints a team leader, and all team members have equal "say so" in making final decisions in our team.	25%
3. Though we have no official team leader, one of our members usually has more "say so" in decision-making than do the other members.	11%
4. We have no official team leader, but some of our team members have more "say so" in decision-making than do other members.	32%
5. We have no team leader, and all our team members usually have about equal "say so" in team decisions.	32%

more members seen as dominating.

Team by team responses to the question in Table 12 are shown in Table 13. In five of the six teams categorized as balanced, all teachers reported a balanced structure. Two of the three teachers on the sixth team reported a balanced structure. Thus, reports of 23 of the 24 teachers on balanced teams (96 percent) were in agreement with the investigator's categorization of the teams. In nine of the 11 teams categorized as unbalanced, 50 percent or more teachers in each team reported an unbalanced structure. In only two unbalanced teams did the majority of teachers report a balanced structure, while 31 of 51 teachers (61 percent) on unbalanced teams reported that their team was unbalanced.[5]

In general it appears that the analysis of team participation-score variance and team highest-participation score results in a categorization of balanced and unbalanced teams which is in substantial agreement with teachers' reports of team balance. Table 13 also shows that there is less agreement about the participation structure of the team among unbalanced-team teachers than among teachers on teams categorized as balanced. In five of the six balanced teams, all teachers on each team agreed that the team structure was balanced. In only three of the 11 unbalanced teams was agreement among teachers

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[5]When unbalanced teams are categorized (by team participation-score variance) as "very unbalanced" or "somewhat unbalanced," 59 percent and 64 percent, respectively, of the teachers report an unbalanced structure. Thus, the extent of imbalance is not a factor in teachers' reports of team structure.

Table 13

Number of Teachers Reporting Balance and Imbalance in 17 Balanced and Unbalanced Teams

	Team ID Numbers	Number of Teachers Reporting: Balance	Imbalance	Total
Balanced Teams	11	6	0	6
	12	4	0	4
	13	4	0	4
	52	2	1	3
	53	4	0	4
	71	3	0	3
	Totals:	23	1	24
Unbalanced Teams	21	2	4	6
	22	3	1	4
	23	2	3	5
	41	1	4	5
	49	0	4	4
	51	4	0	4
	56	1	3	4
	62	2	2	4
	63	1	2	3
	66	4	4	8
	79	0	4	4
	Totals:	20	31	51

similarly complete (in two teams all agreed the structure was unbalanced, in one team all agreed the structure was balanced).

It seems that some teaching teams may be regarded as balanced in participation. If a group is balanced, members will also be equal in influence over the group. No formal test of equality of influence in teams was made. Balanced teams did tend to have lower team variance on the Index of Influence over the Team than unbalanced teams, but this was partly because balanced teams also tended to have higher mean scores on that index (as the team mean score approaches the highest possible score, there is less room above the mean for individual scores to deviate from it).

The findings shown in Table 13 also suggest that teachers on balanced teams feel that influence is more equally distributed. Almost all balanced-team teachers (23 of 24) report that everyone on the team has equal "say so" in team decisions, compared with only 20 teachers (of 51) on unbalanced teams. It appears that in teams categorized as "balanced," teachers do feel more nearly equal in influence within the team than teachers in teams categorized as unbalanced.

Balance and Influence

Predicted associations between balance and influence were derived from the following analysis: In unbalanced groups, active participators see themselves as more influential than other teachers. This is presumably because high participators sense that their contributions to the task are being positively evaluated by others in the

group, and therefore feel influential. Teachers who participate little (usually the majority) are less likely to perceive that they are influential.

In balanced groups, all members participate actively and receive positive evaluation from the group. More members of balanced groups than unbalanced groups should therefore perceive that they are influential.

Prediction 6: Teachers on balanced teams are more likely to report that they have influence over the team than teachers on unbalanced teams.

Table 14 shows percent of teachers on unbalanced and balanced teams who received "high" scores on the Index of Reported Influence over the Team. Seventy-five percent of the teachers on balanced teams report high influence over the team, compared with 49 percent of the teachers on unbalanced teams. χ^2 for Table 14 equals 4.54, statistically significant with $p < 0.025$. The results are consistent with the prediction that teachers on balanced teams are more likely than teachers on unbalanced teams to feel influential within the team.

A team-by-team analysis of influence over the team offers further support for the prediction: in four of the six balanced teams, the majority of teachers reported high influence over the team, compared with only one of the 11 unbalanced teams.

The figures in Table 14 include all teachers on unbalanced teams. Participation scores of teachers on unbalanced teams cover a wider range (0.95 to 19.26) than participation scores of teachers on

Table 14

Percent of Teachers with "High" and "Low" Scores on the Index of Reported Influence over the Team, among Teachers on Balanced and Unbalanced Teams

Type of Team	Reported Influence over Team	
	Low	High
Teachers on Unbalanced Teams (N = 52)	50%	50%
Teachers on Balanced Teams (N = 24)	25%	75%

balanced teams (6.77 to 12.84). It is possible that teachers with similar participation scores are similar in reported influence over the team, whether or not the team is balanced. Such an effect would not be expected from the conception of balanced and unbalanced teams presented in this study. Rather, the expectation here would be that it is the type of team, not the range of participation scores, which predicts influence over the team. To examine this question, teachers on balanced teams were compared with teachers on unbalanced teams whose participation scores fell in the same range (6.77 to 12.84).

Teachers on unbalanced teams whose scores were less than 6.77 or higher than 12.84 were omitted from this comparison. Results are shown in Table 15. χ^2 for this comparison equals 5.50, statistically significant with $p < 0.01$. Teachers on balanced teams are more likely to report that they have influence over the team, compared with teachers on unbalanced teams, even when the comparison is limited to those unbalanced-team teachers with participation scores in the same range as balanced-team teachers.

Table 15

Responses to the Index of Reported Influence over the Team of Teachers on Unbalanced Teams with Participation Scores in the Range 6.77 to 12.84, Compared with Teachers on Balanced Teams

Type of Team	Reported Influence over the Team	
	Low	High
Teachers on Unbalanced Teams (N = 22)	59%	41%
Teachers on Balanced Teams (N = 24)	25%	75%

Balance and Autonomy

When people work together in groups there may be conflict between individual autonomy and group power. Teaching teams make decisions made by individual teachers in non-team-teaching schools. When team teachers share equally in decision-making, as in balanced teams, teachers are less likely to feel conflict between group and individual. When some teachers on a team have more influence over decisions than others, as in unbalanced teams, it is more likely that the team's control over decisions will interfere with individual autonomy. Thus, balanced-team teachers should be more likely to feel autonomous than unbalanced-team teachers.

Prediction 7: Teachers on balanced teams are more likely to report that they are autonomous than teachers on unbalanced teams.

Table 16 shows that 67 percent of the teachers on balanced teams have "high" scores on the Index of Reported Autonomy, compared with 49 percent of the teachers on unbalanced teams. The results are not statistically significant ($\chi^2 = 2.28$), but with $p < 0.10$, the prediction merits further attention. Moreover, a team-by-team analysis shows that in five of the six balanced teams, a majority of the teachers report high autonomy, compared with only five of the 11 unbalanced teams.

