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THE UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

AN EXPLORATORY STUDY OF THE EFFECTS OF THE INFORMAL ORGANIZATION ON TEACHER EXPECTANCY AS IT RELATES TO STUDENT ACHIEVEMENT

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AN EXPLORATORY STUDY OF THE EFFECTS OF THE

INFORMAL ORGANIZATION ON TEACHER

EXPECTANCY AS IT RELATES TO

STUDENT ACHIEVEMENT

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TABLE OF CONTENTS

		Page
ACKNOWLEDGEMENTS		iii
LIST OF TABLES		v
LIST OF ILLUSTRATIONS		viii
Chapter		
I.	INTRODUCTION AND BACKGROUND	1
II.	REVIEW OF RELATED LITERATURE AND RESEARCH	21
III.	RESEARCH DESIGN: SAMPLE, PROCEDURE, INSTRUMENTATION, TREATMENT OF DATA	62
IV.	PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA	84
V.	SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	115
BIBLIOGRAPHY		125
APPENDIX A		134
APPENDIX B		138
APPENDIX C		144
APPENDIX D		146
APPENDIX E		151
APPENDIX F		171

LIST OF TABLES

Table		Page
1	Achievement Level and Achievement Characteristics of Schools	65
2	Faculty Size and Student Body Composition	67
3	Sample Response	69
4	Rotated Factor Matrix	75
5	Number and Size of Informal Groups and Nongroup Members Identified in Each Group	85
6	Profile of Expectation Level for Each School . . .	87
7	Analysis of Variance for all Informal Groups and Non-membership Group Within Each School . .	88
8	Expectation Comparison of Informal Groups With the Total Faculty	92
9	Comparison of Informal Group Variances With the Total Faculty Variance by Schools	93
10	The F-test for Difference Between Teacher Expectations of Aggregate Informal Group Members and Non-group Members	94
11	The F-test for Difference Between Teacher Expectations of Informal Organization Members and Non-informal Organization Members . .	95
12	The F-test for Difference in Teacher Expectation in High and Low Achieving Schools .	97
13	The F-test for Difference in Teacher Expectation in High-high and Low-low Achieving Schools	98

Table		Page
14	Spearman Rank-Difference Correlation of Achievement Level of Schools and Teachers' Expectations Within the Schools	100
15	Spearman Rank-Difference Correlation of Achievement Level of Schools and Number of Informal Groups Within the Schools	101
16	Demographic Depiction of Total Respondents . . .	103
17	Chi-square Test for Age and Informal Group Membership	104
18	Chi-square Test for Years at the School and Informal Group Membership	105
19	Chi-square Test for Certification Level and Informal Group Membership	105
20	Chi-square Test for Teaching Assignment and Informal Group Membership	106
21	Chi-square Test for Race and Informal Group Membership	106
22	Chi-square Test for Marital Status and Informal Membership	107
23	Teacher Expectations and Age as Reported by the Totality of Respondents	108
24	Teacher Expectations and Years of Teaching Experience as Reported by the Totality of the Respondents	109
25	Teacher Expectations and Certification Level as Reported by the Totality of Respondents	110
26	Teacher Expectations and Teaching Assignment as Reported by the Totality of Respondents	110
27	Teacher Expectations and Race as Reported by the Totality of Respondents	110

Table Page

28 Teacher Expectations and Marital Status as Reported by the Totality of Respondents 111

LIST OF ILLUSTRATIONS

Illustration		Page
1	Information Group of Structure and Teacher Expectations	15

AN EXPLORATORY STUDY OF THE EFFECTS OF THE INFORMAL ORGANIZATION ON TEACHER EXPECTANCY AS IT RELATES TO STUDENT ACHIEVEMENT

CHAPTER I

INTRODUCTION AND BACKGROUND

Educators are continually striving to uncover and improve on methods which will enhance the educational process. Likewise, educational administrative theorists and practitioners seek more administrative knowledge and techniques which will result in the attainment of organizational goals more effectively and efficiently. This effort has led school administrators and students of school administration to the behavioral sciences for additional administrative concepts for organizational understanding, and for knowledge of individual and group behavior within organizations. In addition, education administration has and is borrowing notions and concepts from a variety of administrations such as business, military, and hospital on the premise that there is more which is common about the varieties of administration than is different.

School administration presently takes more fully into account the various qualities of an individual, such as the intellectual, the emotional, and the perceptual. The individual is seen as devoting a portion of his life to the organization for which he works, and it is recognized that often his actions are in conflict with the expressed goals of the organization. The values an individual holds, the structure of the formal organization, and the informal group to which he pays allegiance are seen as variables which influence his organizational behavior. (More specifically, these variables influence the individual's output.)

According to Griffiths, the formal structure of the organization is seen as the beginning for the study of organizational behavior. However, with the formal structure established, the informal structure and its effect upon the attainment of organizational goals and individual goals should be viewed.[1] Most educators will concede that the public schools are indeed formal organizational structures. Therefore, one could reason that schools may be subject to the informal organizational scrutiny to which Griffiths refers. This premise suggests that the informal organization existing within schools should receive attention.

Lazarsfeld suggests that all administrators, regardless of

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[1]Daniel E. Griffiths, "The Theme," Behavioral Science and Educational Administration, Sixty-third Yearbook of the National Society for Study of Education, Part II (Chicago: University of Chicago Press, 1964), p. 5.

the organization, are confronted with the tasks of fulfilling the goals of the organization, and using other people in fulfilling these goals, not as if they were machines, but rather in such a way as to release their initiative and creativity.[2]

If, then, school administrators are faced with the aforementioned tasks, a prerequisite for successful functioning would be understanding the nature and state of the school organization. The significance of the informal groups and the informal organization existing within the school, as mentioned earlier, cannot be overlooked or minimized. Hence, the relationships and alliances which form subsystems within the organization must be recognized and dealt with in an appropriate manner. The subsystems are complexities of human relationships which can be partially identified as:

> (1) the formal interaction system which tends to parallel the formal structure of positions, but is subject to deviation in response to changing demands for coordination of individual performance and subgroup operations; (2) the norm system of the groups and of its subgroups which, through sanction and prescription, defines acceptable conduct for group members; (3) the system of member performance which describes operations of the group and changes in response to variation of the task; (4) the system of informal interactions which brings together group members on the basis of propinquity, mutual liking, similarity of interests; and (5) the system of covert interactions, if

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[2]Paul F. Lazarsfeld, "The Social Sciences and Administration: A Rationale," in Social Sciences and Educational Administration, ed. by Lorne Downey and Frederick Enns (Edmonton, Canada: University of Alberta, 1963), pp. 3-4.

> present, which brings together persons who challenge the legitimacy of the operative role structure and differential sanctions associated with it.[3]

The complex human and interpersonal relationships which form the subsystems within organizations are both formal and informal. And since the time of the great work of Elton Mayo and the famous Hawthorne studies, interest and effort have been shown in developing understandings about how these subsystems affect organizations, particularly, factors which influence worker productivity and efficiency.

Dubin states that when analyzing the informal organization it should be started by drawing an important distinction between the two types of groups. The weekly bridge group is one kind of informal group. The work group acting together to restrict output is another type of informal association. The major difference between the two lies in the fact that the first is independent of any formal organization, while the second is an integral part of one.[4]

A rather commonly held view is that informal groups are subversive of the formal organization's purposes. Such groups oppose objectives set by management and work counter to demands and requests

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[3]Floyd E. McCleary and Stephen P. Hencley, Secondary School Administration: Theoretical Bases of Professional Practice (New York: Dodd, Mead and Company, 1965), p. 101.

[4]Robert Dubin, Human Relations in Administration (Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1968), p. 104.

coming from higher authority. According to Dubin, it is common knowledge that restriction of output is a product of the informal group that sets output standards below management's expectations and then polices the observance of the lower standards. This, however, is just one way informal and formal organizations are linked.[5] Heller suggests that the informal organization often cooperates with the administration both directly and indirectly. When the informal group works cooperatively with administration, it may even exceed the established expectations and goals of the organization. The informal group may also establish a position of neutrality when its interests have no relationship to the work of the formal organization. The existence of the informal groups may be based purely on sociability.[6]

Blau and Scott state that during the Hawthorne studies there were observable overt manifestations of the network of informal relations that developed among the workers. Sentiments of liking and respect were expressed primarily toward some group members, while others were not respected and were disliked. These aspects divided the workers into cliques and a few isolates who were not members of any clique. While there was some conflict between cliques, there were social bonds that united the entire group and made possible the enforce-

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[5]Ibid., p. 105.

[6]Robert W. Heller, "Informal Organization and Perceptions of the Organizational Climate of Schools," The Journal of Educational Research, LXI (May-June, 1968), 406.

ment of common norms. Some violations were punished by group members in a variety of ways. And continued violation of important norms by an individual resulted in a loss of popularity, a reduction in social interaction, and ultimately in complete ostracism.[7]

The informal organization, not only develops behavior norms, and affects worker productivity, but also produces an informal reward system which frequently behaves in the following manner:

> Among persons identified with their craft or profession, there is a tendency to look up to colleagues who are particularly expert in occupational skills. The respect and the popularity that such workers frequently enjoy are rewards for outstanding performance, and the promise of informal status serves as an incentive to become more skilled in their work.[8]

Perhaps one of the basic reasons for the existence of small groups is communications, or the need for information about the world. Litterer concludes that informal groups not only provide information but also produce interpretation of facts which individuals receive but whose meanings are difficult to ascertain. It is important to remember this point, because the small group is more than an instrument for controlling member behavior. Since an informal organization is so important in getting information to individuals and interpreting information,

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[7]Peter M. Blau and W. Richard Scott, Formal Organizations (San Francisco: Chandler Publishing Company, 1962), pp. 91-92.

[8]Ibid., p. 94.

it serves a very important role in forming people's opinions and impressions of what the world around them is really like. Investigators and lay observers have noted that members of groups, cliques, or gangs frequently hold in common certain values, beliefs, and opinions. Regardless of what they are, informal groups will have shared values. Some of these values may have been held by the individuals for a long time. At times individuals holding similar views come together to form a group on the basis of these shared views. At other times we can find that values are developed among people who are already in a group, and that these values are then a product rather than an antecedent of group life.[9]

Factors which influence the development of informal groups anywhere may also be seen at work in the formation of groups of teachers. "Studies on primary group formation among teachers have found that such groups not only exist from September to June in a school but that they are reconstituted with no appreciable change when school reassembles the following year."[10] Once these informal groups come into being they dispose of social power. This may be seen in the

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[9]Joseph A. Litterer,, Organizations: Structure and Behavior (New York: John Wiley and Sons, Inc., 1964), p. 141.

[10]Lawrence Iannaccone, "An Approach to the Informal Organization of the School," Behavioral Science and Educational Administration, ed. by Daniel Griffiths, the Sixty-third Yearbook of the National Society for the Study of Education, Part II (Chicago: University of Chicago Press, 1964), p. 233.

influence the group and its norm system has on its members, and on occasions, on other persons in the school including administrators.

Iannaccone states that the school faculty tends to consist of several primary groups. The groups generally are linked together. There are two kinds of linkages. The occurrence of a common member in two primary groups constitutes one type of linkage referred to as articulation. The other linkage is referred to as a bridge. This occurs when a member of one group of teachers regularly interacts with a member of another group, but no common membership exists. The bridge spans the gap between the groups but is sufficiently limited to prevent the two groups from merging into one.[11] The following illustrates what may occur within a school.

> The primary groups of teachers in a faculty form a complex structure knit by articulations and bridges. There may be an occasional primary group which is isolated from the rest of the groups in the school. Similarly, there may be individual teachers who do not regularly interact with other teachers and who are not part of any primary group in the school.[12]

Depending in part on the size of a school, it can reasonably be expected that some groups will be linked indirectly to a second group by an intervening third group. Just as it would be expected that most teachers would be related by regular interaction with some other teachers, it could be expected that most groups of teachers would be connected with other groups by a chain of interaction.

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[11] Ibid., p. 234. [12] Ibid.

If ideas and attitudes flow through such articulations and bridges, and since informal groups have normative systems which affect member ideas and attitudes, it can reasonably be thought that teacher expectations (attitudes regarding student achievement) may be affected by their membership in an informal group. Moreover, it can reasonably be thought that these expectations may well flow through the bridges and articulations of the school's informal organization. These expectations, whatever they may be, may well affect the academic performance of students.

More often than not, individuals do what is expected of them. Much of our behavior is governed by widely shared norms or expectations that make it possible to prophesy how a person will behave in a given situation. Our prophecy may itself be a factor in determining the behavior of other people. Rosenthal and Jacobson in their somewhat controversial book state that there have been theoretical formulations, and there has been some evidence, most of it anecdotal, that the teacher's expectations, however derived, can come to serve as an educational self-fulfilling procphecy.[13] Even when students are able to function with adequacy, when the expectation is that of failure, some students will strive to live up to the teacher's prediction even though

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[13]Robert Rosenthal and Lenore Jacobson, Pygmalion in the Classroom (New York: Holt, Rinehart and Winston, Inc., 1968), p. viii.

they have the potential to perform successfully.

Isaacs writes that the expectation of success is an important variable in its attainment. What the teacher expects from the students, to some extent, determines what she gets. However, slow learners with the best of teaching remain slow learners, and some gifted children will attain in spite of poor teaching. But if gifted children, for example, are expected to achieve no more than average, this the children will strive to do. If the teacher works to capacity, she exemplifies what the child may aspire to, and each classroom situation reflects the attitudes and personality of the teacher.[14]

Based on their research and study, Rosenthal and Jacobson suggest that one person's expectations of another's behavior may come to serve as a self-fulfilling prophecy. When teachers expected that certain children would show greater intellectual development, those children did show greater intellectual development.[15] "It appears now that teachers' favorable expectations can be responsible for gains in their pupils' IQ's and, for the lower grades, these gains may be quite dramatic."[16] Teachers may not only get more when they expect more, they may also come to expect more when they get more. The

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[14]Ann F. Isaacs, "Role Expectancy and Its Effect on Performance and Achievement Among Gifted Students," The High School Journal, LXVIII (November, 1964), 113.

[15]Rosenthal and Jacobson, Pygmalion in the Classroom, pp. 82-83.

[16]Ibid., p. 98.

students in the Rosenthal-Jacobson study who were expected to grow intellectually, and did, were described by their teachers as significantly more likely to succeed in the future, as more interesting, and as happier. Students who were expected to grow intellectually seem to have benefited in other ways as well.

The following results of another recent study help substantiate the self-fulfilling prophecy in education also.

> When teachers in this study reported that they believed that boys are far less successful than girls in learning to read (when they defined a situation as real), the boys in their classes were far less successful than the girls (the situation was real in its consequences). Conversely, when teachers reported that they believed that boys are as successful as girls, the boys in their classes were as successful as girls.[17]

If teacher expectancy does in fact affect the performance of students, it is logical to think that teachers are consciously, unconsciously, or both, providing a particular level of output in relation to the students as a result of this expectancy. To make this point clear, we have all heard reports describing superhuman achievements such as a mother lifting a 300-pound car which had tumbled from the jack and pinned her son. The incident of a father moving a large boulder to free his toddler typifies this type of feat. In both of these instances, the individuals endeavored a task which normally would have been beyond their physiological and (more important) psychological capacities.

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[17] J. Michael Palardy, "What Teachers Believe--What Children Achieve," The Elementary School Journal, LXIX (April, 1969), 374.

But in making the effort with expectation of success, the goal was achieved. Hence, the individual's level of expectancy affected the individual output and subsequent goal achievement. Rosenthal and Jacobson report that as a result of the belief and expectation of a computer center director that he could train a poorly educated janitor to be a competent computer operator, he was successful in doing so.[18] Evidently, the director's output in training the janitor affected the outcome, since the janitor's IQ test scores indicated insufficient ability for this task.

The nature of the teacher's output toward a student or students can be viewed and seen in different ways. For example, Rosenthal was not able to determine differences in the amount of time teachers spent with the experimental group or the control group. He states that it seems plausible to think that it was not a difference in the amount of time spent with the children of the two groups which led to the differences in their rates of intellectual development. It may have been more a matter of the type of interaction which took place between the teachers and their pupils which served as the determinant of the expected intellectual gains.[19] Another hint available from research on expectations as a determinant of learning ability may be seen in the following paragraph.

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[18]Rosenthal and Jacobson, Pygmalion in the Classroom, p. 34.

[19]Ibid., p. 159.

> More careful observation of an organism's behavior permits (1) a more rapid judgment of the correctness of its behavior, and (2) the more rapid rewarding of correct or desired behavior. The teacher who observes more carefully may, therefore, be the more effective teacher. The children in the experimental group were called to the teacher's attention, and it seems reasonable to think that they, therefore, attended more closely to the behavior of these children. Correct responding on the part of these children may have been more rapidly reinforced by teachers because they were watching more closely and expecting to see more correct responses to be reinforced. More rapid reinforcement may have led to greater learning.[20]

Based on the aforementioned, one might conclude that some teachers are unwittingly, intentionally, or both, thwarting organizational goals (certainly a primary goal of the school is that each individual achieves to his maximum academic potential) by possessing a particular set of expectations for a student or students. Consequently, their output behavior is affected; and this affects the academic performance of the student or students. Therefore, as research has shown in industry and business, informal groups frequently work against the attainment of organizational goals by suppressing output, informal groups within schools may well be retarding a school goal by lowering teacher expectations for students.