When participation is held constant, unbalanced-team teachers whose participation scores fall in the same range as scores in balanced

Table 16

Percent of Teachers Reporting "Low" and "High" Autonomy, among Teachers on Unbalanced and Balanced Teams

Type of Team	Reported Autonomy	
	Low	High
Teachers on Unbalanced Teams (N = 52)	51%	49%
Teachers on Balanced Teams (N = 24)	33%	67%

teams are less likely to report that they are autonomous, compared with teachers in balanced teams. Results in Table 17 are statistically significant, with $\chi^2 = 3.05$, $p < 0.05$. There is no evidence to suggest that teachers with similar participation scores will have similar feelings of autonomy regardless of the type of team. Rather, it appears that teachers on balanced teams are more likely to report that they are autonomous than teachers on unbalanced teams, even when participation scores of the two groups are similar.

Table 17

Responses to the Index of Reported Autonomy of Teachers on Unbalanced Teams with Participation Scores in the Range 6.77 to 12.84, Compared with Teachers on Balanced Teams

Type of Team	Reported Autonomy	
	Low	High
Teachers on Unbalanced Teams (N = 22)	55%	45%
Teachers on Balanced Teams (N = 24)	29%	71%

Group Size and Balance

On the average, balanced teams in the study have fewer members per team than unbalanced teams. Team size was not considered as a variable in planning the study. The results suggest, however, that smaller teams are more likely to be balanced. Average size of balanced teams was four members, of unbalanced teams, five members. There were two three-person teams in the study and both were classified as balanced. Three balanced teams were four-person groups, one was a six-person group. Unbalanced teams included six four-person, two five-person,

two six-person, and one eight-person groups. The two smallest teams in the study were both balanced, while three of the four largest teams were unbalanced.

The tendency for smaller teams to be balanced may be due in part to the measure of balance, since larger teams can have larger variance in participation scores. However, larger teams did seem to have more difficulty coordinating activities, and such difficulties are probably reflected in the association between team size and balance. Teachers on large teams sometimes commented on coordination problems due to sheer numbers of teachers and students, and there is some tendency for teams to grow smaller as the school gets older. The effects of group size on interaction in teaching teams needs careful study in future research.

Summary

Teachers on balanced teams were compared to teachers on unbalanced teams in their scores on the Index of Reported Influence over the Team and the Index of Reported Autonomy. Balanced-team teachers were more likely to report that they were influential in the team and autonomous than teachers on unbalanced teams. These associations held when the comparison was limited to teachers on balanced and unbalanced teams with similar participation scores.

CHAPTER V

TEAM POWER AS A SOURCE OF THE TEACHER'S SENSE OF INFLUENCE AND AUTONOMY

Introduction

Teaching teams make group decisions about the instruction of students, and many related matters such as grouping students, scheduling activities, and classroom management. In conventional schools such decisions are made by teachers on an individual basis, or by administrators. Studies by Meyer, Cohen, et al. (1970), Brunetti (1970), and Pellegrin (1969) show that team teachers report that teams do make important decisions, whereas teachers in non-team-teaching schools report few if any teacher-group decisions. Teaching teams, then, may be a new source of decision-making authority, or power.

In the present study, teachers were asked how influential their teams were, and their responses were compared to their reports of their own individual influence and autonomy. The team's influence over decisions made in the school and by the principal is an indicator of team power. A teacher who believes his team to be a powerful group should feel a greater sense of influence and autonomy than a teacher who does not see his group as very powerful.

Certain conditions of interaction are also associated with the teacher's sense of his own influence and autonomy (see Chapters III and

IV). This chapter will discuss independent and combined effects of team power, and influence over the team, on individual influence and autonomy.

Team Power and Individual Influence

Team teachers do perceive their teams to have influence over important decisions. Table 18 shows the average of responses to two questions about team influence. For "influence over the school," 47 percent of the teachers, on the average, report their team has at least "a considerable amount." Fifty-one percent of the teachers, on the average, report their team has at least "a considerable amount" of influence over the principal's decisions. For both questions, an average of less than 15 percent of the teachers report that their team has very little or no influence.

If an individual perceives his group to be influential, he himself will derive feelings of influence from membership in that group. If his team is perceived by a teacher to be influential in the school and with the principal, he will perceive himself to be influential in the school and with the principal.

Prediction 8: Teachers who report that their team has power are more likely to perceive themselves as influential outside the team than teachers who report that their team has little power.

Teachers' scores on the Index of Team Power were compared to scores on the Index of Influence outside the Team. Results are shown in Table 19. χ^2 for this comparison equals 4.29, statistically

Table 18

Distribution of Teachers' Responses to Two Questions
Regarding Team Influence
(N = 76)

Question	Percent Responding in each Category				
	A great deal	A considerable amount	A moderate amount	Very little	None
1. How much influence does your team have in decisions made in your school about					
a. the educational goals and objectives of the school	09	36	40	12	04
b. the school rules and regulations	14	33	36	13	04
c. student grading practices	08	29	45	12	06
d. curriculum planning	12	40	37	08	04
e. student control and discipline	12	43	33	09	03
Average	11	36	38	11	04
2. How much influence does your team have over your principal's decisions regarding					
a. school rules and regulations	08	37	45	09	01
b. student grading practices	13	34	36	14	03
c. curriculum	13	43	35	08	01
d. teaching methods	15	43	31	09	01
e. student control and discipline	14	39	36	09	01
Average	12	39	36	09	05

significant with $p < 0.025$. The results are consistent with the prediction. Teachers who feel their team is powerful are more likely to regard themselves as influential outside the team, compared to teachers who see their team as less powerful.

Table 19

Percent of Teachers Who Report "High" and "Low" Influence outside the Team, among Teachers Who Report "High" and "Low" Team Power

Reported Team Power	Reported Influence outside the Team	
	Low	High
Low (N = 38)	58%	42%
High (N = 37)	32%	68%

Team Power and Individual Autonomy

Autonomy is defined in the study as the individual's sense of control over his own decisions about his professional tasks. If

a team influences decisions made in the school, it has a kind of power which individual teachers typically do not have, even in team teaching schools. In some cases, decisions made by the principal may result in limitations on individual teacher autonomy. Teaching teams may serve to protect the individual teacher from administrative or other constraints. And teachers do report that teams have more influence "in the school" and "with the principal" than they themselves have as individuals. On the average, 36 percent of 77 teachers reported that they themselves had "a considerable amount" or more influence in the school and with the principal, while 50 percent on the average reported that their team had that much influence. More teachers reported that they had little or no influence over the school and principal (25 percent on the average) than reported that their team had little or no influence (15 percent on the average). Since teachers tend to view the team as more powerful than they are as individuals, the team may be serving to guard the individual from incursions on his autonomy. So a teacher who perceives his team as powerful should be more likely to view himself as autonomous than a teacher who believes his team to have little power.

Prediction 9: Teachers who report that their team has power are more likely to report that they are autonomous than teachers who report that their team has little power.

Teachers' scores on the Index of Reported Team Power were compared to their scores on the Index of Reported Autonomy. Results are shown in Table 20. χ^2 for this comparison equals 2.62, not statistic-

ally significant, although p is less than 0.10. Also, 64 percent of the teachers reporting "high" team power do report "high" autonomy, compared with 47 percent of the teachers reporting "low" team power. The prediction is not rejected, although the results are not regarded as a conclusive test.

Table 20

Percent of Teachers Reporting "High" and "Low" Autonomy, among Teachers Reporting "High" and "Low" Team Power

Reported Team Power	Reported Autonomy	
	Low	High
Low (N = 38)	53%	47%
High (N = 37)	34%	66%

The results shown in Tables 19 and 20 are consistent with the idea that team power is associated with teachers' perceptions of their own influence and autonomy. The relationship between these findings

and associations between interaction, sense of influence and autonomy will be presented in the next section.

Team Power and Team Interaction: Two Correlates of Individual Teacher Influence and Autonomy

Individual Influence outside the Team

As noted in Chapter III, the teacher's sense of influence outside the team is related to his participation and influence within the team. These relationships are especially interesting because there is little decision-making interaction outside the team. The sense of influence outside the team may be regarded as a general, diffuse sense of influence in the school as a whole.

Earlier in this chapter, team power was also shown to be associated with individual influence outside the team. Two aspects of the organization of the team teaching school, team power and team interaction, then, are both associated with teachers' feelings of influence outside the team. We now wish to explore the independent effects on influence outside the team of (1) team power (the decision-making authority of the team) as perceived by individual teachers, and (2) the teacher's perception of his own influence over his team, as an indicator of the teacher's feelings about team interaction. A powerful team may not promote a sense of influence outside the team for individual teachers if certain conditions of team interaction are absent or inadequate. Two such conditions of team interaction are (1) high individual participation (in unbalanced teams) and (2) balanced participation rates. Since both of these conditions are associated with

teacher influence within the team, the latter will be used in this analysis (to avoid the difficulties otherwise posed by different participation structures in balanced and unbalanced teams).

No association is expected between team power and influence outside the team unless team interaction meets the already specified condition that the teacher feels he has influence within the team.

Prediction 10: When "Influence over the Team" is held constant, there will be a positive association between Team Power and Influence outside the Team only for the high value of Influence over the Team.

Team interaction seems to be more important for the teacher's sense of influence outside the team than is team power. This is because so many of the individual teacher's day-to-day activities are affected by the relationships and decision-making processes of the team, while little opportunity exists for actual decision-making influence outside the team. Therefore, the teacher's sense of influence over the team should be positively related to influence outside the team even when team power is held constant.

Prediction 11: There will be a positive association between Influence over the Team and Influence outside the Team in all comparisons, when Team Power is held constant.

Since team power and team interaction are both important for the teacher's sense of influence outside the team, teachers who have "high" scores on both of these variables will be most likely to report

that they have influence outside the team.

Prediction 12: Teachers who report "high" Influence over the Team and "high" Team Power are more likely to report "high" Influence outside the Team than any other teachers.

Results for Predictions 10, 11, and 12 are shown in Table 21. There was no association between Team Power and Influence outside the Team, except for the high value of Influence over the Team. These results are consistent with Prediction 10. Table 21 shows that there is some association between Influence over the Team and Influence outside the Team, regardless of the value of Team Power. These results are consistent with Prediction 11. Finally, Table 21 shows that 86 percent of the teachers who report high Influence over the Team and high Team Power, report high Influence outside the Team, as compared to 50 percent and 37 percent of the teachers high on either Influence over the Team or Team Power, and 35 percent of the teachers low on both variables. These results are consistent with Prediction 12.[1]

While no tests of statistical significance were carried out for these predictions, it appears that team interaction is somewhat more important than team power for these teachers' general sense of influence in the school. However, if a teacher felt his team was powerful, and also felt he had influence within his team, he was extremely likely to feel a general sense of influence.

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[1] When Participation is substituted for "Influence over the Team," the results for unbalanced teams only are very similar to the results shown in Table 21.

Table 21

Percent of Teachers Reporting "High" Influence outside the Team and "High" Autonomy, among Teachers who Report "High" and "Low" Influence over the Team, and "High" and "Low" Team Power

Reported Team Power	Reported Influence on Team	N	Teachers "High" on Reported Influence outside Team	Teachers "High" on Reported Autonomy
Low	Low	20	35%	35%
	High	18	50%	56%
High	Low	16	37%	63%
	High	22	86%	86%

Autonomy

Team power and team interaction are both associated with the teacher's sense of his own autonomy. If the teaching team is a powerful group, it may protect the autonomy of the individual teacher. The

team may serve as a buffer between the individual teacher and outside forces such as parents, or between teacher and principal. Thus, a teacher who believes his team to have power should feel more in control of his own decisions, even if he does not feel very influential in the team.

Prediction 13: There will be a positive association between Team Power and Autonomy in all comparisons when Influence over the Team is held constant.

Teachers who do feel they have influence over the team are at least protected from too much control over them by the team, even if the team is not seen as generally powerful. Thus, teachers who feel influential within the team should feel autonomous, even if they do not see their team as powerful.

Prediction 14: There will be a positive association between Influence over the Team and Autonomy in all comparisons, when Team Power is held constant.

A teacher who believes his team is powerful, and who also feels he influences his team, has a kind of two-way protection of his own decision-making authority. That teacher should be more likely than any other to feel autonomous.

Prediction 15: Teachers who report "high" Influence over the Team and "high" Team Power are more likely to report that they are autonomous than any other teachers.

Results for Predictions 13, 14, and 15 are shown in Table 21.

There was a positive association between Team Power and Autonomy when Influence over the Team was held constant, consistent with Prediction 13. There was a positive association between Influence over the Team and Autonomy when Team Power was held constant, consistent with Prediction 14. Teachers high on Team Power and Influence over the Team were more likely than any other teachers to report high autonomy, consistent with Prediction 15.[2]

Team Power and Influence over the Team were each associated with Autonomy. The combination of Team Power and Influence over the Team resulted in the greatest likelihood that the teacher would feel autonomous.

Summary

Team Power was found to be positively associated with Influence outside the Team and with Autonomy. The association between Team Power and Autonomy was not statistically significant.

Analyses of associations between Team Power compared to Influence over the Team, and (1) Influence outside the Team, and (2) Autonomy suggested that:

1. When Influence over the Team was held constant,
   A) Team Power was positively associated with Influence outside the Team only for the high value of Influence over the Team.

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[2]When Participation is substituted for Influence over the Team, the results are similar to those shown in Table 21.

B) Team Power was positively associated with Autonomy in all comparisons.

2. When Team Power was held constant,

   A) There was a positive association between Influence over the Team and Influence outside the Team in all comparisons.

   B) There was a positive association between Influence over the Team and Autonomy in all comparisons.

3. Teachers who felt that their team was powerful who also felt influential within the team were more likely than any other teachers to feel autonomous and influential outside the team.

These associations were suggested for the sample investigated here, although no tests of statistical significance were carried out.

CHAPTER VI

SUMMARY OF RESULTS AND CONCLUSIONS

This study investigated relationships between participation in decision-making interaction in teaching teams, the decision-making authority of the teams, and teachers' perceptions of their influence and autonomy. These relationships help explain some of the ways in which the organization of the elementary school comes to affect teachers. The study also attempted to document the existence of teams with non-differentiated status structures and to show that the status structure of the teaching team is related to teachers' feelings of their own influence and autonomy.

Predictions and results are summarized below.

Prediction 1: In unbalanced teams, teachers who participate actively are more likely to report that they are influential within the team than teachers who participate little.