Purpose of the Study

The primary purpose of this study is to determine whether the expectations teachers hold for students are influenced by the in-

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[20] Ibid., pp. 160-161.

formal organization present in the school. And also whether or not the expectations held by teachers belonging to informal groups are dissimilar to the expectations held by teachers who are not members of an informal group. Characteristically, the informal organization within formal organizations emerges to affect the behavior and goals of the organization. In addition, this study will examine the extent to which teachers' expectations concerning students' academic achievement are influenced by their involvement with others in the informal group; and the extent to which schools with low and high student achievement are related to the expectations of the teaching staffs at those schools.

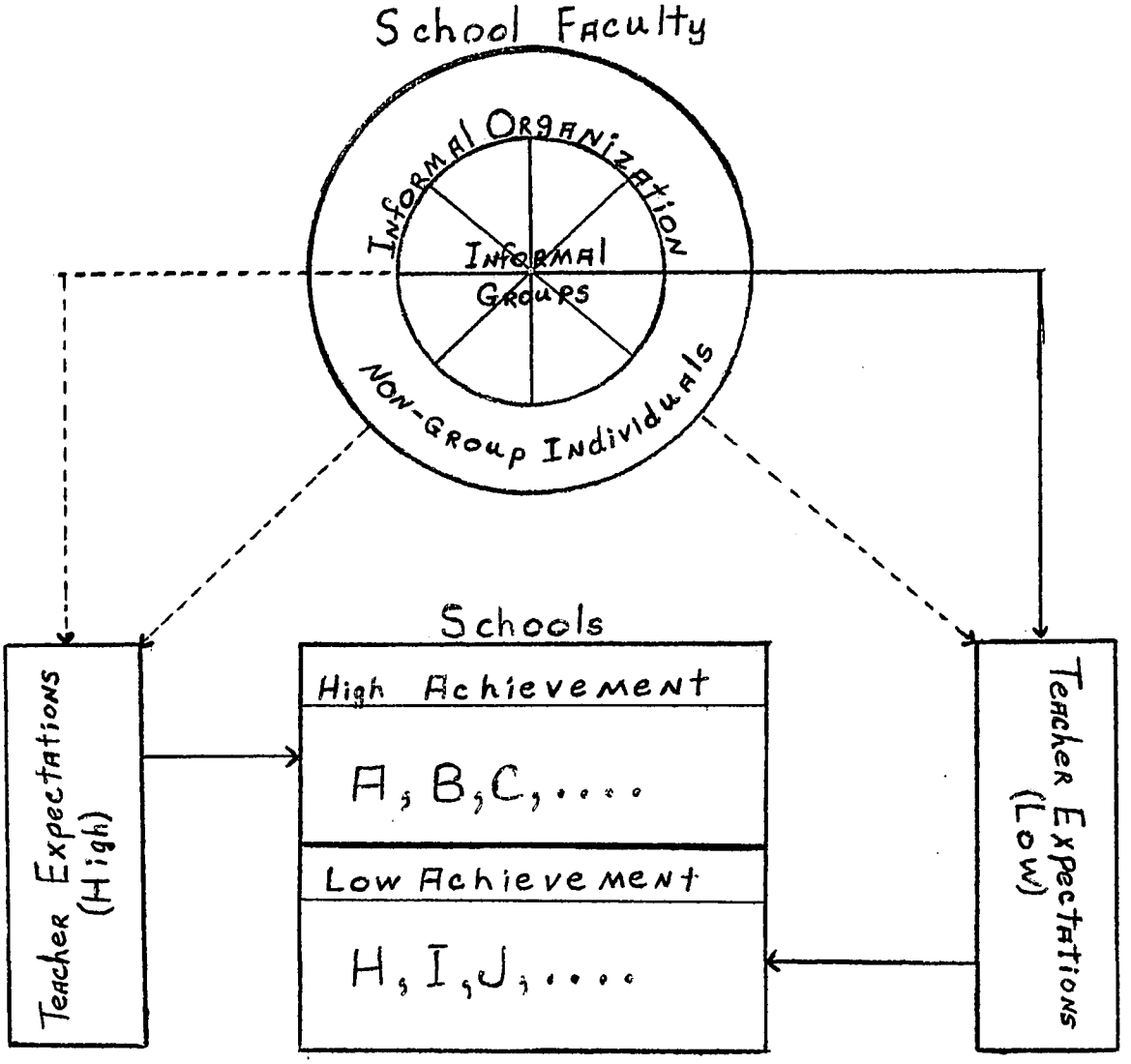
Statement of the Problem

The problem of this study is threefold: (1) to determine whether the expectations teachers have for students regarding academic performance is related to their membership in informal teacher groups in the school; (2) to determine whether the achievement level of schools is related to the expectations teachers have for student achievement in those schools; (3) to determine whether teacher expectancy and teacher informal group membership in the school are related to certain demographic characteristics of teachers. The following model is a theoretical graphical depiction of the problem under consideration.

The inner circle contains the subject of the study--informal

ILLUSTRATION 1

INFORMAL GROUP STRUCTURE AND
TEACHER EXPECTATIONS



organization. The areas enclosed by the central angles and their arcs represent informal groups which comprise the informal organization of a school. The area between the inner circle and outer circle represents the individuals of a school who are isolates or outgroup members.

The outer circle encloses the total area which represents the total faculty of a school. The outer rectangles depict the level of teacher expectancy, with the left rectangle and right rectangle representing high and low expectancy respectively. The upper portion of the square represents schools with high student achievement levels, and the lower portion depicts schools with low student achievement levels.

The solid lines leading from the "informal organization" to "low teacher expectations" to "low achievement," and, from "high teacher expectations" to "high achievement" represent the hypothesized flow and effect of teachers' attitudes. The broken lines leading from the "informal organization" and the "nongroup individuals" to "teacher expectations," represent the possible alternative flow of teachers' attitudes.

Hypotheses Tested

The general hypothesis tested in this study was that teachers' expectations concerning student achievement are influenced by their membership in informal groups existing in the schools. For the specific null hypotheses which were tested see Chapter III.

Significance of the Study

The existing knowledge regarding the impact of informal groups and the informal organization on formal organizational objectives in business and industry, and the degree to which individuals' behavior

is affected by primary groups, suggested that an investigation was needed to determine if similar relationships existed within schools. Research findings have indicated that in industry informal groups frequently oppose the stated goals of the organization. If this phenomenon exists in schools, administrators need to be apprised so that methods may be developed in response to the condition.

Moreover, to date research relative to the influence of the informal organization operating within schools has received little attention. The need for additional study into the behavior of the informal organization of schools is imperative if educational administrators are to meet their responsibilities as persons charged with the operation and goal attainment of the formal organization.

Definition of Terms

Informal group--set of interpersonal relations which forms within an organization to affect decisions of the organizations and meet the individual's needs for satisfactory human relationships. This study will consider "three or more individuals all of whom are chosen by at least one-half of the others,"[21] as an informal group.

Primary group--the instrument of society through which in large measure the individual acquires his attitudes, opinions, goals, and ideals.

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[21]Elaine Forsyth and Leo Katz, "A Matrix Approach to the Analysis of Sociometric Data," Sociometry, IX (November, 1946), 342.

Informal organization--the system of interlocking personal relationships and groups, and the combination of all types of informal groups in the organization.

Cliques--a subset of an informal group with three or more members, each in a symmetric relation to all other members of the subset.[22]

Symmetric relation--a mutual choice, selection or two-way communication between two individuals.[23]

Teacher--an individual whose full-time responsibility is that of teaching within a classroom or some other area.

Teacher expectancy--the set of notions, feelings, and attitudes a teacher has for students regarding their potential to achieve academically.

Certification level--the officially recognized educational qualifications of an individual, i.e., bachelor's degree, master's degree, and beyond master's degree.

Non-group individuals--persons who are not members of an informal group. These persons may be isolates, may be in a symmetrical relation with another person or may be chosen by some

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[22]R. Duncan Luce and Albert D. Perry, "A Method of Matrix Analysis of Group Structure," Psychometrika, XIV (June, 1949), 97.

[23]Ibid., p. 96.

members of an informal group.

Formal organization--the various ways in the schools of distributing administrative tasks among positions and the patterns for forming administrative units.

School faculty--the total body of teachers in a public school.

Achievement--the level of academic performance which students attain in school as measured by the "Metropolitan Achievement Test" and the "Comprehensive Tests of Basic Skills" in the areas of reading comprehension and arithmetic application.

Limitations of Study

The following limitations should be noted regarding this study:

1. This study was limited to selected elementary schools in a large urban school district.

2. This study was limited to teachers in those schools.

Organization of Study

This investigation is organized and presented in five chapters. Chapter I contains the introduction and background, and

the identification of the problem to be investigated. A study and review of related literature and research comprise Chapter II. In Chapter III is the presentation of the study design, data collection procedure employed and the construction of an instrument used in the investigation. Chapter IV deals with the analysis, interpretation and findings of the study. Presented in Chapter V is the summary of the investigation, the conclusions based on the findings, and recommendations and suggestions for further research.

CHAPTER II

REVIEW OF RELATED LITERATURE AND RESEARCH

The problem under investigation deals with the informal organizational influence on teacher expectancy. Central to this concern is the effect of informal group membership on the expectations teachers have for student achievement. Consequently, the review of literature and research presented in this study is organized in the following topics: (1) informal organization; (2) informal groups; (3) teacher informal groups; (4) research related to school informal groups; (5) psychology of expectations (self-fulfilling prophecy); (6) research related to expectancy behavior; and (7) literature and research related to teacher expectations about student achievement.

Informal Organization

At one time it was believed that knowledge of the formal organization was sufficient for understanding the functioning of an organization. However, knowledge of the formal organization gives only a partial picture of the functioning of an organization. Since organizations never operate actually as if they were bureaucratic

machines and because the people within cannot be regimented completely, it is necessary to study the informal organization which develops within the formal structure. Barnard states that one will hear repeatedly that "you can't understand an organization or how it works from its organization chart, its charter, rules and regulations nor from looking at or even watching its personnel . . . Learning the organization ropes in most organizations is chiefly learning who's who, what's what, why's why, of its informal society."[1]

Bell and Sirjamaki write that when organizations are considered as groups of people and main interest exists in how such groups actually work together as persons, we speak of their informal organization. The term is an awkward one, but it directs attention to the human aspect of organizations. These groups of people tend to divide into smaller groups, some of them formal ones such as groups of officials or persons in similar occupations, others of them into informal groups of associates and acquaintances. Within these groups they further learn to live and work in organizations, become familiar with the conduct required of them, comply with rules or deviate from them, and either perform their roles or sabotage them. In brief, they are socialized through these groups to succeed in organizations or, as

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[1]Chester I. Barnard, The Functions of the Executive (Cambridge, Massachusetts: Harvard University Press, 1966), p. 121.

the case may be, to survive in them by token compliance with formal rules and role performances.[2]

To distinguish between the formal and informal organizations, the following provides contrasting terms which illustrate the two aspects of organizations:

Formal Organization	Informal Organization
Associational norms	Communal norms
Statuses	Roles
Prestige	Esteem
Authority	Leadership
Superordination	Domination
Extrinsic evaluation of persons	Intrinsic evaluation of persons
Status relations	Personal relations[3]

In the left-hand column, the terms denote the structure of positions, the relationships of those filling the positions, and the authority associated with the offices in organizations. In the right-hand column, the terms imply the social and personal relations which develop between persons who comprise organizations, and fill positions and perform roles in them. Formal and informal organizations supplement and reinforce each other.

Frequently, informal organizations arise within formal ones to adapt more quickly to changing conditions when the formal

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[2]Earl H. Bell and John Sirjamaki, Social Foundations of Human Behavior (New York: Harper and Row, 1965), p. 408.

[3]Robert Bierstedt, The Social Order (New York: McGraw-Hill Book Company, Inc., 1963), p. 337.

organization is not changed. For example, a business geared to maximum productivity may find itself during a slack period faced with informal groups retarding output in order to prevent layoffs. Moreover, Bass asserts that informal organizations may arise to continue communications failing along more formal lines. If a department head fails to meet regularly with his group to discuss mutual actions and problems, he may be surprised by the development of active cliques sharing their guesses about various motives and future actions. The informal organization may serve to disrupt the formal relations established by authority; and communication by informal interaction is less likely to be accurate. Material unfavorable to the formal system is likely to be disseminated through the informal structure.[4]

Creation of an informal organization, according to Bass, is one of a few ways to deal with the problems of formal organization rigidity. He states that a pattern of behavior is ascribed to each member, rather than to his position. Hence, control and power is based on personal esteem rather than organizational status. If the informal organization does not deviate too much from the formal, power to support attempted leadership based on "person" will add to the power to support attempted leadership based on "position." The

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[4]Bernard M. Bass, Leadership Psychology, and Organizational Behavior (New York: Harper and Brothers, 1960), p. 85.

informal organization will reinforce the effects of the formal. On the other hand, if the informal leaders are different from the formal leaders, and if their aims are in conflict, then the informal organization is likely to further reduce the task effectiveness of the group.[5]

According to Argyris, research on personality has provided the basis for hypothesizing that individuals will tend to try to guarantee the expression of those predispositions that are important for them. From research on culture, the hypothesis can be made that one way individuals can guarantee the expressions of their needs is to create an informal culture that sanctions and approves these needs.[6] This informal employee culture serves as a system to guarantee through cultural norms that the individual needs are maintained in time, which in turn supports the employees in their striving for self-actualization within the organization social system. The effort to satisfy these needs may very well be in conflict with some of the formal organizational goals.

Dubin writes that the informal association is usually grouped in the common interest of its members. Members can come into and move out of such associations as needs, interests, and compatibility dictate. To some extent the informal group within a

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[5]Ibid., p. 419.

[6]Chris Argyris, Understanding Organizational Behavior (Homewood, Illinois: The Dorsey Press, Inc., 1960), p. 91.

formal organization shares these characteristics. The notable addition to the situation is that the informal group in a formal organization has meaning and significance primarily in relation to the formal organization of which it is a part.[7] Katz and Kahn indicate that since the Hawthorne studies the term informal group is sometimes used to describe behavior in an organization which is outside role requirements and possibly opposed to their fulfillment, thereby equating informal systems with restriction of output. This usage, however, seems parochial and confusing, since there may be informal systems that are uncodified, supportive extensions of the formal structure, and all relevant cycles of behavior should be included for study and definition. To define as informal all acts which are unwanted by management has a certain pragmatic value, but it is a slippery base on which to construct organizational theory.[8]

Carlson states that much of the research work on informal organization has emphasized the least illuminating consideration, that informal relations and practices deviate from the formalized plan. This is unfortunate, because the potential of the concept for our understanding of purposive organization has hardly been

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[7]Robert Dubin, Human Relations in Administration (New York: Prentice-Hall, 1951), p. 57.

[8]Daniel Katz and Robert Kahn, The Social Psychology of Organizations (New York: John Wiley and Sons, Inc., 1967), p. 48.

explored or exploited.[9]

The term "informal organization" represents a vague phenomenon and calls different images to many minds, and the numerous studies of informal organization have led to the assignment of various purposes and descriptions; this diversity can be seen in the following excerpts:

> The term "informal organization" refers to interpersonal relations in the organization that affect decisions within it.[10]

> . . . informal organization is indefinite and rather structureless. . . a shapeless mass of quite varied densities. . . the aggregate of the personal contacts and interactions and the associated groupings. . .[11]

> Like the formal, . . ."informal organization" consists of rules, groupings and sanctioned systems of procedure. They are informal because they are never recorded. . . and are generated and maintained with a degree of spontaneity. . .[12]

> Informal organization is composed of the animosities and friendships among the people who work together.[13]

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[9]Richard O. Carlson, "Informal Organization and Social Distance: A Paradox of Purposive Organization," Educational Administration and Supervision, XLIV (November, 1958), p. 366.

[10]Herbert Simon, Administrative Behavior (New York: The Macmillan Company, 1947), p. 115.

[11]Chester I. Barnard, The Functions of the Executive (Cambridge, Mass.: Harvard University Press, 1938), p. 115.

[12]Charles Hunt Page, "Beaurocracy's Other Face," Social Forces, XXV (October, 1946), p. 89.

[13]Delbert C. Miller and William H. Form, Industrial Sociology (New York: Harper and Brothers, 1951), p. 863.

Despite this diversity of notions about the informal organization, students of organizations agree about its impact. "The general tone of the agreement is that organizations can't function without informal organization, which is an inevitable and indispensable condition of organization."[14] In addition to this agreement, specific qualities have been assigned to informal organization. These qualities being concerned with change, collaboration, attitudes and behavior. Carlson asserts that one perceptive student of organization has pointed out that in every organization the goals of the organization are modified by processes within it, and that this modification and thus change is effected through the informal organization.[15] "Further, the major role in determining attitudes and behavior as well as controlling behavior resides with the informal organization.[16] Those interactions between persons which are based on personal rather than on joint or common purposes, because of their repetitive character become systematic and organized through their effect upon habits of action and thought, and through their promotion of uniform states of mind.