Results: (1) Of 11 unbalanced teams, seven showed differences in the predicted direction, one showed a difference in the opposite direction from the prediction, and three were tied. (2) Of 52 teachers on unbalanced teams, 67 percent of those with "high" Participation scores had "high" scores on the Index of Reported Influence over the Team, compared with 40 percent of those with "low" Participation scores. These results constitute statistically significant confirmations

of the prediction.

Prediction 2: Teachers who participate actively in team decision-making interaction are more likely to perceive themselves as influential in the school and with the principal than teachers who participate little.

Results: (1) Of 11 unbalanced teams, seven showed differences in the predicted direction, two showed a difference in the opposite direction from the prediction, and two were tied. (2) Of 52 teachers on unbalanced teams, 67 percent of those with "high" Participation scores had "high" scores on the Index of Reported Influence outside the Team, compared with 40 percent of those with "low" Participation scores. Results were consistent with the prediction, but were statistically significant only when analyzed individual by individual, not when analyzed team by team.

Prediction 3: Teachers who report that they have greater influence than others within the team are more likely to report that they are influential outside the team than other teachers.

Results: (1) Of 11 unbalanced teams, eight showed differences in the predicted direction, one showed a difference in the opposite direction from the prediction, and two were tied. (2) Of 52 teachers on unbalanced teams, 71 percent of those with "high" scores on the Index of Reported Influence over the Team had "high" scores on the Index of Reported Influence outside the Team, compared with 33 percent of those with "low" scores on the Index of Reported Influence over the Team. The results constitute statistically significant confirmation

of the prediction.

Prediction 4: There will be no association between participation and perceived influence outside the team for teachers reporting "high" influence over the team.

Results: Of 28 teachers on unbalanced teams who had "high" scores on the Index of Reported Influence over the Team, 78 percent of those with "high" Participation scores had "high" scores on the Index of Influence outside the Team, compared with 70 percent of those with "low" Participation scores. Results are consistent with the prediction.

Prediction 5: Teachers who participate actively in team decision-making interaction are more likely to report that they are autonomous than teachers who participate little.

Results: (1) Of 11 unbalanced teams, nine showed differences in the predicted direction, one showed a difference in the opposite direction from the prediction, and one was tied. (2) Of 52 teachers on unbalanced teams, 81 percent of those with "high" Participation scores had "high" scores on the Index of Reported Autonomy, compared with 40 percent of those with "low" Participation scores. Results constitute statistically significant confirmation of the prediction.

Prediction 6: Teachers on balanced teams are more likely to report that they have influence over the team than teachers on unbalanced teams.

Results: Of 24 teachers on balanced teams, 75 percent had

"high" scores on the Index of Reported Influence over the team, compared with 50 percent of the 52 teachers on unbalanced teams. The results constitute statistically significant confirmation of the prediction.

Prediction 7: Teachers on balanced teams are more likely to report that they are autonomous than teachers on unbalanced teams.

Results: Of 24 teachers on balanced teams, 67 percent had "high" scores on the Index of Reported Autonomy, compared with 49 percent of the 52 teachers on unbalanced teams. Results are consistent with the prediction, but are not conclusive. The predicted relationship should receive further attention.

Predictions 6 and 7 were also tested with only those teachers on unbalanced teams whose participation scores were in the same range as those of teachers on balanced teams. Results for both predictions constitute statistically significant confirmation that balance is related to perceived influence and perceived autonomy, even when the comparison is limited to teachers with similar participation scores.

Prediction 8: Teachers who report that their team has power are more likely to perceive themselves as influential outside the team than teachers who report that their team has little power.

Results: Of 76 teachers, 68 percent of those with "high" scores on the Index of Reported Team Power had "high" scores on the Index of Reported Influence outside the Team, compared with 42 percent of those with "low" scores on the Index of Reported Team Power. The

results constitute statistically significant confirmation of the prediction.

Prediction 9: Teachers who report that their team has power are more likely to report that they are autonomous than teachers who report that their team has little power.

Results: Of 76 teachers, 66 percent of those with "high" scores on the Index of Reported Autonomy had "high" scores on the Index of Reported Influence outside the Team, compared with 47 percent of those with "low" scores on the Index of Reported Autonomy. Results are consistent with the prediction, but are not a conclusive test. The predicted relationship should receive further attention.

Prediction 10: When perceived influence over the team is held constant, there will be a positive association between perceived team power and perceived influence outside the team only for the high value of perceived influence over the team.

Results: Among teachers who perceived their own influence over the team as "high," there was a positive association between perceived team power and perceived influence outside the team, as predicted. Among teachers who perceived their own influence over the team as "low," there was no association between perceived team power and perceived influence outside the team. Results were consistent with the prediction.

Prediction 11: There will be a positive association between perceived influence over the team and perceived influence outside the team in all

comparisons, when perceived team power is held constant.

Results: Among teachers who felt that their team had little power, the percentage who felt influential outside the team was 50 percent if they felt influential within the team and 35 percent if they felt they had little influence within the team. Among teachers who felt that their team did have power, the percentage who felt influential outside the team was 86 percent if they felt influential within the team and 37 percent if they felt they had little influence within the team. Results were consistent with the prediction.

Prediction 12: Teachers who feel influential within the team and who also feel that their team has power are more likely than any other teachers to feel influential outside the team.

Results:

Perceived Team Power	Perceived Influence on Team	% "High" on Perceived Influence outside Team
Low	Low	35
Low	High	50
High	Low	37
High	High	86

Results were consistent with the prediction.

Prediction 13: There will be a positive association between perceived team power and perceived autonomy in all comparisons when perceived influence over the team is held constant.

Results: Among teachers who felt they had little influence over the team, the percentage who felt autonomous was 63 percent if they felt their team was powerful, and 35 percent if they felt their team was not very powerful. Among teachers who felt they were influential within the team, the percentage who felt autonomous was 86 percent if they felt their team was powerful and 56 percent if they felt their team had little power. Results were consistent with the prediction.

Prediction 14: There will be a positive association between perceived influence over the team and perceived autonomy in all comparisons when perceived team power is held constant.

Results: Among teachers who felt their team had little power, the percentage who felt autonomous was 56 percent if they felt they had influence over the team, and 35 percent if they felt they had little influence over the team. Among teachers who felt that their team did have power, the percentage who felt autonomous was 86 percent if they felt they had influence over the team and 63 percent if they felt they had little influence over the team. Results are consistent with the prediction.

Prediction 15: Teachers who feel that their team is powerful and who also feel influential within the team are more likely than any other teachers to feel autonomous.

Results:

Perceived Team Power	Perceived Influence on Team	% "High" on Perceived Autonomy
Low	Low	35
Low	High	56
High	Low	63
High	High	86

Results are consistent with the prediction.

Conclusions

On the whole, the findings confirm the idea that observable behavior of team teachers in their decision-making interaction is related to teachers' feelings about their own influence and autonomy. The teacher's perception of the decision-making authority of his team is also related to his feelings about his own influence and autonomy.

The results of this study are also somewhat contradictory with conclusions of previous small group research, in that some teaching teams were observed to have non-differentiated status structures. These results offer support for the theoretical statements presented in Chapter IV regarding status structure in small groups.

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APPENDIX A

OBSERVERS' MANUAL

OBSERVATION FIELD MANUAL

Teacher Interaction Study

Conducted by Sheila Molnar

OBSERVATION FIELD MANUAL

Table of Contents

PURPOSE

We are interested in certain aspects of the interaction patterns in the meetings of teaching teams. Specifically, we wish to record who speaks, who is spoken to, and whether all teachers remain present for the entire meeting.

ABBREVIATIONS

S - Speaker

R - Recipient

C - Confusion

INT - Interruption

BEFORE YOU BEGIN OBSERVATION

1. Be sure you are acquainted with the teachers' first names, as well as their last names. Most teachers will refer to each other by first name during the meeting. It is essential that you know who is referred to so you can quickly score interactions.

2. Be sure that the tape recorder is set up and operable before the meeting begins. Be sure the recording microphone is placed near the teachers and is turned on.

3. Reach agreement with the other observer as to placement of observers' seats. Decisions should be based on your knowledge of where the teachers will be sitting. Try to arrange your seating with attention to the following points:

   a. Observers should be as unobtrusive as possible.

   b. Observers must not have visual access to each other's observation records. (It is very important that the two observers arrive at their observation scores independently. That is why there are two observers instead of only one.)

   c. Each observer should have the best possible view of all the teachers.

4. Reach agreement with the other observer as to identifying numbers for teachers. Either assign a number to each teacher you know will be participating in the meeting, or assign numbers to the seats which will be used.

5. RECORD THE TEACHERS' NAMES OPPOSITE THE IDENTIFICATION NUMBERS ON THE "Observation Record Identification Sheet." A copy of the Observation Record Identification Sheet appears in the back of this manual. The information which enables us to identify the teachers appears only on the Identification Sheet. Without this information, your observations are quite useless.

6. Reach agreement with the other observer as to who will be responsible for signalling "breaks."

7. Decide whether one or both observers wish to practice and write "Practice" at the top and "End Practice" at the bottom of the first column of the first page of the scoring record.

8. Fill in the "Date" and "Observer" blanks on two or more scoring sheets.

DEFINITIONS

Communication: All statements made by participants in the meeting are communication, provided these statements are directly related to the purpose of the meeting. (For description of non-related statements, see "Out of Field" remarks.)

Regular Communication: All task-related remarks.

Verbal-Wordless Communication: These are usually responses to the communication of another speaker. They include grunts, "uh-huhs," "ooohs," etc. They should be scored only if the speaker to whom they are addressed seems to have given them his attention.

SCORING SCHEDULE

No more than one hour of interaction will be recorded during each observed meeting.

Because it may be tiring to continue scoring for long uninterrupted periods of time, observers should take two "breaks" during each observed meeting. Brief rests (not more than 5 minutes each) between scoring periods are important, since tired observers are less likely to be accurate.

The following schedule is recommended:

1. Score first 20 minutes;

2. Break;

3. Score second 20 minutes;

4. Break;

5. Score third 20 minutes.

Be sure that both observers stop recording and begin recording at the same time. Each observer must record "BREAK" on his scoring record sheet, following the last score recorded before the break.

Establish in advance which observer will be responsible for signalling breaks. If teachers know in advance that you will be doing this, your signals will be less obtrusive. Don't hesitate to explain these kind of observation problems to the teachers. You will find them generally very willing to help if they can.

It is very important that both observers stop scoring and begin scoring at the same time. Please try to coordinate this as closely as possible.

Try not to leave the meeting during breaks.

WHAT TO SCORE

Always score the following:

1. Communication from a speaker (who is speaking).

2. The recipient of communication.

A. The Recipient

It is sometimes difficult to determine which teacher a speaker is addressing. You should always make the strongest attempt possible to decide who the recipient is. If all you can do is to guess, then make the best possible guess. Some guidelines for deciding on the recipient follow.

1. The speaker is looking at a particular teacher. (The looked-at teacher is the recipient.) This is the most effective guideline.

2. The speaker is not looking at any teacher (e.g., he is looking at something on the table), but he has addressed his last few remarks to one teacher in particular, and seems to be continuing on with the same subject.

3. If the speaker has looked at two or more teachers while making a single communication, score each looked-at teacher as a new recipient.

4. If the speaker is not looking at any other teacher, but one teacher has just asked him a question, the "questioner" would probably be scored as recipient.

5. If a teacher has just addressed communication to the speaker, and the speaker is not looking at any teacher, the previous "communicator" would probably be scored as the recipient.

6. Sometimes a teacher will look at all of the other teachers while speaking, and will not look at any one teacher more than the others. If you are certain that this has occurred, then this communication (or series of communications) will be scored for the entire group being the recipient. The recipient in this case is identified as "0" (zero).

Note: Try not to overuse the group as recipient. It is very important that every effort be made to determine which teacher was the actual recipient. Only use "0" when the speaker was clearly addressing the entire group. Do not use "0" as a kind of default category--e.g., an observer who isn't sure just who a speaker was addressing might be tempted to record "0." Please resist this temptation.

B. Absences

If a teacher leaves the meeting, note his identification number and the time he leaves on your scoring sheet. When he returns, note his number and the time he returned. For example, Mr. Brown, Teacher #3, leaves the meeting at 3:04 and returns at 3:12. Record the following:

#3 out 3:04

(observations)

#3 in 3:12

After the observation session, note such absences on the Observation Record Identification Sheet. (Fill in the blanks for "Teachers Absent.")

WHAT NOT TO SCORE

The following descriptions of non-scorable remarks are included to help you distinguish them clearly.

1. Out-of-Field Remarks: Any remarks which are not directly related to the purpose of the meeting. In this manual relevant remarks are those which relate to the task at hand. This task will usually be the planning and scheduling of instruction. Peripheral remarks such as "I have a headache" are out-of-field. They are out-of-field not because they may not affect the course of the meeting, but because they are not directly relevant to the planning of instruction.

Sometimes the entire meeting may go "out-of-field." In that case, recording stops, and "INT" is inserted on the scoring sheet. For example, some students come in with an announcement (or more likely in search of somebody's sweater). The ensuing discussion between teachers and students would not be considered part of the meeting.

Another example of an "out-of-field" interruption is an extended discussion by the teachers of something other than the topic of the meeting. Discussion of someone's personal affairs, anecdotes about amusing incidents (even with students), remarks about non-participants, may all be "out-of-field" remarks.

2. Confusion: If two or more teachers are talking at once, and it seems as if no one person has the attention of the whole group, no interaction would be scored until one speaker seems to have "gained the floor." A "C" for "confusion" would be recorded on the observation sheet.

3. Insertions: While one teacher is talking, another teacher may make a brief comment which is (at least overtly) ignored by everyone else, including the speaker. Such "insertions" are not scored.

FIELD SCORING PRACTICE

Observers may find some practice scoring helpful at the beginning of a meeting. This is especially true for new observers and for observers new to a teaching team.

At the beginning of a meeting, you may spend a few (about 5) minutes scoring for practice. This practice may help you become familiar with the identification numbers of teachers and with their voices.

Practice scoring should be recorded in the first column of the first page of the scoring record. Before the meeting begins, write "Practice" at the top and "End Practice" at the bottom of that column.

One observer must signal the end of the practice period, so both observers can begin actual scoring at the same time.