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[14]Carlson, Informal Organization and Social Distance, p. 368.

[15]Ibid., p. 369.

[16]Ibid., p. 369, quoting Burleigh B. Gardner,"The Factory as a Social System," in W. F. Whyte (ed.), Industry and Society (New York: McGraw-Hill, 1946), p. 7.

According to Barnard, the informal organization also serves the function of maintaining one's feeling of personal integrity, of self-respect, and of independent choice. Since the interactions of informal organization are not consciously dominated by a given impersonal objective or by authority as the organization expression, the interactions are apparently characterized by choice, and furnish the opportunity often for reinforcement of personal attitudes. Though often this function is deemed destructive of formal organization, it is to be regarded as a means of maintaining the personality of the individual against certain effects of formal organizations which tend to disintegrate the personality.[17]

Sayles indicates that the friendship group has emerged as the agency which welds the individual to the organization. Loyalty, even attachment, to the total organization with its impersonality, extended hierarchy, and social distance becomes ambiguous. However, attachment to the immediate and easily perceived face-to-face group is the predominant reality of organization experience.[18]

"Interpersonal activities among people who make up any organization may be divided into two main types: those clearly directed toward the attainment of organizational goals, and those

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[17]Barnard, Functions of the Executive, p. 122.

[18]Leonard R. Sayles, "Work Group Behavior and the Larger Organization," Research in Industrial Human Relations, ed. Conrad M. Arensbey, et. al. (New York: Harper and Brothers Publishers, 1957), p. 133.

not so directed."[19] The first type involves activities which are necessary, as seen by those in authority, to the achievement of the purposes of the organization. The second type involves activities not essential to the achievement of organizational goals. Individuals having lunch together and socializing after working hours are examples.

Sutermeister expresses the notion that work is a social experience, and most workers can fulfill their social needs through membership in a small work group. An individual employee can belong to several informal groups. One is a group which has a common supervisor; another is a group engaged in a common task or function; another is a friendship clique, composed of employees who have a liking for each other; another is a work group seeking an objective related to the larger organization.[20] A description of the informal job grouping follows:

> Clusterings of workers-on-the-job all have these characteristics: they stem from the uniqueness of individual personality, which refuses to combine into layer "wholes" without changing those entities. The sum of a group of individuals is something more than the total of the constituents; it is a new organization, because most of the members obtain satisfaction in

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[19]Robert Tannenbaum, Irving R. Weschler, and Fred Massarik, Leadership and Organization (New York: McGraw-Hill Book Company, 1961), p. 347.

[20]Robert A. Sutermeister, People and Productivity (New York: McGraw-Hill Book Company, 1963), p. 31.

> gaining acceptance as a part of the group, and the group itself wields an influence over its members. . .
>
> This observance of group-sanctioned behavior and attitudes "fills out" the rationally conceived organization. What is on paper an organization becomes a "living, breathing" social organism, with all the intricacies, emotions, and contradictions we associate with human relations.[21]

Brown asserts that the informal working group is the main source of social control in the organization. Management should avoid breaking them up, and endeavor to exercise legitimate control through such groups.[22] Brown continues by stating that these informal groups are not temporary association--they have some degree of permanence. They have particular aims and a definite structure. Their size is limited and their members are known. Within such a group, each member has a specific function and relationship with other members.[23] The potential in a small cohesive informal work group can be used to support or sabotage management's goals, as shown in the following:

> An informal work group may be cohesive in maintaining low production standards, resisting change, hostility toward supervision and/or other groups, denying membership to newcomers, and demanding strict conformity of its membership. On the other hand,

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[21] Ibid., pp. 31-32.

[22] J. A. C. Brown, The Social Psychology of Industry (Baltimore, Maryland: Penguin Books, Inc., 1954), p. 127.

[23] Ibid., p. 128.

> a cohesive work group may have high work standards, accept technological change, be friendly to other groups, cooperate with supervision, and have minimum unwritten codes on conformity for membership.[24]

Informal Groups

All large organizations may be thought of as having a number of smaller groups. According to Brown, these small groups vary in size, but average about eight or ten people, the number being determined by the fact that problems of communication become greater as the size of a group increases. Since it is impossible to hold a primary group together in the absence of adequate face-toface communication, there is a tendency for it to break up or subdivide after it has reached a certain critical size. A group of more than ten or twelve people is likely to divide in a similar manner, since, beyond this size, intimate face-to-face contacts between all its members can no longer be maintained.[25] However, Berelson and Steiner write that a small group contains from two up to an unspecified number of people. It is impossible to specify a strict upper limit on the size of the informal group, except for the limitation imposed by the requirement that all the members be able to engage in direct personal relations at one time--which means, roughly, an upper limit of around fifteen to

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[24]William H. Knowles, "Human Relations in Industry: Research and Concepts," California Management Review, Vol. I (Fall, 1958), p. 92.

[25]Brown, Social Psychology of Industry, p. 124.

twenty. If the group gets much larger than that, it begins to lose some of the quality of a small group, and begins to break into small subgroups.[26]

The small informal group strongly influences the behavior of its members by setting and/or enforcing standards or norms for proper behavior by its members. The more stable and cohesive the group is, and the more attached the members are to it, the more influential it is in setting standards for their behavior. Through the setting and maintenance of group standards, Sayles suggests that informal groups protect their memberships from possible indiscretions that might reflect adversely on them all; also they provide support for the individual by acting as a buffer to outside organizations and by sustaining him through the provision of known and acceptable routines of behavior within the face-to-face work group.[27] Sayles continues by indicating that the individual's most immediate and meaningful experiences of work are obtained in the context of the work group and his work associates. The larger organization is experienced by indirection, but membership in the small group contributes directly to the shaping of attitudes and behaviors toward the entire world of work.[28] Sayles points out that:

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[26]Bernard Berelson and Gary A. Steiner, Human Behavior (New York: Harcourt, Brace and World, Inc., 1964), p. 325.

[27]Sayles, Work Group Behavior, p. 142. [28]Ibid., p. 131.

> At the workplace we find a multitude of friendship groups representing the diverse interests of the workers placed there by the organization. The boundaries of these clusterings appear to reflect the employees' off-the-job interests and associations or previous work experience. Age, ethnic background, outside activities, sex, marital status, and so on comprise the mortar that binds the clique together.[29]

The habits, feelings, sympathies and idiosyncrasies of these face-to-face groups are often determined by the personal peculiarities of individual leaders and prominent members.

These face-to-face groups to which it has been referred have primary group characteristics. This can be seen in the following definition:

> By primary groups, I mean those characterized by intimate face-to-face associations and cooperation. They are primary in several senses, but chiefly in that they are fundamental in forming the social nature and ideals of the individual. The result of an intimate association. . . is a certain fusion of individualities in a common whole, so that one's very self, for many purposes at least, is the common life and purpose of the group.[30]

Akolkar asserts that primary groups are psychologically very powerful. It is in them that the socialization of the individual occurs and his character and personality are molded. Primary groups are the birth place of social ideals. The seeds of culture lie

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[29]Ibid., p. 133.

[30]Charles H. Cooley, Social Organization (New York: Charles Scribner's Sons, 1922), p. 23.

and bear fruit in them. Members of primary groups have confidence in one another and also share the conviction that essentially they are equal. This makes for maximum cooperation among them. The relationships being intimate and informal, the behavior of members is most effectively and directly controlled.[31]

This form of cooperation and effective direct control can clearly be seen in a portion of Roethlisberger's statement on the results of the Hawthorne experimenters in a study called the Bank Wiring Observation Room. Roethlisberger writes that a group of men were on a group piecework where the more they turned out the more they earned. Normally one would expect the faster workers to apply pressure to the slower ones for increased output. But this was not the case. Operating within the group were four basic sentiments, which are expressed as follows:

> 1. You should not turn out too much work; if you do you are a "rate buster."
> 2. You should not turn out too little work; if you do you are a "chiseler."
> 3. You should not say anything to a supervisor which would react to the detriment of one of your associates; if you do you are a "squealer."
> 4. You should not be too officious; that is if you are an inspector you should not act like one.[32]

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[31]V. V. Akolkar, Social Psychology (London: Asia Publishing House, 1960), pp. 114-115.

[32]F. J. Roethlisberger, Management and Morale (Cambridge, Massachusetts: Harvard University Press, 1949), p. 22.

To be an accepted member of the group a man had to act in accordance with these social norms. These norms are the ideals which the individual must follow to avoid some form of group punishment. Once these norms are established for the group, they exert a supporting effect on the group. "They may act as an incentive in the sense that a man may try to bring his behavior closer to the norms."[33]

Aside from developing cooperation and controlling an individual's behavior, the informal group provides an environment which allows some individual innovation for getting tasks done. Dubin expresses that the society of close associates is the realm in which detailed knowledge about work tasks is shared, and it is here that alternative ways of accomplishing things are known and discussed. The approval of fellow-workers becomes important in supporting innovation and original ideas while their disapproval may be sufficient to squelch new ideas. The informal group is the breeding ground in which the individual can experiment with unique ideas without having to "sell the boss" before trying them.[34]

The informal or primary group to which it has been referred arises spontaneously from a particular collection of individual acquaintances. This spontaneous formation is a result of interpersonal

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[33]George Homans, The Human Group (New York: Harcourt, Brace and Company, 1950), p. 126.

[34]Robert Dubin, Human Relations in Administration (Englewood Cliffs, New Jersey, Prentice-Hall, Inc., 1968), p. 106.

attractions among individuals, and it depends on a set of conditions which determines such attractions. Cartwright and Zander maintain that a person will tend to be attracted to another if he believes that the other's attitudes and values are similar to his own. Moreover, this attraction will be stronger, the more important the attitudes and values are to the person.[35]

A slightly contrasting view of the formation of the group can be seen in the following statement by Hall and Lindzey:

> A primary group, according to Freud, is a number of individuals who have taken the same person (leader) for their ideal and who, by virtue of having a common ideal, identify themselves with one another. Thus emotional bonds are established among the members of a group and between each member and the leader. The bond with the leader is of more importance to group stability than are the ties between members since it is the former which gives significance to the latter. When the ties of the members with the leader are broken, the group dissolves unless another person acquires the status of an ideal figure.[36]

Irrespective of this slight contrast, both descriptions of group formation suggest that high attraction or emotional bonds on the part of members produce high group solidarity or cohesion. This

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[35]Dorwin Cartwright and Alvin Zander, Group Dynamics: Research and Theory (New York: Harper and Row, Publishers, 1968), p. 55.

[36]Calvin S. Hall and Gardner Lindzey, "The Relevance of Freudian Psychology and Related Viewpoints for the Social Sciences," The Handbook of Social Psychology, ed. Gardner Lindzey and Elliott Aronson (Reading, Massachusetts: Addison-Wesley Publishing Company, 1968), p. 275.

cohesion can be a powerful force within an organization and may or may not assume a posture opposing the formal organization. Katz, citing work done by Seashore, states that cohesive groups tend to have either higher or lower rates of productivity than the company as a whole. The groups lacking cohesion tend to be widely distributed around the company norm. Thus, group cohesion does not guarantee higher production, better quality work, nor work beyond the call of duty. It does, however, lead to lower absenteeism and lower turnover because the social satisfaction the individuals obtain from their grouping holds them in the system.[37]

Informal Teacher Groups

Conditions and factors which influence informal group formation under any circumstances may be seen in the development of informal groups among teachers in schools. There are various contributors to the formation of these teacher primary groups. "Some of these contributors are proximity of teaching stations, similarity of teaching assignments, age, sex, marital status, and previous training."[38]

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[37]Daniel Katz, "Human Interrelationships and Organizational Behavior," Concepts and Issues in Administrative Behavior, ed. Sidney Mailick and Edward H. VanNess (Englewood Cliffs, N.J.: Prentice-Hall Inc., 1962), p. 177, citing Stanley E. Seashore, Group Cohesiveness in the Industrial Work Group (Ann Arbor, Michigan: Institute for Social Research, University of Michigan, 1955).

[38]Iannaccone, "An Approach to the Informal Organization of the School," p. 233.

Whatever the reasons for formation, these groups dispose of social power the same as other informal groups in other organizations. This power may be seen in the influence the group and its norms have on the group members. The power of the group may also be brought to bear upon other persons in the school including administrators. For example, Jenson has suggested that if an administrator attempts to bring about some school change, and this change is perceived by an informal group as threatening, these clique structures are reinforced and become centers of strong resistance. Communication of any real significance moves from public discussion to the "underground." Informal and clique relations can offer fanatic resistance when personal security is threatened.[39]

Iannaccone states that primary groups of teachers in a faculty form a complex structure knit by articulations and bridges. There may be an occasional primary group which is isolated from the rest of the groups in the school. Similarly, there may be individual teachers who do not regularly interact with other teachers and who are not part of any primary group in the school. Indeed, the extra-legal nature of such groups permits people to remain outside them if they choose. The same extra-legal nature permits the group to choose

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[39]Gale E. Jenson, "The School as a Social System," Educational Research Bulletin, XXXIII (February 1, 1954), p. 46.

its members also.[40] Iannaccone continues by stating that such groups of teachers may readily present a united front when confronted with common vexations; and it would be surprising if such groups and the interactions which may occur in and between these groups were not used by teachers to facilitate cooperation. In particular, it should be expected for these interaction linkages to be useful in achieving mutual support for dealing with common problems when the source of vexation lies in the legal power structure or when proposed solutions to problems take an extra-legal turn.[41]

Research Related to School Informal Groups

In a study involving four hundred and twenty-five classroom teachers in eighteen public schools, Law hypothesized that (1) informal groups exist, (2) they can be identified, (3) leadership patterns in the informal group are identifiable, and (4) the groups have a functional relationship to the formal organizational structure.[42] The results of the study supported three of the four hypotheses. However, there was not sufficient evidence to identify the leadership pattern of the informal groups.

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[40]Iannaccone, "Informal Organization of the School," p. 234.

[41]Ibid., p. 235.

[42]Lillard Eugene Law, "The Identification of Informal Groups and Informal Group Leadership in Selected Schools in Ohio" (Unpublished Ph.D. Dissertation, Ohio State University, 1962.)

Ingils, in an investigation designed to examine the relationship between teacher membership in informal faculty groups and teacher attitudes, values, and norms, was able to report some very important findings. The study was concerned only with attitudes, values and norms which directly related to the teaching profession. This work revealed that (1) the degree of group cohesiveness is a factor in the extent to which there is conformity of the individual's values and norms to the "real" group norms and (2) the degree to which a person is attracted to membership in an informal professional social group is not predictive of the degree to which that individual conforms to the "real" group norms or affects an individual's perception of the group norm.[43]

Using a sample of ten elementary schools with a total of two hundred and twenty-nine staff members (principals, teachers, nurses, librarians, and supervisors), Heller explored the relationship of the informal organization and perception of the organizational climate of schools. A total of forty informal groups was found within the ten schools. In only one of the groups was it shown that the perception of the existing organizational climate of a school was more similar within the group than the perceptions of the existing

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[43]Chester Ralph Ingils, "The Effect of Professional Informal Social Groups Upon Teacher Members' Attitudes, Values, and Norms" (unpublished Ed.D. dissertation, Stanford University, 1958).

organizational climate held by the total membership of the formal organization. Moreover, only ten of the forty informal groups showed more similarity among members in perception of desired climate of a school than the perceptions of the desired climate held by the total membership of the formal organization. Therefore, the study did not support a relationship of teacher informal groups and teacher perception of organizational climate.[44]

From a research report concerned with the discovery of possible ways and means to analyze the interrelationships of formal and informal aspects of organization, Berner was able to conclude that the formal structure of communication in a school is dependent on the presence of individuals who are active in fulfilling the responsibilities of their positions. In addition, the formal as well as the informal patterns of communications in a school may vary in accordance with the particular activity under consideration. The informal communication patterns seem to be affected by persons active in positions in the formal structure as well as by persons active in informal socializing. Lastly, holders of general administration positions may be key figures in the informal communication patterns of a school so long as they are active in informal socializing.[45]

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[44]Robert W. Heller, "Informal Organization and Perception of Organizational Climate of Schools," The Journal of Educational Research, LXI (May-June, 1968), 410-411.

[45]Marshall Keith Berner, "Development of Procedures and

A research project undertaken by Wills, examined the relationship in an educational organization between the teaching effectiveness of elementary school teachers and the frequency of contact they have with their colleagues. The following questions were studied: (1) Do teachers who are similar to their most significant colleagues in value orientation differ in teaching effectiveness from those who are dissimilar? (2) Do teachers who are similar to their most significant colleagues in geographical origin differ in teaching effectiveness from those who are dissimilar? and (3) Do teachers who contact their most significant colleagues daily differ in teaching effectiveness from those whose contact is only two or three times weekly or fewer? The population consisted of 132 elementary teachers from one school system.[46]

The results showed that teaching performance was not significantly related to the variables of the study. The evidence did indicate that those teachers who contacted their most significant colleagues only infrequently tended to have higher performance scores, but the difference was never enough to be significant.