Even if only one observer practices, both observers must begin to record actual scoring in the 2nd column of the first scoring sheet.

Remember, both observers must always begin actual scoring at the same time.

HOW TO SCORE

Please turn to the "Observation Record" at the back of this manual.

Note that there are four sets of columns, with three columns in each set. In each set, the columns are headed "S," "R," and "E." We shall be concerned only with the "S" and "R" columns. You may ignore the columns headed "E."

For each communication which you record, the identification number of the speaker is recorded in the "S" column, and the identification number of the recipient is recorded in the "R" column.

The "S" and "R" columns should each contain a series of single digit numbers.

1. Speakers

Each time a teacher begins speaking, listen carefully to what he says to be sure it is communication. If it is, record his identification number in the "S" column.

Once you have recorded the speaker, watch the speaker to determine who the recipient is. Record the recipient as soon as you are sure.

Do not record any further score for this speaker unless he communicates to a new recipient. A new score is recorded each time the recipient changes.

A new score is recorded each time the speaker changes.

2. An Illustration:

The following four teachers are present at the meeting you are observing: Angela Green (#1), George Doakes (#2), Carol Clark (#3), Phyllis Emerson (#4). The interaction goes:

Green (looking at Doakes): I certainly liked the way you did that Science lesson yesterday. Are you planning another one for next week?

(Scoring: 1 2.)

Doakes (looking at papers): Yes, I think I'll try using microscopes this time.

(Scoring: 2 1.)

Emerson (looking at Doakes): Oh, but the new microscopes won't be coming until week after next. (Looks at Green) Don't you think it would be nice to be able to use the new ones?

(Scoring: 4 2 ; 4 1 .)

Green (looking at desk): Maybe we could wait. What do you think, George?

(Scoring: 1 4 ; 1 2 .)

POST SESSION REMINDERS

1. Number the pages of the Observation Record.

2. Be CERTAIN you have written the name of each teacher who participated opposite an identification number of the Observation Record Identification Sheet.

3. Compare your Observation Record Identification Sheet with that of the other observer. Check to see that the two sheets contain the same information (except for the observer's name) and that all information is accurate.

4. Record the appropriate information on the recording-tape box.

5. Record ali absences.

OBSERVATION RECORD

Identification Sheet

Date:_____ Time Observations Began:_____

School:_____

Team:_____

Teacher No. 1:_____

Teacher No. 2:_____

Teacher No. 3:_____

Teacher No. 4:_____

Teacher No. 5:_____

Teacher No. 6:_____

ABSENCES:

Name_____ ID No._____ Time_____

Name_____ ID No._____ Time_____

Name_____ ID No._____ Time_____

Name_____ ID No._____ Time_____

Observation Ended (Time):_____

Observer:_____

Observation Hours:_____

OBSERVATION RECORD

Page No. ____________ **Scoring Sheet**

Date ____________

Observer ____________

S	R	E		S	R	E		S	R	E		S	R	E

OBSERVATIONAL DATA PROCESSING FORMS

1. Tally Sheet
2. Summary Sheet

OBSERVATION TALLY SHEET: COMMUNICATION

Code

Recipient

Speaker	#1	#2	#3	#4	#5	#6	#7	#0
#1								
#2								
#3								
#4								
#5								
#6								
#7								

OBSERVATION DATA SUMMARY SHEET

Date: _____

Length of Session: _____

Code: [ ]

Teacher Identification Number	Initiated			Received			
	Total	Rank	%	Total	Rank	%	Absences
1							
2							
3							
4							
5							
6							
7							
8							
01							
02							
03							

APPENDIX B

A NOTE ON OBSERVER INTERFERENCE

A NOTE ON OBSERVER INTERFERENCE

Observer interference refers here to possible changes in the phenomenon under investigation produced by the observation process itself, in particular by the presence and/or behavior of the observer. Keeping such observer interference at a minimum is the goal of any research designed to capture a phenomenon as it actually is, or would be in its "pure" state without observers present. When the observed phenomenon and the observation process both involve people, minimizing interference from the observation process is not as easy as it may sound.

Some investigators have attempted to reduce observer interference by keeping subjects uninformed or misinformed about the actual questions being investigated. There may be situations where subjects' ignorance of the purpose of the investigation is necessary. However, no attempts have been made to determine just which situations do require this. The typical instruction to observers includes taboos on observer-subject interaction. Such taboos assume that subjects will be less aware of observers if observers remain "detached." However, it is likely that subjects will be highly aware of individuals present whose behavior is rather different from their own. The researcher may assume that the observer's refusal to interact reduces his visibility, while the subjects find such detachment most unusual and visible.

The observers in this study were perhaps especially visible since the observation took place in the field, where it was clear who "belonged" and who didn't. What observer interference means in such

a setting may become clearer from a description of subject behaviors which this investigator regarded as indicative of the problem: teachers' glances being directed frequently toward the observer, the observation record or the tape recorder, followed by an abrupt change of subject; questions or remarks directed to the observer during the meeting; frequent questions about the study during or outside of observed meetings. All of these behaviors signalled to this investigator that teachers' concern about being observed might well be affecting the behavior being studied. It was decided early in the data-collection process to forego some aspects of observer "detachment" in order to learn something about observer interference, while keeping the latter at an acceptable minimum. Interaction with teachers was entered into when the teacher behaviors described above became prevalent. Teachers' questions arising during meetings were answered, and occasionally the investigator would initiate a remark. An example follows:

The subject under discussion at the observed meeting was the team's feeling that it was not accomplishing certain instructional tasks as well as the teachers had hoped. Glances toward the investigator and the observation sheets were becoming obvious. The investigator remarked, "Oh, don't worry about this. I won't let the principal see it, only the superintendent of schools." There was general laughter, followed by a question from a teacher: "What <u>are</u> you going to do with this stuff, anyway?" The investigator's response was, "Use it to learn something about interaction during team meetings. I'd be

glad to explain more, but I shouldn't be interrupting your meeting." Following this, the teachers' discussion returned to the original topic. No further reference to the investigator or the observation sheets was apparent, in the verbal or non-verbal behavior of the teachers, during the remainder of that meeting.

Did the investigator interfere with the observed behavior? In the immediate sense, yes. The "natural" progress of the meeting was interrupted for a minute or two. However, it seems that progress had already been interfered with by the very presence of the investigator. By attending to the symptoms of underlying interference, the investigator may have protected the "naturalness" of the remaining portion of the meeting. Note also that the brief response made to the teacher's question did not reveal very much about the investigation. Further explanation was offered, honestly, but few teachers ever inquired further. This suggests that the investigator's motives rather than the research purposes were receiving teachers' attention. In entering into interaction, the investigator apparently was able to reduce concern about those motives. The situation described above occurred with minor variation in most of the teams observed.

If the presence of an observer interferes with the behavior of people being observed, then it is legitimate for the observer to respond to the symptoms of that interference by interacting with the subjects. Such interaction should of course be limited to attempts to reduce the interference. Perhaps a new technology of observer behavior is needed to train observers to recognize their own inter-

ference, however inadvertent, and to respond appropriately. Observer "detachment" cannot be equated with observer "non-interference" in all situations.

The establishment of trust in the observer's motives seems to have produced another benefit: a number of teachers approached the investigator privately to offer information about the way non-observed meetings differed from observed meetings. In this study such comments came exclusively from teachers who participated little during the observed meetings and who described even greater inequities in participation during non-observed meetings. The teams so described by these teachers turned out to be among the most unbalanced in the sample. If there was error in observed participation scores in these teams, it would not have affected the relationships being tested, since the observations showed clear distinctions between "high" and "low" participation in these teams. However, subjects' impressions of changes in their behavior due to observation could in many cases be a valuable source of information about observer interference. Instead of assuming that observers' refusal to interact with subjects results in non-interference, perhaps investigators should include some method of measuring observer interference in their research designs. It does not seem reasonable to assume that a technique for observing, however standardized, will automatically result in the absence or minimization of observer interference, without any test of the result.

Observer interference is an important subject for systematic investigation.

APPENDIX C

PRE-TEST QUESTIONNAIRE

and

RESULTS OF PRE-TEST

Teacher Interaction Study

Section 1

These questions are about influence patterns in your school.

Each question has five different parts. Please check the appropriate response category for each part of each question.

1. How much influence do you have over your own

	1 a great deal	2 a considerable amount	3 a moderate amount	4 not very much	5 none
A) administration of school rules and regulations?	7	13	2	1	0 (a)
B) student grading practices?	11	5	7	0	0
C) curriculum planning?	15	6	2	0	0
D) teaching specific lessons or classes?	16	6	1	0	0
E) student control and discipline practices?	11	10	2	0	0

2. How much influence does your team have over your own

	1 a great deal	2 a considerable amount	3 a moderate amount	4 not very much	5 none
A) administration of school rules and regulations?	9	9	4	1	0
B) student grading practices?	9	9	4	1	0
C) curriculum planning?	14	7	1	1	0
D) teaching specific lessons or classes?	10	7	4	2	0
E) student control and discipline practices?	11	10	2	0	0

(a) Numbers on the lines show the number of responses in the indicated response category (N = 23).

3. How much influence do you have over your team's decisions about

	1 a great deal	2 a considerable amount	3 a moderate amount	4 not very much	5 none
A) administration of school rules and regulations?	0	13	7	0	1
B) student grading practices?	0	14	6	1	0
C) curriculum planning?	1	15	5	0	0
D) teaching specific lessons or classes?	1	13	5	2	0
E) student control and discipline practices?	1	14	5	1	0

4. How much influence do you have in decisions made in your school about

	1 a great deal	2 a considerable amount	3 a moderate amount	4 not very much	5 none
A) determining the educational goals and objectives of the school?	1	12	7	2	1
B) establishing school rules and regulations?	1	14	6	2	0
C) student grading practices?	0	9	9	4	1
D) general curriculum planning?	1	9	8	3	2
E) student control and discipline practices?	1	12	8	2	0

5. How much influence does your team have over decisions made in your school about

	1 a great deal	2 a considerable amount	3 a moderate amount	4 not very much	5 none
A) determining the educational goals and objectives of the school?	1	15	6	1	0
B) establishing school rules and regulations?	2	14	6	1	0
C) student grading practices?	1	11	7	4	0
D) general curriculum planning?	1	11	8	3	0
E) student control and discipline practices?	1	14	5	3	0

6. Different teams are sometimes organized differently, especially in regard to leadership in decision making. Please choose the statement below (A, B, or C) which best describes your team's leadership, and mark the box next to the letter corresponding to that statement. Then please read the two statements (a and b) which follow, and mark the box corresponding to the one which further describes your team's leadership.

Please remember to mark only 2 of the 9 boxes you will find below:

☐ A) We have an "official" team leader, appointed by the principal,

1 (a) ☐ a) and our official leader most often provides leadership in the decisions we make.

☐ b) and our official leader, as well as others on the team, all share in providing leadership in the decisions we make.

☐ B) We have no "official" team leader, but our team has agreed upon one person we all recognize as our "unofficial" team leader.

☐ a) Our unofficial team leader most often provides leadership in the decisions we make.

1 ☐ b) Our unofficial team leader, as well as others on the team, all share in providing leadership in decisions we make.

☐ C) Our team has no "official" leader, nor an "unofficial" one,

2 ☐ a) but one of our team members does seem to act as leader quite often when we make decisions.

18 ☐ b) and leadership seems to be shared pretty equally amongst all of our team members when we make decisions.

(a) Numbers at the side give number of responses to the adjacent response category.

Section 2

This last section concerns your background and experience in team teaching and in teaching in general.

7. Age: 2 25 or less 5 26-30 4 31-35 5 36-40
5 41-50 2 over 50[(a)]

8. Sex: 3 M 20 F

9. Please answer each part of the following question. There are four parts (A, B, C, D).

Years of teaching experience (including 1969-70):

A) with present team: 9 one 4 two 5 three 0 four
3 five 2 more than five[(a)]

B) years with other teams:
8 none 1 one 7 two 1 three 1 four
2 five 3 more than five

C) years in self-contained classroom:
3 none 4 one 1 two 2 three 0 four
4 five 4 six to ten 3 more than ten

D) total years teaching experience (including 1969-70):
0 one 3 two 1 three 0 four 2 five
10 six to ten 7 more than ten

(a) Numbers on the line show the number of responses in the indicated category.

Your cooperation in filling out this questionnaire is very much appreciated.

We have provided this last page for any written comments you would like to make. Please feel free to detach this page from the rest of the questionnaire and hand your comments in anonymously.

Of course we would also welcome your direct (verbal) comments and criticisms about the questionnaire, or any other aspect of the research we have been doing. It would be most helpful to us if you did express any negative reactions you have had to this research project, so we can learn to improve our research methods in the future. In addition, we really do appreciate all the help you have given us and would like the opportunity to talk with you further, if you have questions or comments.

APPENDIX D

FINAL QUESTIONNAIRE

MARGINALS (ITEM TOTALS)

Section 1

Please use this code in responding to the questions in this section:

A. A great deal

B. A considerable amount

C. A moderate amount

D. Not very much

E. None

Each of the questions below has five parts. On each line, please place a check under the letter which corresponds to the above statement which best describes your opinion.

	A	B	C	D	E
1. How much influence do you have over your own					
a. administration of school rules and regulations	30[a]	42	18	08	01
b. student grading practices	44	35	12	06	03
c. curriculum planning	44	37	12	05	--
d. teaching specific lessons or classes	71	21	04	04	--
e. student control and discipline	65	30	04	--	--
2. How much influence do you have over your team's decisions about					
a. administration of school rules and regulations	09	37	40	12	01
b. student grading practices	13	35	35	14	03
c. curriculum planning	15	40	31	12	01
d. teaching specific lessons or classes	23	32	26	14	04
e. student control and discipline	19	35	32	10	03

[a] Figures represent percent of responses in the designated category.