Techniques for the Analysis of the Relationships between the Formal Organization of High School Systems and the Informal Communication Structures Within These Systems" (Unpublished Ed.D. dissertation, University of Illinois, 1957).

[46]Stanley Ewing Wills, "A Study of the Relationship Between Teacher Effectiveness and Contacts Among Faculty Members in an Elementary School" (Unpublished Ed.D. dissertation, Colorado State College, 1966).

Using two schools matched in size and population, but under different styles of administration, Congreve made an investigation based on the hypothesis that the formal-informal organization concept developed in industrial settings was not applicable to an enterprise which demanded a high degree of social interaction. Some of the conclusions were: (1) administrative behavior has an effect upon the informal organization of the staff; (2) there appears to be a definite relationship between leadership style and the informal organization of the school; and (3) teacher effectiveness does not appear to be greatly affected by the nature of the informal organization of the school. Unlike industrial organizations, where a direct relationship has been found to exist between the informal organization and productivity, no such relationship seems to exist in the school.[47] However, the findings in this study should be considered tentative because only two schools were examined.

Psychology of Expectations (Self-Fulfilling Prophecy)

The study of the influence of expectation upon thinking and behavior has been of interest to social scientists for many years in a variety of contexts. Though there are numerous studies related to the

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[47]Willard J. Congreve, "Administrative Behavior and Staff Relations," Administrator's Notebook (Chicago: University of Chicago, VI (October, 1957), No. 2.

notion that a person's attitude or expectation will affect his perceptions and responses, the research and literature regarding expectancy behavior (self-fulfilling prophecy) in education and psychology is scant. However, since Robert K. Merton's article in 1948 on "The Self-Fulfilling Prophecy," there has been more data and evidence accumulating which seem to substantiate its existence and impact.

Merton suggests that W. I. Thomas' writing of "if men define situations as real, they are real in their consequences," sets forth a theorem basic to the social sciences. The theorem provides an unceasing reminder that men respond not only to the objective features of a situation, but also and at times primarily, to the meaning this situation has for them. And once they have assigned some meaning to the situation, their consequent behavior and some of the consequences of that behavior are determined by the ascribed meaning. Consider the case of the examination neurosis. Convinced that he is destined to fail, the anxious student devotes more time to worry than to study and then turns in a poor examination. The initially fallacious anxiety is transformed into an entirely justified fear.[48]

If it is believed that war between two nations is inevitable, then, according to Allport, it is. Hence, when we say that "under

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[48]Robert K. Merton, "The Self-Fulfilling Prophecy," The Antioch Review, VIII (June, 1948), 193-195.

certain circumstances leaders can provoke and organize the people of a nation to fight," it is admitted that circumstances prevailing today make it tragically easy to fabricate a warlike spirit in the minds of men and to instill in them obedience to warlike leadership. The crux of the matter lies in the fact that while most people deplore war, they nonetheless expect it to continue. And what people expect determines their behavior.[49]

The superficial validity of the self-fulfilling prophecy perpetuates a continuation of error. "The self-fulfilling prophecy is, in the beginning a false definition of the situation evoking a new behavior which makes the originally false conception come true."[50] Rosenthal and Jacobson describe such an occurrence as how one person's expectation for another person's behavior can quite unwittingly become a more accurate prediction simply for its having been made.[51] To a great extent one's expectations for another person's behavior may be accurate because of knowledge of the past. But there is good reason to believe that another factor increases one's accuracy of interpersonal predictions or prophecies. The prediction may in itself be a factor in

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[49]Gordon W. Allport, "The Role of Expectancy," Tensions That Cause Wars, ed. Hadley Cantril (Urbana: University of Illinois Press, 1950), p. 43.

[50]Merton, "Self-Fulfilling Prophecy," p. 195.

[51]Robert Rosenthal and Lenore Jacobson, Pygmalion in the Classroom (New York: Holt, Rinehart and Winston, Inc., 1968), p. vii.

determining the behavior of other individuals.

Research Related to Expectancy Behavior

In a large industrial setting, Bavelas conducted a study which pointed up the self-fulfilling prophecy. His investigation involved a large number of female applicants who underwent an employment evaluation procedure. The foremen who were to supervise these employees were told that certain of the women scored high and certain scored low. Of course, what the foremen were told bore no relationship to the actual performances. Some time later the actual performance records and foremen's evaluations of the women were obtained. The foremen evaluated more favorably those workers who were believed to be superior. This much could be contributed to a simple "halo" effect in which the perception of the foremen was affected by their expectation. Not so simply interpreted was the finding that the objective production record of the workers was superior if the foremen had expected superior performance. This could not be attributed to a simple "halo" effect, but rather to impersonally self-fulfilling prophecy. Interestingly, there was no relationship between actual test scores and the foremen's evaluation or the objective production record.[52]

Levy and Orr analyzed 168 studies which had been conducted

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[52]Ibid., p. 6, citing A. Bavelas, Personal Communication, December, 1965.

to establish the validity of the Rorschach ink-blot technique of personality assessment. Each of these studies was categorized on the following dimensions: (1) whether the affiliation of the author was academic or non-academic; (2) whether the study was designed to assess construct (indirect) or criterion (direct) validity; and (3) whether the outcome of the study was favorable or unfavorable to the hypothesis of Rorschach validity. The results showed that academicians, more interested in construct validity, obtained outcomes relatively more favorable to construct validation and less favorable to criterion validation.[53]

Lawson, using 198 randomly selected college students, studied the effects of expectancy on incidental learning. It was hypothesized that expectancy statements presented before exposure to the materials to be learned, after exposure to the materials, and an interaction of the before and after conditions, would all influence learning test scores. Relevant incidental learning was also predicted to exceed irrelevant learning. The results indicated that pre-learning statements designed to induce expectancies for high intentional and low incidental learning significantly increased intentional learning scores and significantly decreased irrelevant incidental learning scores.

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[53]Leon H. Levy and Thomas B. Orr, "The Social Psychology of Rorschach Validity Research," Journal of Abnormal and Social Psychology, LVIII (January, 1959), 79-83.

However, relevant incidental learning was not affected significantly. As predicted, relevant incidental learning did exceed irrelevant incidental learning.[54]

Using a sample of 78 undergraduate male students, Jakubowski designed a study to accomplish two purposes: (1) to test the hypothesis that expectancies are communicated through contingent social reinforcement and (2) to develop a less restricted experimental situation which would permit a closer analysis of how expectancies operate. Two groups of examiners heard stories in response to four picture cards. Of the two groups, one-third was reinforced consistent with their expectations, and one-third was not reinforced. The results showed that the examiners in the inconsistent groups altered the channel by using contingent social reinforcement less accurately.[55]

Rosenthal and Halas, in a study designed to determine the extent an experimenter might affect research, asked the following questions: (1) do different experimenters obtain significantly different behavior from invertibrate samples, and (2) do different experimenters

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[54]Arthur Gomez Lawson, "The Effects of Expectancy on Incidental Learning" (unpublished E.D. dissertation, Temple University, 1968).

[55]Patricia Ann Jakubowski, "Expectancy and the Effects of Consistent and Inconsistent Contingent Social Reinforcement" (unpublished Ed.D. dissertation, University of Illinois, 1968).

obtain significantly different degrees of behavioral modification from their invertebrate samples? The data results suggested that different experimenters obtained different levels of performance from their invertebrate samples.[56]

A study by Larrabee and Kleinsasser investigated the effects of an examiner's expectancies on subjects taking a standardized test of intelligence. One examiner was told that the subjects had above-average intelligence, and another examiner was told that the subjects had below-average intelligence. The influence of examiner expectancy was significantly biased in the direction of the instructions.[57]

Another experiment concerning expectancy was done by Stanton and Baker, where interviewers were led to expect different replies from their subjects. The results indicated that the bias of the interviewer exerts some determining effect upon the outcome of the interview. This was the case even when the interviewer was experienced, the direction of the bias was known to him, and the

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[56]Robert Rosenthal and Edward S. Halas, "Experimenter Effect in the Study of Invertebrate Behavior," Psychological Reports, XI (August, 1962), 251 and 255.

[57]L. L. Larrabee and F. Kleinsasser, "The Effect of Experimenter Bias on WISC Performance." Unpublished paper. (St. Louis, Missouri: Psychological Associates, 1967), cited by Scott Woodrow Kester, "The Communication of Teacher Expectations and their Effects on the Achievement and Attitudes of Secondary School Pupils," (Unpublished Ph.D. dissertation, The University of Oklahoma, 1969).

material had no personal or emotional connotation.[58]

Literature and Research Related to Teacher Expectations About Student Achievement

One way in which we learn who we are comes from how others react to us. A powerful but subtle force influencing our actions is the behavior expected of us. When others view us in a particular light, we are prone to act upon their perception of us. Eventually, we may become that person whom others expected us to be. The interaction is both subtle and complex, for the perceiver both finds what he is looking for, and in part constructs the environment so that he gets the behavior he is expecting.

This self-fulfilling prophecy concept may be at work in educational settings across the country. Recent research as presented evidence that teachers may be altering student performance by prophesying student academic behavior and internalizing these prophecies. Rosenthal and Jacobson explored the effect of teacher expectations with experiments in which teachers were led to believe at the beginning of a school year that certain of their pupils could be expected to show considerable academic improvement during the year. Within each of eighteen classrooms of a school in a somewhat run-down

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[58]Frank Stanton and Kenneth H. Baker, "Interviewer--Bias and the Recall of Incompletely Learned Materials," Sociometry, V (February, 1942), 134.

section of a middle-sized city, an average of 20 percent of the children were reported to teachers as showing unusual potential for intellectual gains. All students at the beginning of the school year were given a standardized intelligence test under the guise of a test designed to predict academic "blooming" or intellectual gain. The names of the "spurters" were randomly chosen. The experimental treatment of children involved nothing more than giving their names to their new teachers as children who could be expected to show unusual intellectual gains in the year ahead. Therefore, the difference between these children and the undesignated children who constituted a control group was entirely in the minds of the teachers. The results indicated strongly that children from whom teachers expected greater intellectual gains showed such gains. The gains, however, were not uniform across the grades. At the end of the first year the largest gains were among children in the first and second grades. In the second year the greatest gains were among the children who had been in the fifth grade when the "spurters" were designated and who by the time of the final test were completing sixth grade.[59] Teachers of the "potential spurters" described them as more interesting, more appealing, better adjusted, more affectionate, more curious and happier.

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[59]Robert Rosenthal and Lenore F. Jacobson, "Teacher Expectation for the Disadvantaged," Scientific American, CCSVIII (April, 1968), 22.

Another interesting point stated by Rosenthal and Jacobson was that the evidence revealed that the most unfavorable ratings were given to the children in low-ability classrooms who gained the most intellectually. Even when the slow-track children were in the experimental group, where greater intellectual gains were expected of them, they were not rated as favorably with respect to their control-group peers as were the children of the high-track and the medium-track. Evidently it is likely to be difficult for a slow-track child, even if his I.Q. is rising, to be seen by his teachers as well adjusted and as a potentially successful student.[60] Weintraub suggests that children having been designated as slow learners, emotionally disturbed, perceptually handicapped and culturally disadvantaged, have served as a mind-set in that a poor or failure performance is expected.[61]

This mind-setting can have very negative effects and should be avoided. Berns writes that regardless of students' handicaps, they generally "make the grade." In addition, they may be inspired to do even better if they are encouraged and made to realize that human beings possess enormous and wonderful potentialities. The underlying construct of this concept is "belief" in students. This is not found as an element of pedagogical course, but its role

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[60] Ibid.

[61] Samuel Weintraub, "Teacher Expectation and Reading Performance," The Reading Teacher, XXII (March, 1969), 557.

in the teaching process cannot be over-estimated.[62]

Teachers often hold negative attitudes, low expectations, and stereotypes for whole groups and classes of students. Mill asserts that because there are always students and parents in these groups and classes who have a positive outlook toward school and desire education, stereotyping must be avoided. Therefore, teachers must remain alert for the golden nuggets which exist in any group and help them to achieve educationally.[63]

What teachers believe about students and the impact of these beliefs on student achievement have also been reported in a recent study by Palardy. This investigation, based on the rationale of the self-fulfilling prophecy, attempted to determine whether teachers reported beliefs about first-grade boys' probable success in reading had any significant effect on the measured achievement in reading that the pupils in their classes attained. Of particular interest was the effect of these beliefs on the boys' achievement. The findings indicated that when first grade teachers reported they believed that boys are far less successful than girls in learning to read, the boy pupils of those teachers did achieve less well on a

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[62]Sylvia A. Berns, "We Must Believe in Our Students," Business Education World, XXXIX (May, 1959), 28.

[63]Cyril R. Mill, "Attitudes Affect Pupils Learning," Educational Leadership, XVII, (January, 1960), 215.

standardized reading test than a comparable group of boy pupils whose teachers reported that boys are as successful as girls in learning to read.[64]

Before proceeding further with research data about the effects of teacher expectations (self-fulfilling prophecy) it should be noted that concerns and some controversy have been raised regarding conclusions by Rosenthal. Some of the concerns which have been raised are as follows:

> The publication Pygmalion in the Classroom is an extension of work done by Rosenthal and others on a concept called the experimenter bias effect. The confusion about the contribution made by Pygmalion has recently been joined by confusion about the experimenter bias effect itself. Barber and several others report five unsuccessful attempts to replicate the original Rosenthal work . . . Barber concludes that "the experimenter bias effect is more difficult to demonstrate than was implied in several recent reviews, and further research is needed to determine what preconditions are necessary to obtain the "effect." The expectancy factor subsumed in the experimenter bias effect is not as pervasive as the earlier work of Rosenthal and the Pygmalion manuscript would have us believe.
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> Thorndike questions the adequacy of the measuring instrument when used at the first and second grades, the levels at which Rosenthal and Jacobson found significant effects. Neurmberger cites the fact that the teachers were told the names of the "special" students at the start of the school year, yet could not remember who they were at the end. Buckley indirectly indicates that the investigators did not systematically examine

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[64]Michael Palardy, "What Teachers Believe--What Children Achieve," The Elementary School Journal, LXIX (April, 1969), 370-374.

> the nature of the treatment as applied by the teachers. . . . The teachers, not the students, were the ones who received the experimental treatment. The investigators did not examine the nature in which they in turn applied that treatment to their students. Thus the analysis ought to have used class means as the statistic rather than the individual student's gain score.[65]

Although these may be legitimate concerns, they in no way discredit the idea that experimenter bias effect is operative and that teacher expectancy does affect students.

A study by Flowers was designed to determine whether or not there would be an observable difference in the achievement of disadvantaged students after they had been taught by teachers who were led to believe they had higher tested achievement or ability. It was hypothesized that if students in one of two groups of students with similar tested ability and achievement were placed in higher level classes and taught for a year they would surpass the other group of students in tested achievement. Despite findings of a significantly higher achievement (.05) level in the larger school and a higher achievement trend in the smaller school for the experimental groups, it was concluded that the hypothesis was not supported. The investigator thought the manipulated variable was of itself insufficient to overcome other variables such as differences in

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[65]William J. Gephart and Daniel P. Antonoplos, "The Effects of Expectancy and Other Research-Biasing Factors," Phi Delta Kappan, L (June, 1969), 579-580.

communities, school populations, teacher styles, etc. That the upward trend in achievement for the experimental groups was related to teacher expectation seemed possible in light of the findings from the questionnaire which showed that teachers favored the "high" ability groups.[66]

Two of the four purposes of a study by Haskett were: (1) to investigate the relationship between teacher expectancy and pupil's academic achievement, and (2) to explore teacher expectancy with respect to factors which might influence it to seek indications of the self-fulfilling prophecy in teacher attitude toward pupil achievement and to index teacher behaviors that relate to expectancies for pupils. Thirty-six special education teachers and their 267 students participated in the study. Videotaped observations were made to study the relationship between stated expectancies and their behavioral expression in the classroom. High and low expectancy behaviors and time devoted to individual pupils were compared with predicted gains in achievement. In general, it was concluded that teacher expectancy and pupil performance were closely related. Pupil performance will tend to follow the direction of teacher expectancy even when the

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[66]Charles Edward Flowers, "Effects of an Arbitrary Accelerated Group Placement on the Tested Academic Achievement of Educationally Disadvantaged Students," (Unpublished Ed.D. dissertation, Columbia University, 1966).

expectancy is not based on fact.[67]

Pitt undertook an investigation to ascertain the possible advantages and disadvantages of the classroom teacher's use of pupil I.Q.'s. The investigation included 23 teachers and 165 fifth grade boys with average or above average I.Q. as indicated by a standardized test. At the end of a six-month period the results showed that teachers' knowledge of pupils' I.Q.'s is related to higher teachers' marks for pupils whose reported I.Q.'s are considerably higher than teachers expect. Corresponding changes were not shown in standardized test achievement.[68]

Kester designed a study to: (1) explore the means by which teachers communicate their expectations about pupil achievement to their pupils, and (2) determine the extent of the effects of the teachers' expectations on pupil attitudes toward school-related concepts and pupil achievement in the language arts and mathematics. The sample consisted of 150 seventh grade students of average ability as measured by a standardized test, and 23 teachers. Half of the students were assigned to the experimental group and half to the control group.

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[67]Mary Sheila Haskett, "An Investigation of the Relationship Between Teacher Expectancy and Pupil Achievement in the Special Education Class" (Unpublished Ph.D. dissertation, the University of Wisconsin, 1968).

[68]Clifford Caplin Vivian Pitt, "An Experimental Study of the Effects of Teachers' Knowledge or Incorrect Knowledge of Pupil I.Q.'s on Teachers' Attitudes and Practices and Pupils' Attitudes and

The teachers were informed of the supposedly "bright" students from the experimental group. The results showed that there was little evidence to indicate that teacher expectations affect pupil performance at the junior high level. However, only one third of the teachers who worked with the youngsters expected something special from them. Findings did show that teachers behave differently toward those pupils whom they consider to be only average in intellectual ability. Teachers were more friendly, encouraging, and accepting of the allegedly brighter students. In addition, more time was spent communicating to their "superior" pupils.[69]

Attempting to partially replicate the work of Rosenthal and Jacobson, Claiborn predicted that raising the teacher's expectation of intellectual potential of certain pupils would result in: (1) I.Q. increase for those children, and (2) changes in teacher behavior toward those particular children. The findings did not support the first prediction. Although teaching practices did change as a result of the experimental treatments, there was no clear evidence to suggest that the differences were consistent across teachers or students. Variables other than teacher expectancy

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Achievement" (Unpublished Ph.D. dissertation, Columbia University, 1956).

[69]Scott Woodrow Kester, "The Communication of Teacher Expectations and Their Effects on the Achievement and Attitudes of Secondary School Pupils."

of intellectual potential seem more important in determining pupil performance and teacher-pupil interactions.[70] It should be noted that the experiment lasted only two months; maybe this was an insufficient amount of time so that the hypotheses could be supported.

Summary

The recognition of the existence of an informal organization within a formal organization is not a new concept to organizational theory. An opulence of material has been written regarding its behavior in formal structures. As a result of research in industrial and business settings many notions have developed concerning work groups, cliques and informal groups in general. The discipline of sociology has contributed heavily to crystalization of many informal group concepts about group formation and behavior. A fundamental idea related to informal group functioning within formal structures is that they can work to achieve or retard management's goals, or simply be neutral. Frequently these groups operate to decrease organizational output.

Of late, research has been on a slight incline regarding teacher expectations and how this attitude can and does affect students' academic achievement. Teacher expectations as a

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[70]William Longshore Claiborn, "An Investigation of the Relationship Between Teacher Expectancy, Teacher Behavior and Pupil Performance" (Unpublished Ph.D. dissertation, Syracuse University, 1968).

component of teacher behavior can be viewed as a conscious or unconscious form of output. Therefore, informal groups of teachers may possibly react similarly to some industrial and business work groups.

Few attempts have been made to study behavior patterns of informal groups of teachers within the public school organization. Those efforts, at least to the author's knowledge, did not give attention to the variables of informal group behavior and teacher expectations. For this reason, research related to these social-psychological variables appears to be needed.

CHAPTER III

RESEARCH DESIGN: SAMPLE, PROCEDURE, INSTRUMENTATION, TREATMENT OF DATA

Presently, little research attention has been given to the influence of the informal organization operating within schools. Moreover, research concern for the impact of teacher expectations on student achievement has been very slight. Consequently, this study was designed to determine if teacher informal group membership does in fact influence a teacher's level of expectations, and, if the level of teacher expectations in a school is related to the overall performance of students in the school. A major consideration in the design of the investigation was the determination of the data source and the manner in which the data were acquired. The difficulty of controlling the variables which affect teacher expectation was recognized. The questions of the study suggested that the population consists of teachers in schools which had high achievement and teachers in schools which had low achievement; and that schools comprising both levels be non-heterogeneous in school achivement. All of the eighty-seven elementary

schools (grades K-6) of an urban school district were considered as the total population.

Another consideration regarding the design of the study was that of determining the sample size to be drawn from the population. Because the study dealt with examining teachers within schools as an individual unit, attention was given to determining the sample size of schools needed rather than the total number of teachers. An acceptable minimum sample size for this situation would be 10 percent of the total population. Hence, the required number of schools would be approximately nine. In order to guarantee a sufficient sample size, fourteen elementary schools were used in the investigation.

The "Metropolitan Achievement Test" and the "Comprehensive Tests of Basic Skills" were administered annually to fourth and sixth graders respectively in all elementary schools; and the mean raw score for each school in all areas of the test batteries were computed. Standard scores, stanines, and percentiles based on national norms were derived from the mean raw scores. The basis for determining the achievement level of the schools centered around the performance results of students on those two test batteries. Skill areas of "Reading Comprehension" and "Arithmetic Problem Solving" from the fourth grade test battery, and "Reading Comprehension" and "Arithmetic Application" from the sixth grade test battery were used to determine achievement performance of schools. An examination of

test results in these skill areas for all schools used in the survey showed a stanine range from 3 to 6 with a variety of combinations exhibited. The only exception was one school which showed a stanine of 2 in "Arithmetic Problem Solving." Table 1 shows the achievement level and achievement characteristics of each school chosen for the study.

Based on national norms a stanine of 2 is low level, 3--well below average, 4--slightly below average, 5--average, 6--slightly above average, and 7--well above average. Those schools which had a stanine of 6 in each skill area for both grades, or a stanine of 5 in each skill area for one grade and a stanine of 6 in each skill area for the other, were classified as high achieving schools. Schools which had a stanine of 5 in each skill area for one grade and a stanine of 4 in each skill area for the other, or a stanine of 3 in each area for both grades were classified as low achieving schools.

Pursuing these criteria, evidence suggested that the partitioning of the high and low levels would be beneficial. Consequently, both levels were divided into two parts. The resultant division produced the following levels: "high high," "high low," "low high," and "low low." Further scrutinization of test results revealed four schools in the "high high" category, eight in the "low high," six in the "high low," and twelve in the "low low" category. The remaining schools had a mixture of stanine occurrences and did not satisfy the given category

TABLE 1

ACHIEVEMENT LEVEL AND ACHIEVEMENT CHARACTERISTICS OF SCHOOLS

Achievement Level	School	Reading Comprehension Stanine (Mean Raw Score)	Arithmetic Problem-Solving Stanine (Mean Raw Score)	Reading Comprehension Stanine (Mean Raw Score)	Arithmetic Application Stanine (Mean Raw Score)
High	A	6(31.0)	6(22.0)	6(36.1)	6(16.1)
High	B	6(30.1)	6(22.4)	6(34.6)	6(16.1)
	C	6(28.9)	6(21.3)	6(35.3)	6(15.9)
	D	6(28.7)	6(21.8)	6(35.4)	6(15.7)
Low	E	6(29.5)	6(22.7)	5(33.4)	5(15.2)
High	F	6(29.7)	6(22.8)	5(34.0)	5(15.4)
	G	6(30.0)	6(23.3)	5(32.3)	5(15.3)
High	H	5(22.5)	5(16.3)	4(27.1)	4(12.5)
Low	I	5(21.8)	5(16.3)	4(25.3)	4(12.0)
	J	5(21.9)	5(15.8)	4(27.3)	4(12.2)
Low	K	3(14.8)	3(10.0)	3(19.9)	3(8.9)
Low	L	3(15.3)	3(9.3)	3(19.4)	3(7.9)
	M	3(13.8)	3(9.1)	3(18.2)	3(8.8)
	N	3(14.1)	3(8.2)	3(19.7)	3(8.1)

criteria.

All four schools in the "high high" category were chosen to comprise a part of the sample. Three schools from "low high," three schools from "high low," and four schools from "low" categories were randomly selected. These fourteen schools formed the sample for this investigation.

Procedure of the Study

Permission was requested, and approval granted by the Director of Research, Research Committee, Director of Elementary Education, and the principals of the fourteen schools to conduct the study. Principals sought and gained participation approval of teachers in each school. The faculty size and student body composition of the selected schools are shown in Table 2.

Following is a detailed description of the method employed for collecting data.

In individual conferences with the principals, the basic nature of the study was explained. The instruments used were thoroughly discussed during the session, and the principals were asked to use their influence to secure complete cooperation from teachers. It was suggested that the better method for administering the instruments would permit the investigator to meet with the faculty for a twenty-minute period. This suggestion was followed by nine principals. The other

TABLE 2

FACULTY SIZE AND STUDENT BODY COMPOSITION

School	Size of Faculty	Size of Student Body	Number of Negro Students	Percent of Negro Students
A	19	611	0	0.0 %
B	19	502	3	0.5
C	26	828	0	0.0
D	13	386	30	7.7
E	18	545	0	0.0
F	17	488	2	0.4
G	17	455	0	0.0
H	18	537	151	28.1
I	16	461	99	21.4
J	25	770	0	0.0
K	29	842	838	99.6
L	14	341	56	16.4
M	23	626	606	96.9
N	22	570	569	99.9

five preferred to distribute and collect the individual packets from teachers themselves. (Principals who followed this method were asked to have the data ready for pick-up one day following its receipt.) A date and time were scheduled during the conference for either of the agreed upon methods.

An individual packet for each teacher of a school was prepared. Included in the packet were: (1) a cover letter to teachers explaining the nature of the study, assuring anonymity, eliciting their involvement and requesting candor in responses (see Appendix A); (2) a copy of the Teacher Expectation Scale (for purposes of administration the title "Teacher Expectation Scale" was changed to "Affective Domain

Scale" to prevent biasness of teachers' responses); and (3) a Sociometric Form and personal Data Sheet.

Within schools which permitted the investigator to administer the instruments, the research project was briefly discussed with teachers and the necessary instructions were given.

Completed instruments were returned in the same packet issued each participating teacher. In schools where principals distributed and administered the instruments, additional written information and instructions for principals accompanied the packets. Completed instruments, in this case also, were to be returned in the same packets. This procedure was mandatory in that it allowed an individual's "sociometric" data to be attached to the "expectation" data.

In instances of teacher absence during instrument administration by either method, principals were instructed to have those teachers complete the questionnaires and return packets to principals no later than one day after receipt. These packets were picked up by the investigator within a week of the initial administration.

Table 3 depicts the number of teachers sampled, number responding, and response percentage.

Principals and teachers alike were informed that the identity of schools would not be revealed in the study. Hence, an alphabetical code was developed and used on the packets and instruments to insure that they were not inadvertently mixed. The schools in the study were

TABLE 3

SAMPLE RESPONSE

	Number
Number of teachers	276
Number responding	274
Percent of response	99.2 %

referred to as A, B, C, D, E, F, G, H, I, J, K, L, M, and N.

Instrumentation

Teacher Expectation Scale

In attempting to answer the fundamental question of the study of whether or not the informal organization significantly influences the expectation of teachers, an instrument to measure teacher expectations was developed. More specifically, the instrument was developed to determine teacher expectations about student achievement. The Likert method of summated ratings as described by Edwards[1] was the basic technique employed in constructing the attitude scale.

A large number of statements, both favorable and unfavorable,

[1]Allen L. Edwards, Techniques of Attitude Scale Construction (New York: Appleton-Century Crofts, Inc., 1957), pp. 149-162.

was compiled which related to the psychological object (statements were to be applicable for assessing teacher expectations regarding student achievement, students' ability to achieve, students' desire to achieve, etc.). These statements were submitted by thirty-one elementary school teachers, four education doctoral candidates, and the author. Afterwards, statements were reworked by the investigator in accordance with the criteria for attitude statements given by Edwards.[2] In all cases where alterations in wording were necessitated, a rigorous attempt was made to retain the precise meaning of the original statement.

The final group of statements, which consisted of 101, was submitted to a panel of twelve validating judges. Although the use of a panel of judges is not specified by Edwards as being a necessary step in the construction of a Likert scale, it was thought advisable to do so in order to strengthen the content validity of the instrument. The selection criteria for the judges were based on previous and/or present experience in education and knowledge of teacher education, attitude, and behavior (see Appendix C).

Prospective judges were contacted by letter (see Appendix A) requesting their consent to serve on the validating panel by judging whether or not the 101 statements represented an expectation attitude about student achievement and thus met the criteria, and by indicating

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[2] Ibid., pp. 13-14.

which statements were positive or negative. All twelve of the educators consented to perform the requested task. Items which were acceptable were to be agreed on by at least nine of the twelve judges as meeting the required criteria. Seventy such items, of which twenty-five were positive type and forty-five were negative type, received this agreement.

A pilot study was conducted to provide an item analysis of the seventy content valid statements. This study involved 108 elementary school teachers in another large school district. In accordance with Edwards'[3] suggestion, responses of the pilot study sample to the questionnaire were scored by the following method:

positive type statements	
strongly agree	4
agree	3
undecided	2
disagree	1
strongly disagree	0
negative type statements	
strongly agree	0
agree	1
undecided	2
disagree	3
strongly disagree	4

An item analysis as described by Edwards was performed using the *t* values of the upper and lower 22 percent of the preliminary sample to ascertain the discriminatory power of each item. The

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[3] *Ibid.*, p. 151.

formula for computing the t value when the number of each group is the same[4] is given below.

$$t = \frac{\overline{X}_H - \overline{X}_L}{\sqrt{\frac{\Sigma(X_H - \overline{X}_H)^2 + \Sigma(X_L - \overline{X}_L)^2}{n(n-1)}}}$$

where $\Sigma(X_H - \overline{X}_H)^2 = \Sigma X_H^2 - \frac{(\Sigma X_H)^2}{n}$

and $\Sigma(X_L - \overline{X}_L)^2 = \Sigma X_L^2 - \frac{(\Sigma X_L)^2}{n}$

For samples of 100 or more, provided, according to Edwards, that the high and low groups have at least twenty-five subjects, the minimum t value for acceptable discriminating items can be no less than 1.75.[5] Because the high and low groups of this preliminary sampling consisted of only twenty-four subjects each, the lower limit t value was raised to 2.00. The results of the item analysis for the seventy statements are listed in Appendix D. For each statement in the list a t value is also given. These t values for the items, representing item discriminatory power, ranged from -1.43 to 6.35.

The next step taken in the construction procedure deviates again from Edwards' procedure. However, the deviation was considered very necessary for additional validity, namely construct validity. Kerlinger suggests that the significant point about construct validity which sets it apart from other types of validity is its preoccu-

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[4]Ibid., pp. 152-153. [5]Ibid., p. 153.

pation with theory, theoretical constructs, and scientific empirical inquiry involving the testing of hypothesized relations.[6]

> In order to study the construct validity of any measure, it is always helpful to correlate the measure with other measures. Would it not be valuable to correlate a measure with a large number of other measures? How better to learn about a construct than to know its correlates. Factor analysis is a refined method of doing this. It tells us, in effect, what measures measure the same thing and to what extent they measure what they measure. In fact, factor analysis may be called the most important of construct validity tools.[7]

Therefore, the responses of the pilot sample of teachers were submitted for factor analysis using a Scientific Sub-routine Package 1130 Varimax Rotation computer program.

The thirty-one items which were tentatively accepted for the final instrument were accepted on the basis that they had an "absolute value" above .45 on the resultant rotated factor matrix and loaded on the same factor with at least two other items in the matrix. The thirty-one items which satisfied this criteria loaded on a total of eight factors and are shown in Table 4. Each of the eight factors was identified and labeled through an analysis of the eight clusters of items. The labels are: (1) inner desire to achieve; (2) concern for learning; (3) social class and achievement; (4) parental support; (5) innate weaknesses; (6) personal external characteristics; (7) inherent lack of

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[6]Fred N. Kerlinger, Foundations of Behavioral Research (New York: Holt, Rinehart and Winston, Inc., 1964), p. 449.

[7]Ibid., p. 454.

ability and (8) academic realities. It should be noted that all thirty-one items had a t value above 2.00 which satisfied the condition if item descrimination mentioned earlier (see Appendix D).

Before the thirty-one items were accepted for inclusion in the final instrument, the reliability was determined. The items were arranged in the order in which they were to appear in the instrument, and the technique of estimating the split-half coefficient of reliability as given by Stanley was employed.[8] The responses of the preliminary sampling to the accepted thirty-one items gave a reliability of .81. Applying the Spearman-Brown correctional formula produced a reliability of .89 for the total instrument. A brief summary of the reliability computation using Stanley's formula is shown below,[9] followed by the Spearman Brown correctional formula and computation as given by Guilford.[10]

$$r_{11} = 1 - \frac{D^2d}{D^2x} = 1 - \frac{382^2}{859^2} = 1 - .19 = .81$$

$$r_{tt} = \frac{2r_{hh}}{1 - r_{nn}} = \frac{2(.81)}{1 + .81} = \frac{1.62}{1.81} = .89$$

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[8]Julian C. Stanley, "A Simplified Method for Estimating the Split-Half Reliability Coefficient of a Test," Harvard Educational Review, XXI (Fall, 1951), 221-223.

[9]Ibid., p. 222.

[10]J. P. Guilford, Fundamental Statistics in Psychology and Education (New York: McGraw-Hill Book Co., 1965), pp. 457-458.