Code:

A. A great deal

B. A considerable amount

C. A moderate amount

D. Not very much

E. None

	A	B	C	D	E
3. How much influence do you have in decisions made in your school about					
a. the educational goals and objectives of the school	07	23	37	27	05
b. school rules and regulations	03	27	41	23	04
c. student grading practices	09	26	39	17	08
d. curriculum planning	08	39	28	19	04
e. student control and discipline	05	35	41	10	06
4. How much influence do you have over your principal's decisions regarding					
a. school rules and regulations	03	17	47	21	08
b. student grading practices	05	28	36	19	06
c. curriculum	05	31	39	17	04
d. teaching methods	10	28	42	10	04
e. student control and discipline	09	27	44	12	04

Code:

A. A great deal

B. A considerable amount

C. A moderate amount

D. Not very much

E. None

	A	B	C	D	E
5. How much influence does your team have in decisions made in your school about					
a. the educational goals and objectives of the school	09	35	40	12	04
b. school rules and regulations	14	32	36	13	04
c. student grading practices	08	28	45	12	06
d. curriculum planning	12	39	37	08	04
e. student control and discipline	12	42	33	09	03
6. How much influence does your team have over your principal's decisions regarding					
a. school rules and regulations	08	36	45	09	01
b. student grading practices	13	33	36	14	03
c. curriculum	13	42	35	08	01
d. teaching methods	15	42	31	09	01
e. student control and discipline	14	39	36	09	01

Section 2

7. There seem to be many different styles of decision-making in team teaching. Please read all of the statements below, and mark the one which best describes the way your team makes decisions:

__(a) 1. Our principal appoints a team leader. Our team leader has the most "say so" in our team decisions.

24 2. Our principal appoints a team leader, and all team members have equal "say so" in making final decisions in our team.

10 3. Though we have no official team leader, one of our members usually has more "say so" in decision-making than do the other members.

31 4. We have no official team leader, but some of our team members have more "say so" in decision-making than do other members.

31 5. We have no team leader, and all our team members usually have about equal "say so" in team decisions.

Section 3

8. Age: 27(a) 25 or less 23 26-30 15 31-35 17 36-40

08 41-50 05 over 50

9. Sex: 14 M 86 F

(a)Figures represent percent of responses in the designated category.

10. How many years of <u>full-time</u> (non-substitute) teaching experience do you have?

A) With your present team?	
a) Present school year only	88 (a)
b) Present and previous school year	12
B) With other teams (not including your present team?	
a) One year	36
b) Two years	28
c) Three years	24
d) Four years	08
e) Five years	04
C) In self-contained classrooms?	
a) Two years or less	29 (b)
b) Three to six years	38
c) Seven to 23 years	33
D) Total (A+B+C)	
a) Less than three years	35 (b)
b) Four to seven years	34
c) Eight to 24 years	31

(a)Figures represent percent of responses in the designated category.

(b)These categories represent summaries of the actual numbers reported by teachers.

APPENDIX E

INTERCORRELATIONS OF INDEX ITEMS

TABLE E1

Intercorrelations[a] between Items of a Question Regarding Individual Influence over the Team[b]

How much influence do you have over your team's decisions about	student grading practices	curriculum planning	teaching specific lessons or classes	student control and discipline
a. administration of school rules	+0.54	+0.47	+0.42	+0.63
b. student grading practices		+0.57	+0.70	+0.59
c. curriculum planning			+0.61	+0.61
d. teaching specific lessons or classes				+0.61

(a) Using Pearson r.

(b) All correlations statistically significant with $p < 0.01$.

TABLE E2

Intercorrelations[a] between Items of a Question Regarding Individual Influence in the School[b]

How much influence do you have in decisions made in your school about	the educational goals and objectives of the school	school rules and regulations	student grading practices	student control and discipline
a. the educational goals and objectives of the school	+0.68	+0.47	+0.63	+0.60
b. school rules and regulations		+0.48	+0.49	+0.63
c. student grading practices			+0.52	+0.51
d. curriculum planning				+0.72

(a) Using Pearson r.

(b) All correlations statistically significant with $p < 0.01$.

TABLE E3

Intercorrelations[a] between Items of a Question Regarding Individual Influence with the Principal[b]

How much influence do you have over your principal's decisions regarding	student grading practices	curriculum	teaching methods	student control and discipline
a. school rules and regulations	+0.65	+0.62	+0.53	+0.58
b. student grading practices		+0.61	+0.65	+0.68
c. curriculum			+0.82	+0.68
d. teaching methods				+0.76

(a) Using Pearson r.

(b) All correlations statistically significant with $p < 0.01$.

TABLE E4

Intercorrelations[a] between Items of the Index of Individual Influence in the School and the Index of Individual Influence with the Principal

How much influence do you have in decisions made in your school about	How much influence do you have over your principal's decisions regarding: school rules and regulations	student grading practices	curriculum	teaching methods	student control and discipline
a. the educational goals and objectives of the school	+0,51*	+0,42*	+0,38*	+0.36*	+0,51*
b. school rules and regulations	+0.59*	+0.37*	+0.31*	+0.25*	+0.25*
c. student grading practices	+0.20*	+0.42*	+0.12	+0.14	+0.14
d. curriculum planning	+0.38*	+0.30*	+0.35*	+0.39*	+0.42*
e. student control and discipline	+0.51*	+0.36*	+0.30*	+0.34*	+0.38*

(a) Using Pearson r.

* Statistically significant with $p < 0.01$.

TABLE E5

Intercorrelations[a] between Items of a Question Regarding Autonomy[b]

How much influence do you have over your own	student grading practices	curriculum planning	teaching specific lessons or classes	student control and discipline
a. administration of school rules	+0.46	+0.25	+0.34	+0.31
b. student grading practices		+0.42	+0.41	+0.49
c. curriculum planning			+0.41	+0.45
d. teaching specific lessons or classes				+0.57

(a) Using Pearson r.

(b) All correlations statistically significant with $p < 0.01$.

TABLE E6

Intercorrelations[a] between Items of a Question Regarding Team Influence in the School[b]

How much influence does your team have in decisions made in your school about	school rules and regulations	student grading practices	curriculum planning	student control and discipline
a. the educational goals and objectives of the school	+0.65	+0.69	+0.65	+0.67
b. school rules and regulations		+0.53	+0.57	+0.65
c. student grading practices			+0.75	+0.73
d. curriculum planning				+0.83

(a) Using Pearson r.

(b) All correlations statistically significant with $p < 0.01$.

TABLE E7

Intercorrelations[(a)] between Items of a Question Regarding Team Influence with the Principal[(b)]

How much influence does your team have over your principal's decisions regarding	student grading practices	curriculum	teaching methods	student control and discipline
a. school rules and regulations	+0.72	+0.77	+0.66	+0.72
b. student grading practices		+0.79	+0.77	+0.79
c. curriculum			+0.82	+0.76
d. teaching methods				+0.86

(a) Using Pearson r.

(b) All correlations statistically significant with $p < 0.01$.

TABLE E8

Intercorrelations[a] between Items of the Index of Team Influence in the School and the Index of Team Influence with the Principal[b]

How much influence does your team have over your principal's decisions regarding How much influence does your team have in decisions made in your school about	school rules and regulations	student grading practices	curriculum	teaching methods	student control and discipline
a. the educational goals and objectives of the school	+0.39	+0.35	+0.45	+0.40	+0.40
b. school rules and regulations	+0.44	+0.31	+0.37	+0.31	+0.34
c. student grading practices	+0.35	+0.50	+0.43	+0.41	+0.41
d. curriculum planning	+0.42	+0.45	+0.55	+0.44	+0.39
e. student control and discipline	+0.37	+0.46	+0.51	+0.43	+0.45

(a) Using Pearson r.

(b) All correlations statistically significant with $p < 0.01$.