TABLE 4

ROTATED FACTOR MATRIX

Item No.	Factors I	II	III	IV	V	VI	VII	VIII
1	.23	-.11	-.48	.00	-.12	.05	-.33	-.30
3	.18	-.27	-.05	.07	-.24	.59	-.16	-.19
6	.05	-.11	-.35	.26	.02	.11	-.47	-.06
8	.03	-.13	-.01	-.02	.00	-.86	-.03	-.08
9	.20	.01	-.09	-.04	-.35	-.07	-.47	-.14
11	-.01	.07	-.01	.59	-.21	.08	.07	-.31
12	-.03	-.22	-.73	.00	-.08	-.08	-.06	-.08
17	-.01	-.05	-.12	-.03	.05	.01	-.21	-.58
20	.48	-.01	-.02	.00	-.32	-.19	-.19	-.09
21	.59	-.04	-.04	.29	-.07	.02	-.18	-.00
25	.69	-.08	.02	.18	.08	.04	.01	-.13
26	.52	-.22	.29	-.02	-.07	-.34	-.07	.02
30	.19	.12	-.08	.57	-.03	.15	-.17	-.12
31	.63	.08	.05	.22	.17	-.14	.08	-.02
34	.72	-.07	-.06	-.06	-.11	.16	-.11	-.01
38	.26	-.14	-.12	-.08	-.46	.01	-.02	-.11
40	.04	-.14	-.04	.13	-.05	.80	-.04	-.02
44	-.13	.03	-.61	.11	.04	.19	.02	.11
50	.09	-.15	.18	.11	.07	-.03	-.59	-.16
51	.21	-.04	-.15	.00	-.05	.02	-.73	.08
52	.64	.12	-.02	.06	-.03	.03	-.28	.02
53	-.04	-.10	-.01	.03	-.82	.02	.04	-.06
56	.08	-.03	.05	.29	.06	-.49	-.22	-.28
58	.07	-.68	-.01	.00	-.05	.00	-.01	.11
59	.07	-.65	-.03	-.09	-.09	.08	-.15	-.08
62	-.05	-.79	-.17	.08	.00	-.03	.00	-.13
63	.21	-.24	-.04	.71	.00	-.10	-.07	.01
64	.01	-.09	-.08	.10	-.78	.13	-.01	.03
68	-.11	-.48	-.14	.04	-.16	-.04	.01	-.06
69	.19	-.08	.04	.09	.07	.04	-.03	-.55
70	.02	-.07	-.07	.10	-.01	.01	.03	-.76

Because the reliability was well within the range of acceptance, the thirty-one items were used for the final instrument

(see Appendix B). Of the thirty-one items, eleven were positive-type and twenty were negative-type items. With the final scale possessing item discrimination, content and construct validity, and reliability, the use of it was thought to be justified for the purpose of this study.

Teachers participating in the study were asked to respond to each item according to a Likert-type continuum: strongly agree, agree, undecided, disagree, and strongly disagree. For scoring purposes weights of zero (strongly agree) to four (strongly disagree) were assigned to responses to negative items. The scoring procedure for positive items was reversed. Determination of an individual's expectation level was achieved by summing the weights for all items which produced a total score. Possible total scores on the instrument range from 0 to 124.

Sociometric Measure

The sociometric measure is designed to determine the amount of organization shown by social groups. In simplest terms, a sociometric measure is a means of assessing the attraction, or attractions and repulsions, within a given group. It usually involves each member of the group selecting a number of other persons in the group with whom he would like to engage in some particular activity and, further, a number of persons with whom he would not like to participate in the activity.

Lindzey and Borgatta suggest that some of the most important requirements of the sociometric test generally advocated by Moreno are:

> 1. The limits of the group should be indicated to the subjects. The sociometric test places no restrictions on the persons within the group who may be chosen or rejected.
> 2. The subjects should be permitted an unlimited number of choices or rejections. They should be encouraged to choose as many or as few of the group members as they wish.
> 3. The subjects should be asked to indicate the individuals they choose or reject in terms of specific criteria. Each sociometric choice or rejection should be made with a particular activity in mind which is meaningful to the subjects.
> 4. The subject should be permitted to make their choices and rejections without other members of the group being able toidentify the responses.
> 5. Members of the group should have been in association for a sufficient time to permit the formation of affective ties and repulsions in the group.[11]

Consistent with the foregoing information a sociometric instrument was developed for use in identifying the informal groups operating within the teaching staffs of each school. This instrument, designated as Sociometric Data Form-S (see Appendix B) consisted of five items:

> 1. Persons with whom you feel most free to discuss student achievement problems.
>
> 2. In your opinion, which teachers' views about students' capacity to achieve are

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[11]Gardner Lindzey and Edgar F. Borgatta, "Sociometric Measurement," Handbook of Social Psychology, ed. Gardner Lindzey (Cambridge, Massachusetts: Addison-Wesley Publishing Company, Inc., 1954), I, 407-8

most similar to yours?

3. Which teachers do you talk to most while at school?

4. Which persons on the list would you most likely turn for help with a school problem?

5. Which teachers, if any, do you see socially outside of school?

Following each item a list of numbers from one to n (n equals the number of teachers in a given school) and corresponding with the alphabetized list of teachers' names on a preceding separate page was provided. Teachers were instructed to respond to each item by circling the number(s) under the item which corresponded with the name(s) on the given list, and to circle as many numbers as necessary to accurately answer the item.

In terms of the validity of a sociometric test, Byrd concluded, as a result of research, that when sociometric items have real meaning to subjects there is insignificant change between choices on a test and life situational choices.[12] Hence, this instrument was believed to be valid because the choice criteria had reality value for teachers.

In addition to the two discussed instruments, a personal data form was developed to obtain information regarding sex, age,

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[12]Eugene Byrd, "Validity and Constancy of Choices in a Sociometric Test," Small Groups, ed. A. Paul Hare, Edgar F. Borgatta and Robert F. Bales (New York: Alfred A. Knopf, Inc., 1955), 289.

years of teaching experience, number of years at the school, certification level, teaching assignment, and marital status (see Appendix B).

Treatment of Data

Data obtained from the teachers' responses to the questions on the Sociometric Data Form were analyzed by a sociometric technique developed by Luce and Perry.[13] The technique involves the application of matrix multiplication to the analysis of sociometric data which permits determining the structure of the group by means of squaring and cubing the matrix. With this method it is possible to construct the social structure of a group going beyond the one-step (mutual choices) relationships between pairs of individuals. By applying matrix multiplication using the mutual choices of individuals, the existence of cliques can be determined.

The Sociometric Data Form and the Teacher Expectation Scale respectively measured the informal groups within the schools and the level of expectation teachers have for student achievement. These constituted the major variables of the study and were examined through the use primarily of parametric statistics. Kerlinger indicates that in most cases in education and psychology, it is probably safer--

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[13]R. Duncan Luce and Albert D. Perry, "A Method of Matrix Analysis of Group Structure," Psychometrika, XIV (March, 1949), 95-116.

and usually more effective--to use parametric tests rather than non-parametric tests.[14] In addition, he suggests the use of parametric statistics, as well as the analysis of variance, routinely, but to keep a sharp eye on the data for gross departures from normality, homogeneity of variance, and equality of intervals.[15] Hence, the analysis of variance was employed to measure the degree of dissimilarity, if any, between informal teacher group expectations and the expectations of the total formal organization.

The following formula for one-way classification of analysis of variance when samples are of unequal size is presented by Guilford.[16]

For the between sum of squares:

$$\sum n_s(M_s - M_t)^2 = \sum \frac{(\Sigma X)_s^2}{n_s} - \frac{(\Sigma X)^2}{N}$$

For the within sum of squares,

$$\sum x_s^2 = \sum (\Sigma X^2)_s - \sum \frac{(\Sigma X)_s^2}{n_s}$$

where n_s = number of cases in a specified set

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[14]Fred N. Kerlinger, Foundations of Behavioral Research (New York: Holt, Rinehart and Winston, Inc., 1964), p. 259.

[15]Ibid., p. 260.

[16]J. P. Guilford, Fundamental Statistics in Psychology and Education (New York: McGraw-Hill Book Co., Inc., 1956), pp. 266-267.

M_s = mean of that set

M_t = mean of all observations

For all expressions involving subscript s the summation is made over k sets.

The Spearman rank-difference correlation was applied to determine significant relationship between achievement level of schools and teacher expectations, and also for achievement level of schools and the number of informal groups. The following required formula as presented by Guilford[17] was used:

$$\text{Rho} = 1 - \frac{6 \sum D^2}{N(N^2-1)}$$

where $\sum D^2$ = sum of the squared differences between ranks and N = number of pairs of measurements.

To test for significant relationship between demographic variables and teacher expectations and demographic variables and informal group membership, the Chi-square method was applied. The basic formula for this method, as given by Ferguson,[18] follows:

$$\text{Chi-square} = x^2 = \sum \frac{(O - E)^2}{E}$$

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[17] Ibid., p. 287.

[18] George A. Ferguson, Statistical Analysis in Psychology and Education (New York: McGraw-Hill Book Co., Inc., 1966), p. 192.

where O = an observed frequency

E = an expected or theoretical frequency.

Hypotheses Tested

The following null hypotheses were tested related to the study:

Ho_1 There is no significant difference between the expectations held by members of an informal group within a school and the expectations held by the total membership of the school.

Ho_2 There is no significant difference between the homogeneity of expectations held by teachers of an informal group and the homogeneity of expectations held by the total membership of the school.

Ho_3 There is no significant difference between the expectations held by the members of all informal groups and the expectations held by all non-group individuals.

Ho_4 There is no significant difference between the expectations held by teachers within the informal organization (total informal groups) of a school and the expectations held by teachers who are not members of the school's informal organization.

Ho_5 There is no significant difference between the expectations of teachers in schools with high student achievement and

teachers in schools with low student achievement.

Ho_6 There is no significant difference between the expectations of teachers in schools with "high high" student achievement and teachers in schools with "low low" student achievement.

Ho_7 There is no significant relationship between the achievement level of schools and the expectation level of teachers in those schools.

Ho_8 There is no significant relationship between the achievement level of schools and the number of informal groups within those schools.

Ho_9 There is no significant relationship between membership in informal groups and non-membership according to age, years at the school, certification level, teaching assignment, race, and marital status.

Ho_{10} There is no significant relationship between the expectations teachers have according to age, years of teaching experience, certification level, teaching assignment, race, and marital status.

In order to show significance, the .05 level of statistical confidence was used for each hypothesis.

CHAPTER IV

PRESENTATION, ANALYSIS AND INTERPRETATION OF STUDY DATA

The purpose of this chapter is to provide a presentation and description of the statistical treatment, results, and interpretation of the study data which were collected from teachers in fourteen elementary schools of a large Oklahoma school district. Data tables were utilized to assist in depicting the statistical processes and results of the data. Each of the hypotheses is used to test the basic notions underlying the study problem and provide a commentary of the data contained in the study.

Two major variables, the first of which is the informal organization of groups, comprised this study. The informal groups and the non-membership group were identified and structured for all sample schools. A profile of the number and size of the informal groups within each school as determined by respondents' choices and matrix multiplication (see Appendix E) is presented in Table 5.

A total of forty-five informal groups were identified within the fourteen schools, with the number of groups per school ranging

TABLE 5

NUMBER AND SIZE OF INFORMAL GROUPS AND NON-GROUP MEMBERS IDENTIFIED IN EACH SCHOOL

School	Informal Group Size					Non-Group Members	Total Number of Groups
	1	2	3	4	5		
A	4	3	3			9	3
B	5	3				11	2
C	4	3	4	3		12	4
D	4					9	1
E	5	3	3			6	3
F	6	3	3			5	3
G	4	4	3			5	3
H	4	3	3			8	3
I	3	5				8	2
J	3	3	3	3		13	4
K	5	3	3	3	3	12	5
L	3	3	3			5	3
M	3	3	3	3	3	8	5
N	4	5	3	3		7	4

from one to five. Faculty size appeared to have some bearing on the number of informal groups operating within a school. The school with the smallest faculty had only one informal group and one of the schools with the largest faculty had five informal groups. One school had one informal group, two schools had two informal groups, six schools had three informal groups, three schools had four informal groups, and two schools had five informal groups.

Approximately 67 percent of the informal groups was comprised of only three members with the other informal groups consisting of four to six members. All schools with one exception had one or

more groups comprised of three members, and only three schools were void of a group having more than three members.

In addition to informal groups, all schools had a number of non-group members ranging from five to thirteen individuals. Three schools had five individuals detached from informal groups, three schools had eight individuals detached, two schools had nine non-group individuals,, and each of four schools had six, seven, eleven, and thirteen non-group individuals. In this instance also, faculty size appeared to have little or no bearing on the number of non-group individuals.

The second major or dependent variable was teacher expectations. This variable was measured by an attitudinal instrument which would produce a score ranging from zero (0) to 124. A profile of the teacher expectation level of each school resulting from the respondents of each school to the instrument is presented in Table 6.

The mean expectation score by schools ranged from 66.25 reported by school I to 76.68 reported by school G. Individual schools reporting the smallest and largest range of expectation scores were schools A and G respectively. In school A thirty-five points separated the lowest from the highest score, and in school G sixty-nine points separated the lowest from the highest. For the total study sample the scores ranged from thirty-one reported in school D to 115 recorded in school G.

TABLE 6

PROFILE OF EXPECTATION LEVEL FOR EACH SCHOOL

School	Number of Respondents	Mean Expectation Score	Range of Expectation Scores
A	19	71.63	52- 87
B	19	70.78	50-107
C	26	66.65	48- 95
D	13	71.15	31- 92
E	17	68.11	46- 89
F	17	71.76	51-107
G	16	76.68	46-115
H	18	71.22	50- 92
I	16	66.25	32- 86
J	25	72.04	51-104
K	29	75.44	56- 97
L	14	74.50	46-106
M	23	76.17	54-110
N	22	74.09	45- 98

Tests of Significant Differences in Teacher Expectancy

Hypothesis 1 states: There is no significant difference between the expectations held by members of an informal group within a school and the expectations held by the total membership of the school. A one-way classification of analysis of variance was used to determine if significant variance existed between and within informal groups and the non-membership group. A test to determine "significant deviations of set means from a population mean"[1] followed when the

[1]Guilford, Fundamental Statistics, p. 277.

analysis of variance statistic showed significance in any of the fourteen schools. Shown in Table 7 are the results of all schools for significance after analysis of variance.

TABLE 7

ANALYSIS OF VARIANCE FOR ALL INFORMAL GROUPS AND THE NON-MEMBERSHIP GROUP WITHIN EACH SCHOOL

	Between Groups	Within Groups	Treatment Groups	Total Sample
SCHOOL A				
Sum of squares	479.8823	958.2217	4	19
Degrees of freedom	3	15		
Mean square	159.9608	63.8814		
F ratio	2.5040			
SCHOOL B				
Sum of squares	506.3115	2790.8474	3	19
Degrees of freedom	2	16		
Mean square	253.1558	174.4280		
F ratio	1.4513			
SCHOOL C				
Sum of squares	33.2178	2488.6665	5	26
Degrees of freedom	4	21		
Mean square	8.3045	118.5079		
F ratio	0.0701			
SCHOOL D				
Sum of squares	251.3870	3718.3049	2	13
Degrees of freedom	1	11		
Mean square	251.3870	338.0276		
F ratio	0.7437			
SCHOOL E				
Sum of squares	2108.2642	455.4998	4	17
Degrees of freedom	3	13		
Mean square	702.7546	35.0384		
F ratio	20.0567[a]			

TABLE 7--Continued

	Between Groups	Within Groups	Treatment Groups	Total Sample
SCHOOL F				
Sum of squares	500.7583	2366.2993	4	17
Degrees of freedom	3	13		
Mean square	166.9194	182.0230		
F ratio	0.9170			
SCHOOL G				
Sum of squares	1549.8867	3245.5491	4	16
Degrees of freedom	3	12		
Mean square	516.6289	270.4624		
F ratio	1.9102			
SCHOOL H				
Sum of squares	101036.7500	241843.4375	4	18
Degrees of freedom	3	14		
Mean square	33678.9141	17274.5313		
F ratio	1.9496			
SCHOOL I				
Sum of squares	75.3251	2429.6746	3	16
Degrees of freedom	2	13		
Mean square	37.6626	186.8980		
F ratio	0.2015			
SCHOOL J				
Sum of squares	2924.6992	1322.2554	5	25
Degrees of freedom	4	20		
Mean square	731.1748	66.1128		
F ratio	11.0595[a]			
SCHOOL K				
Sum of squares	127.0387	2184.1328	6	29
Degrees of freedom	5	23		
Mean square	25.4077	94.9623		
F ratio	0.2676			
SCHOOL L				
Sum of squares	1825.3677	1618.1323	4	14
Degrees of freedom	3	10		
Mean square	608.4558	161.8132		
F ratio	3.7602[b]			

TABLE 7--Continued

	Between Groups	Within Groups	Treatment Groups	Total Sample
SCHOOL M				
Sum of squares	463.8015	3611.4995	6	23
Degrees of freedom	5	17		
Mean square	92.7603	212.4411		
F ratio	0.4366			
SCHOOL N				
Sum of squares	1311.1016	2016.7109	5	22
Degrees of freedom	4	17		
Mean square	327.7754	118.6301		
F ratio	2.7630			

[a]Significant beyond .01 level.

[b]Significant at .05 level.

The data reported in Table 7 indicates that only schools E, J, and L had F ratios that were significant at the .05 level or more and were statistically worthy of further examination. The fact that the other schools did not have significant F ratios suggests that the expectations of teachers within informal groups of those schools can be considered essentially no different from the expectations of the total faculty. The significance found in the F ratios of schools E, J, and L indicates that there is variance of expectations in and/or among the informal groups. Therefore, these three schools were examined to determine if significant deviations existed between the informal groups' expectation means and the expectation mean of the total faculty. The results of this examination for schools E, J, and L are shown in

Table 8.

The comparison of expectations of informal groups in Table 8 indicates that only schools E and J had one informal group which deviated significantly from the total school faculty with regard to expectations. Informal group 2 of school E was significantly lower and informal group 1 of school J was significantly higher than the whole teaching staff of the schools.

With only three of fourteen schools showing significance after the analysis of variance test, and only two groups out of ten in those schools showing significance, hypothesis 1 could not be rejected. Further examination of the study data indicated that twenty-four of the forty-five informal groups (or slightly above 53 percent) had lower mean expectation scores than did their respective faculties. Eight of the fourteen non-group groups had mean expectation scores above their respective faculties. Although, as it has been shown, these variations were not statistically significant, the trend is worth noting. The failure to reject the hypothesis may suggest that the social interaction between elementary school teachers in informal groups is not intense enough to effect their expectations.

Hypothesis 2 states: There is no significant difference between the homogeneity of expectations held by teachers of an informal group and the homogeneity of expectations held by the total membership of the school. One-way classification of analysis of

TABLE 8

EXPECTATION COMPARISON OF INFORMAL GROUPS WITH TOTAL FACULTY

Informal Group	Group Mean	Grand Mean	Mean Square Within Groups	Standard Error	t Ratio (df)	Group Deviation
School E						
1	72.000	68.110	35.0384	2.645	2.160 (13)	3.890
2	47.000	68.110	35.0384	3.417	3.012 (13)	-21.110[a]
3	62.666	68.110	35.0384	3.417	2.160 (13)	- 5.444
School J						
1	95.333	72.040	66.1128	4.691	2.845 (20)	23.293[a]
2	77.000	72.040	66.1128	4.691	2.086 (20)	4.960
3	76.000	72.040	66.1128	4.691	2.086 (20)	3.960
4	68.666	72.040	66.128	4.691	2.086 (20)	6.626
School L						
1	85.000	74.500	161.8132	7.344	2.228 (10)	10.500
2	58.666	74.500	161.8132	7.344	2.228 (10)	-15.834
3	64.333	74.500	161.8132	7.344	2.228 (10)	-10.167

df = degrees of freedom

[a]Significant beyond .01 level.

variance was used to test whether the expectations of informal group teachers were closer than the total faculty. Specifically, the variances of informal group scores were compared with the variance of the total faculty scores. The results of this comparison are given in Table 9.

TABLE 9

COMPARISON OF INFORMAL GROUP VARIANCES WITH TOTAL FACULTY VARIANCE BY SCHOOLS

	Variances					
School	Population	Group 1	Group 2	Group 3	Group 4	Group 5
A	68.88	101.99	111.99	142.33	-	-
B	174.42	157.00	10.33	-	-	-
C	118.50	41.99	76.33	52.66	21.00	-
D	338.02	104.25	-	-	-	-
E	35.03	36.49	3.00	56.33	-	-
F	182.02	140.96	1.33[a]	150.99	-	-
G	270.46	251.33	76.24	111.00	-	-
H	274.53	304.25	174.33	345.50	-	-
I	186.89	67.00	342.19	-	-	-
J	66.11	120.33	11.99	1.00[a]	217.33	-
K	94.96	61.19	107.99	4.33[a]	26.33	42.19
L	161.81	180.99	136.33	156.33	-	-
M	212.44	21.33	300.99	39.00	42.33	30.33
N	118.63	34.91	152.30	196.33	37.33	-

[a]Significant beyond .05 level.

Only three of the forty-five informal groups had variances significantly smaller than the variance of their respective total faculties. Consequently, the null hypothesis could not be rejected. The three informal groups which did have significantly smaller variances were

informal group 2 of school F, informal group 3 of school J and informal group 3 of school K. For the total sample, it can be said that the expectations of teacher informal groups do not differ significantly from the total faculty.

Hypothesis 3 states: There is no significant difference between the expectations held by the members of all informal groups and the expectations held by all non-group individuals. This hypothesis was tested using the F-test for difference between two means to determine if all informal group individuals and all non-group individuals vary significantly in expectations. Presented in Table 10 are the statistical outcomes of this test.

TABLE 10

THE F-TEST FOR DIFFERENCE BETWEEN TEACHER EXPECTATIONS OF AGGREGATE INFORMAL GROUP MEMBERS AND NON-GROUP MEMBERS

	Informal Group Members	Non-group Individuals	Between Groups	Within Groups
Number of teachers	156	118		
Mean score	72.26	71.63		
Sum of squares			86.246	46495.570
Degrees of freedom			1	272
Mean square			86.246	170.939
F ratio			.504	

The resultant F ratio was not significant at the .05 level. Therefore, the hypothesis could not be rejected. Based on this condition it can be stated that there is no statistical difference in expectations of the aggregate respondents in informal groups and those who are not.

Hypothesis 4 states: There is no significant difference between the expectations held by the teachers within the informal organization (total informal groups) of a school and the expectations held by teachers who are not members of the school's informal organization. Only three of the fourteen sample schools were eligible for testing this hypothesis based on the one-way classification of analysis of variance (refer to Table 7, page 88). The three schools were E, J, and L, which had significant F ratios. Depicted in Table 11 are the resultant values of the F-test for difference between means for all three schools.

TABLE 11

THE F-TEST FOR DIFFERENCE BETWEEN TEACHER EXPECTATIONS OF INFORMAL ORGANIZATION MEMBERS AND NON-INFORMAL ORGANIZATION MEMBERS

	Informal Organization	Non-informal Organization	Between Groups	Within Groups
School E				
Number of teachers	11	6		
Mean score	62.63	78.16		
Sum of squares			936.34	1627.39
Degree of freedom			1	15
Mean square			936.34	108.49
F ratio			8.630[a]	

TABLE 11--Continued

	Informal Organization	Non-informal Organization	Between Groups	Within Groups
School J				
Number of teachers	12	13		
Mean score	81.75	63.07		
Sum of squares			2177.40	2154.52
Degree of freedom			1	23
Mean square			2177.40	93.74
F ratio			23.24[b]	
School L				
Number of teachers	9	5		
Mean score	69.33	83.80		
Sum of squares			673.01	2770.50
Degree of freedom			1	12
Mean square			673.01	230.87
F ratio			2.915	

[a]Significant beyond .05 level.

[b]Significant beyond .01 level.

The results of this test showed that schools E and J had informal groups of teachers with significantly different expectations than the non-group teachers. School L did not show this occurrence at the .05 level. Schools E and L had informal group organizations which were larger than the non-group members as a group, and both of the expectation levels were lower than the expectations of the non-group members. In school J the number of teachers in the non-group was slightly larger than the informal and the expectation level of teachers was lower in that group. The data seems to indicate that in schools which show a significance in variance in and between

informal and non-group groups after the analysis of variance test, the larger of the informal or non-informal organization has the lower level of teacher expectation.

Hypothesis 5 states: There is no significant difference between the expectations of teachers in schools with high student achievement and teachers in schools with low student achievement. An F-test was used to determine the statistical variation if any between the expectations reported by all respondents in schools categorized as high achieving and those respondents in schools categorized as low achieving schools (refer to Table 1, page 65). The level of significance was established at .05. Depicted in Table 12 are the results regarding the difference in teacher expectancy.

TABLE 12

F-TEST FOR DIFFERENCE IN TEACHER EXPECTATIONS IN HIGH AND LOW ACHIEVING SCHOOLS

	High Achieving Schools	Low Achieving Schools	Between Groups	Within Groups
No. of teachers	127	147		
Mean score	70.85	73.17		
Sum of squares			366.627	42120.905
Degree of freedom			1	272
Mean square			366.627	154.856
F ratio			2.3675	

The obtained F ratio as a consequence of this test was not large enough for significance at the .05 level. The indications are

that teachers' expectations are not statistically different in high or low achieving schools when aggregatively considered. However, it should be noted that the distinction between some schools classified as high achieving and some as low achieving was not great. An interesting point to observe from Table 12 is that the mean score of teachers in low achieving schools was slightly higher than their counterparts in schools with high achievement.

Hypothesis 6 states: There is no significant difference between the expectations of teachers in schools with "high high" student achievement and teachers in schools with "low low" student achievement. The F-test for determining significant difference in mean scores was applied to test the hypothesis. Reported in Table 13 are the results of this test.

TABLE 13

F-TEST FOR DIFFERENCE IN TEACHER EXPECTATIONS IN HIGH HIGH AND LOW LOW ACHIEVING SCHOOLS

	High High Achieving Schools	Low Low Achieving Schools	Between Groups	Within Groups
No. of teachers	77	88		
Mean score	69.67	75.15		
Sum of squares			1229.831	24807.962
Degree of freedom			1	163
Mean square			1229.831	152.196
F ratio			8.0806[a]	

[a]Significant beyond .01 level.

Data in the preceding table indicates that teachers in the extreme lower level achievement schools had expectations significantly higher than the teachers in the top achievement schools. This evidence, coupled with the fact that teachers taken aggregatively in schools categorized as low achieving, had slightly higher expectations than their peers in high achievement schools, suggests that these teachers generally have better expectation attitudes concerning students. A point which might be expressed, however, is that these teachers may hold unrealistic expectations for students, or teachers in higher achieving schools may unconsciously internalize that their expectation attitude for students is meaningless. It should be noted that the four schools representing "high high" achievement were middle and upper middle class, three of which were predominantly Caucasian and the other was a desegregated school. Three of the four schools representing "low low" achievement were predominantly Negro and one was a desegregated school (refer to Table 1, page 65). Obviously, there are many factors which influence achievement, teacher expectations being one, and the implication of the data may suggest that the techniques and procedures employed in low achieving schools are inappropriate.

Test of Significant Relationships

Hypothesis 6 states: There is no significant relationship between the achievement level of schools and the expectation level of

teachers in those schools. The school achievement and teacher expectation ranks, and the correlation value resulting from the application of the Spearman rank-difference correlation coefficient test are shown in Table 14.

TABLE 14

SPEARMAN RANK-DIFFERENCE CORRELATION OF ACHIEVEMENT LEVEL OF SCHOOLS AND TEACHER EXPECTATIONS WITHIN THE SCHOOLS

School	Achievement Rank	Expectation Mean Rank	Difference	Difference Squared
A	1	8	-7	49
B	2	11	-9	81
C	4	10	-6	36
D	3	13	-10	100
E	7	12	-5	25
F	5	7	-2	4
G	6	1	5	25
H	8	9	-1	1
I	10	14	-4	16
J	9	6	3	9
K	11	3	8	64
L	12	4	8	64
M	14	2	12	144
N	13	5	8	64

Rho = -.498, significant beyond .05 level.

The results of this test indicated significant association between achievement level of the school and expectations of teachers within. The significant correlation, which was negative, indicates that as achievement level of the school increases the expectations of

teachers decreases. Normally, the rejection of a null hypothesis would support a predictive aspect of a theoretical model (see page 15). However, the negative correlation coupled with a significant difference of teacher expectations in low and high achieving schools (refer to hypothesis 5), indicates that one prediction of the study's model is not accurate. The model suggests that high expectations would be congruent with a high level of school achievement and also the converse.

Hypothesis 8 states: There is no significant relationship between the achievement level of schools and the number of informal groups within those schools. The Spearman rank-difference correlation coefficient test was used to examine possible association between the two variables. Shown in Table 15 are the ranks and test consequence.

TABLE 15

SPEARMAN RANK-DIFFERENCE CORRELATION OF ACHIEVEMENT LEVEL OF SCHOOLS AND NUMBER OF INFORMAL GROUPS WITHIN THE SCHOOLS

School	Achievement Rank	Expectation Mean Rank	Difference	Difference Squared
A	1	8.5	-7.5	56.25
B	2	12.5	-10.5	110.25
C	4	4.0	0.0	0.0
D	3	14.0	-11.0	121.00
E	7	8.5	-1.5	2.25
F	5	8.5	-3.5	12.25
G	6	8.5	-2.5	6.25
H	8	8.5	-0.5	.25
I	10	12.5	-2.5	6.25
J	9	4.0	5.0	25.00

TABLE 15--Continued

School	Achievement Rank	Expectation Mean Rank	Difference	Difference Squared
K	11	1.5	9.5	90.25
L	12	8.5	3.5	12.25
M	14	1.5	12.5	156.25
N	13	4.0	9.0	81.00

Rho = 1.493, significant beyond .05 level.

The significance level obtained from the correlation test permitted the rejection of the null hypothesis, therefore, allowing the conclusion that there is nonchance correlation between school achievement level and number of informal groups within schools. The negative correlation shown suggests that as the achievement level declines, the number of informal groups increases.

Tests of Significant Relationships According to Demographic Variables

Hypothesis 9 states: There is no significant relationship between membership in informal groups and non-membership according to age, years of teaching experience, years at the school, certification level, teaching assignment, race and marital status. The chi-square test for K independent samples was used to test each of the variables. The level of significance was set at .05.

Presented in Table 16 is a profile of the respondents according to their occurrence on each variable.

TABLE 16

DEMOGRAPHIC DEPICTION OF TOTAL RESPONDENTS

Variable	Respondents
Age	
20-39	131
40 or above	139
Teaching Experience	
1-8	143
9 or more	131
Years at the School	
1-7	203
8 or more	66
Certification Level	
Bachelor degree	183
Master degree or beyond	88
Teaching Assignment	
Kindergarten or primary	155
Intermediate	118
Race	
Negro	57
Caucasian	217
Marital Status	
Married	216
Unmarried	56

For test purposes the age variable was partitioned at thirty-nine years, with approximately 50 percent of the respondents in each partition. Teaching experience could also be considered evenly separated with eight years as the partition. The variables of years at the school and certification level were both partitioned unequally,

approximately three people to one had been at a school less than eight years, and about two people to one held less than a master's degree. Kindergarten and primary teachers comprised the majority of the teaching staffs in the sample schools. In terms of variable partitioning, race and marital status was four to one for Caucasians and married individuals.

The test of the age variable, as shown in Table 17, produced no significant relationship between age and informal group membership. Considering years at the school as a variable also showed no significant relationship with membership in informal groups. The results of that test variable are provided in Table 18.

TABLE 17

CHI-SQUARE TEST FOR AGE AND INFORMAL GROUP MEMBERSHIP

	20 - 39 years		40 or above	
In-group	77.5[e]	79[o]	77.5[e]	76[o]
Out-group	57.5[e]	56[o]	57.5[e]	59[o]

[e]Expected frequency. [o]Observed frequency. $X^2 = .14$

The data presented in Tables 17 and 18 indicates a failure to reject the null hypothesis. This suggests that generally age and the number of years at a school do not have a bearing on group membership, or at least not at these levels of partitioning. Scores on the

TABLE 18

CHI-SQUARE TEST FOR YEARS AT THE SCHOOL AND INFORMAL GROUP MEMBERSHIP

	1 - 7 years		8 or more	
In-group	117[e]	114[o]	38[e]	41[o]
Out-group	86[e]	89[o]	28[e]	25[o]

[e]Expected frequency. [o]Observed frequency. $X^2 = .737$

variables of certification level and teaching assignment are given in Tables 19 and 20 respectively.

TABLE 19

CHI-SQUARE TEST FOR CERTIFICATION LEVEL AND INFORMAL GROUP MEMBERSHIP

	Bachelor degree		Master degree or beyond	
In-group	104.6[e]	105[o]	50.3[e]	50[o]
Our-group	78.3[e]	78[o]	37.6[e]	38[o]

[e]Expected frequency. [o]Observed frequency. $X^2 = .007$

The chi-square scores were not significant, therefore the null hypothesis was not rejected. No significant relationship exists between certification level and teaching assignment, and certification level and informal group associations. It should be remembered that this test was for the aggregate informal group members, and not in

individual schools.

TABLE 20

CHI-SQUARE TEST FOR TEACHING ASSIGNMENT AND INFORMAL GROUP MEMBERSHIP

	Kindergarten/primary		Intermediate	
In-group	88[e]	86[o]	67[e]	69[o]
Out-group	67[e]	69[o]	51[e]	49[o]

[e]Expected frequency. [o]Observed frequency. $X^2 = .241$

The last two variables tested were race and marital status. The outcomes are provided in Tables 21 and 22 respectively.

TABLE 21

CHI-SQUARE TEST FOR RACE AND INFORMAL GROUP MEMBERSHIP

	Negro		Caucasian	
In-group	32.6[e]	25	124.3[e]	132[o]
Out-group	24.3[e]	32	92.6[e]	85[o]

[e]Expected frequency. [o]Observed frequency.

$X^2 = 5.30$, significant beyond .05 level.

The null hypothesis was rejected for the variable of race. Actually the data showed a significance level approaching .02. Therefore, a considerable relationship exists between race and informal

TABLE 22

CHI-SQUARE TEST FOR MARITAL STATUS AND INFORMAL GROUP MEMBERSHIP

	Married		Unmarried	
In-group	122.3[e]	117[o]	31.7[e]	37[o]
Out-group	93.7[e]	99[o]	25.0[e]	19[o]

[e]Expected frequency. [o]Observed frequency. $X^2 = 2.85$.

group membership. A point to note is that the study data was collected from teaching staffs, all of which were desegregated. As Negroes moved from the out-group to the in-group the proportion decreased; however, as Caucasians moved from out-group to in-group the proportion increased. Further examination of the data found that Negroes did belong to some informal groups but usually not desegregated informal groups.

The variable of marital status was not significant, consequently the null hypothesis was not rejected.

Although only the variable of race achieved significance, and marital status approached the required level of significance, other variables showed a relation to informal grouping when individual schools were considered. These variables were age, teaching assignment, and years at school.

Hypothesis 10 states: There is no significant relationship

between the expectations teachers have according to age, years of teaching experience, certification level, teaching assignment, race, and marital status. The median test using the chi-square method was applied in testing each of the variables. For this hypothesis the computed median was 72. For computational ease, 72 was included in the bottom group.

The variables of age and years of teaching experience were tested first by the given method. The results are shown in Tables 23 and 24 respectively.

TABLE 23

TEACHER EXPECTATIONS AND AGE AS REPORTED BY THE TOTAL RESPONDENTS

	20 - 39 years	40 or above
72 or below	55	81
73 or above	76	58

$X^2 = 6.52$, significant beyond .02 level.

The resulting chi-square for age was significant and the null hypothesis was rejected. There was a significant relation between teachers' age and their performance on the Teacher Expectation Scale. A further examination of the data showed that teachers' expectations decline as the ages of the teachers increase.

TABLE 24

TEACHER EXPECTATIONS AND YEARS OF TEACHING EXPERIENCE AS REPORTED BY THE TOTALITY OF RESPONDENTS

	1 - 8 years	9 or more
72 or below	57	83
73 or above	86	48

$X^2 = 14.182$, significant beyond .001 level.

Teachers' expectations and years of teaching experience were highly associated. The null hypothesis for teaching experience was rejected. Actually significance was found beyond the .001 level which implies a very high relationship. The data reveals that more years of teaching experience is associated with lower expectations for student achievement, particularly beyond eight years.

Considering the variables of certification level and teaching assignment on teacher expectancy, the null hypothsis was applied for rejection or failure to reject. In order to compare the variables on expectation attitudes, partitioning of teachers into two groups related to academic degree attainment and teaching level was performed. These two hypotheses could not be rejected at the .05 level of significance. Tables 25 and 26 reflect the frequency distributions for level of certification and teaching assignment.

The last two demographic variables tested were race and

TABLE 25

TEACHER EXPECTATIONS AND CERTIFICATION LEVEL AS REPORTED BY THE TOTALITY OF RESPONDENTS

	Bachelor degree	Master or beyond
72 or below	85	53
73 or above	97	37

$X^2 = 3.106.$

TABLE 26

TEACHER EXPECTATIONS AND TEACHING ASSIGNMENT AS REPORTED BY THE TOTALITY OF RESPONDENTS

	Kindergarten/primary	Intermediate
72 or below	75	62
73 or above	80	56

marital status. Tables 27 and 28 depict the statistical consequence of each variable.

TABLE 27

TEACHER EXPECTATIONS AND RACE AS REPORTED BY THE TOTALITY OF RESPONDENTS

	Negro	Caucasian
72 or below	17	119
73 or above	40	98

$X^2 = 10.32$, significant beyond .01 level.

TABLE 28

TEACHER EXPECTATIONS AND MARITAL STATUS AS REPORTED BY THE TOTALITY OF RESPONDENTS

	Married	Unmarried
72 or below	110	27
73 or above	107	28

$X^2 = .003$.

For the variable of race the null hypothesis was rejected at the .01 level of confidence. There is a statistically significant relationship between the racial group and teacher expectancy related to student achievement. The findings indicate that a larger percentage of Negro teachers were in the upper 50 percent of expectation scores than were in the lower 50 percent. Caucasian teacher scores showed the larger percentage in the lower range of scores. These data suggest that on a whole Negro teachers had higher expectations than did Caucasian teachers.

Marital status when considered as a variable related to teacher expectancy did not produce a value sufficient to be significant at the .05 level. Consequently a failure to reject the null hypothesis resulted. This variable had the lowest chi-square value of all, and suggests little or no relationship between teacher expectations.

Summary

The major findings of this investigation can be generally summarized as follows:

1. The number of informal groups which exist within a school appears to be related to the size of the faculty. Most of the informal groups were comprised of three members with the largest group having six members.

2. Teacher expectation level of schools, as measured by the mean test score, ranged from 66.25 to 76.68 which were all in the "low high" status of the expectation scale.

3. Significant differences were found in three of the fourteen schools between and within the informal group structure. However, only two of the schools had an informal group which had teacher expectations different from the total faculty. Although slight significant differences were found, over 50 percent of the informal groups had lower expectations than the total staff.

4. Three of the forty-five informal groups had expectations more similar than their respective faculties.

5. When considering the aggregate informal groups and the total non-membership group, there was not a significant difference between levels of expectations.

6. In two schools the expectations of teachers holding membership in the informal organization (the total informal groups) were significantly different from non-organizational members. Schools which had significant variance within and between groups, the larger of the informal or non-informal organization, had the lower level of teacher expectations.

7. Teachers in high and low achieving schools when aggregatively considered did not have significantly different expectations. However, when teachers in "high high" and "low low" schools were compared, there was very significant difference. The teachers in the "low low" achieving schools held higher expectations than their counterparts of "high high" achievement schools.

8. A significant relationship was found between achievement level of schools and expectations of teachers in those schools. As schools increased in achievement, the expectations of teachers in those schools decreased.

9. Significant relationship was found between the achievement level of schools and the number of informal groups which resided in the schools. When the achievement level of a school increased, the number of informal groups tended to decrease.

10. Giving attention to the demography of the study population, the majority of the teachers were forty years or more of age. Most teachers had teaching experience of less than nine years and three out of four had been at the school one to seven years. About one-third of the teachers had master's degree or beyond and most taught kindergarten or primary grades. Approximately 20 percent of the teachers were Negroes and four of five teachers were married.

11. Age of teachers did not show a significant relationship to informal grouping when aggregatively considered. However, age was significantly related to teacher expectations. As the age of teachers increased the expectations decreased.

12. Years of teaching experience was significantly related to teacher expectations when the total population was tested. The number of years at a school did not have a bearing on informal group membership using the totality of teachers.

However, when schools were individually considered, a relationship between informal clustering and years at the school did exist.

13. Certification level showed no significant relationship between informal grouping or teacher expectation; nor did teaching assignment reflect a relationship with teacher expectation or informal group membership.

14. The variable of race was significantly related to informal group membership and teacher expectations. Negro teachers tended not to belong to informal groups which had Caucasian teachers, even though each school faculty was desegregated. Caucasian teachers tended to have lower expectations than Negro teachers.

15. Marital status proved to have no relationship between informal group membership or teacher expectations.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

Organizational administration has become a very complex art and science, with the administration of educational organizations being no exception. As educational administrative theorists and practitioners have attempted to gain increased understanding of the organizational complexities within schools, movement into the behavioral sciences for additional knowledge has occurred. At one time it was believed that knowledge of the formal organization was sufficient in order to understand the functioning of an organization. However, it is presently recognized by most students of administration that knowledge of the formal organization alone gives only a partial picture of a functioning organization. The study and consideration of the informal organization with its intricate behavior system is required if administrators are to fulfill their tasks.

Numerous studies have been conducted concerning the relationship of informal groups and formal organizational goals. One of the most noted studies was performed by the famous Hawthorne

experimenters, which became known as the Bank Wiring Observation Room. Results showed small work groups retarding output. Informal groups however, do not necessarily suppress organizational goals, but may endeavor to enhance goals, or simply remain neutral. These groups develop their own practices, values, norms, and social relations as individuals interact with one another.

Factors influencing informal group development anywhere may also be seen in group formation of teachers. Iannaccone suggests that these groups dispose of social power in the schools and upon members of the informal group.[1] The behavior of group members is closely related to the value and attitude norms of the informal group. One such attitude among teachers, is expectation concerning student behavior, performance, or achievement. Recent research studies, particularly by Rosenthal and Jacobson have suggested that the notion of self-fulfilling prophecy is transferable to the teacher-student relationship. When teachers expected certain children would show increased academic gains, those children did in fact reflect achievement improvement. More specifically, it appears that favorable expectation of teachers can be responsible for gains in students' I.Q.'s and achievement. These gains are more dramatic in the

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[1]Iannaccone, "Informal Organization of the School."

lower grades.[2]

The major thesis underlying this study was that informal groups of teachers may behave similarly as small work groups frequently have in business and industry, in that these groups may consciously or unconsciously retard output and consequently subvert organizational goals. Recognizing the difficult, if not impossible task of measuring teacher output, teacher expectation was used and considered a precursor to output. Student achievement was viewed as an organizational goal, that is to say that one of the aims of the school is to improve the academic performance of students. Therefore, the primary problem of the investigation was to determine if informal groups within schools have a level of expectation that differs from the total faculty.

A model was developed based on the theory that the informal groups in a school would hold lower expectations for student achievement than the expectations held by the total teaching staff. In addition, from the model it was proposed that in schools which had low teacher expectations, these schools would generally achieve at a low level, while schools in which teachers held high expectations would be characterized by pupils with high achievement. The study also tested whether or not the expectations of teachers who were members of an informal group were more similar than the expectation held by the

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[2]Rosenthal and Jacobson Pygmalion in the Classroom, p. 98.

total faculty. A related part of the investigation was the examination of the effect of age, years of teaching experience, number of years at a school, certification level, teaching assignment, race and marital status on informal group membership and teacher expectations.

Required in this study was the development of an instrument to measure teacher expectations. This instrument was developed with the aid of a panel of judges to determine content validity of the items. Test reliability and construct validity were achieved by the Spearman-Brown split-half method and factor analysis respectively. A total of thirty-one items formed the final instrument.

A second instrument used in the study was a sociometric type questionnaire which asked teachers to make individual selections of teachers at their schools based on five questions. This instrument provided the sociometric data for the structuring of informal groups.

A method of matrix multiplication, developed by Luce and Perry,[3] for the structuring of informal groups was applied to the teachers' choices in each school. The teachers' choices were placed in a matrix and the mutual choices were identified. These choices formed a symmetrical sub-matrix which was squared and cubed. The resulting cubed matrix revealed the cliques within a school if any existed (See Appendix E). Observing the choices teachers made

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[3]Luce and Perry, "Matrix Analysis of Group Structure," 95-116.

provided the additional means of structuring the groups.

Teachers of fourteen elementary schools in a large urban school district of Oklahoma comprised the study sample. The nature of the investigation required the use of schools with different overall levels of achievement. Therefore, all of the elementary school selections were based on an achievement criterion and randomly chosen. The schools chosen represented approximately one-sixth of the elementary schools in the district.

Statistical procedures applied to the data were: (1) One-way classification of analysis of variance was used to determine whether expectation levels were different between informal group members, and non-group members and the total faculty, and to examine unlikeness between expectations of teachers in high achieving schools and teachers in low achieving schools; (2) the Spearman rank-difference correlation coefficient was used to test the relationship between schools ranked by achievement level and schools ranked by teacher expectancy; and (3) the Chi-square test for K independent samples was used to determine whether different samples of teachers differed in the frequency in which they belonged to informal groups predicated on age, teaching experience, number of years at the school, certification level, teaching assignment, race and marital status. The same basic method using the median test was employed with these variables to determine relationships to teacher expectations.

Conclusions

This investigation sought primarily to determine if the informal organization, as defined by informal groups existing within the formal organizational structure of the school, had a significant impact on the expectations of teachers. The evidence presented in this study rejects the notion that informal group membership in elementary schools has a meaningful effect on what teachers think about students' capacity to achieve. In other words, teacher expectations about achievement were unrelated to informal group membership. This finding might be attributed to the fact that the nature of the school's social organization requires in most cases that an individual interact with more than one or two persons. Moreover, elementary schools tend to have small faculties, as compared with other organizations or schools, and is therefore more conductive to interaction among the total staff. That conclusion is consistent with the research of Heller in which he attributes this failure to identify significant differences in informal group membership and teacher perceptions of the organizational climate, to the homogeneity of elementary school staffs and the size of the formal organization.[4] It can also be concluded that in elementary schools, informal groups do not restrict output as a result of lowering the expectations of their members. The professional

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[4]Heller, "Informal Organization," 411.

training which teachers receive probably prevents this occurance as in instances in business and industry. Informal groups in the school may function primarily as agents of emotional and psychological support for teachers, rather than as a means of restricting output. As the strain and tension resulting from school problems increase, particularly student achievement problems, the need for informal group association also increases.

Although there is a wealth of information regarding the impact of clique-type groups on the members' attitudes, norms and behaviors, this investigation did not support this concept related to teacher expectations. The conclusion is that expectation attitudes for student achievement which are transmitted through informal group communication networks, do not differ from other types of communication prevalent in the school. Generally, evidence supports the basic concept that informal groups in elementary schools do not behave as their counterparts do in other organizational settings.

The teachers in the "low low" schools had much higher expectations for student achievement than their peers in the extreme upper achievement school group. This contradicts the theory that teachers in "high high" achieving schools would have high expectations and teachers in "low low" achieving schools would have low expectations. Therefore, the theoretical model needs reconceptualizing.

As the achievement level of schools increases, the number

of informal groups decreases. It may be that the achievement of students satisfy teachers' emotional needs at school and little group support is required. While on the other hand, teachers in low achieving schools feel a need for emotional support due to the academic condition of students, and therefore seek informal group association.

Attention might be given to the notion that teachers in low achieving schools, particularly the "low low" schools may have a different perspective of students due to the vast heterogeneity which exists among the students. Moreover, these teachers may recognize the necessity to think well of students and maintain a very positive attitude so that they can work as well as possible with their students. All of the "low low" achievement schools were disadvantaged schools, therefore, with that thought coupled with the findings, a conclusion which might be derived is that teachers in "low low" schools have a better opportunity to broaden their expectations for students. Lastly, expectations are negatively related to the school achievement level and not positively as the theoretical model depicts. As a result of this occurrence questions may be raised about the general body of research related to teacher expectations and student achievement. It may be that the concept of "Pygmalion in the Classroom" is now obsolete.

According to the considered demographic variables in relationship to informal group membership and teacher expectations,

the following conclusions appeared warranted:

1. Age and teaching experience influence teacher expectations. The older a teacher becomes and the greater the teaching experience, the lower the expectations will be. Age is not an influencing variable on informal group membership. However, when individual schools are considered, age will play an important role about fifty percent of the time.

2. Negro teachers will have higher expectations than Caucasian teachers. This might be explained by the fact that most of the Negro teachers in the sample had worked with disadvantaged youngsters and used high expectations as a part of their teaching strategy. It may be concluded that teachers who have had experiences in heterogeneous and disadvantaged settings will have higher expectations for students than their non-exposed counterparts.

3. Race was a significant factor in informal group membership. Although the sample of teachers were members of desegregated teaching staffs, Negroes tended not to be members of informal groups which were majority Caucasian and Caucasians tended not to be members of informal groups which were majority Negro. It can be concluded, not from this study alone however, that desegregated teacher informal groups seldom exist.

4. Other variables in the study will not have any effect on informal group membership or teacher expectations.

Recommendations

The findings of this study seem to support the following recommendations:

1. That additional research related to developing new approaches for measuring informal group membership of teachers and other professionals, since it appears that current methods are ineffective.

2. That research be conducted concerning the relationship between teaching experience and student grades.

3. That additional research be undertaken to determine whether teacher expectations concerning achievement affect student expectations concerning achievement.

4. That studies be conducted on what other determinants may affect teachers' expectations.

5. That additional studies be conducted to determine what effects teacher expectations have on student achievement.

6. That additional studies be conducted in secondary schools pertaining to the relationship of informal group membership to teacher expectations.

7. That research efforts be pursued to determine whether teacher expectations are affected by the administrative system of the school.

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APPENDIX A

CORRESPONDENCE RELATED TO STUDY

THE UNIVERSITY OF OKLAHOMA
Norman, Oklahoma, 73069

March 10, 1970

_____

_____

Dear

I am hoping that you will consent to serve as a judge in validating the enclosed proposed questionnaire for my doctoral thesis now in progress at The University of Oklahoma. The study is attempting to make an analysis of the effect of the informal organization on teacher expectations about students' ability to achieve in school. It is thought that through such an analysis a better understanding of some of the factors which influence teacher-attitudes toward students, and teacher group behavior in schools (for this study, elementary schools) might be ascertained.

The literature concerning teacher expectation for student achievement does not provide an adequate instrument to measure this phenomenon. Therefore, after consultation with my doctoral committee, the chairman of which is Dr. Robert Ohm, it was decided that an instrument could be developed with the assistance of authorities in the area of teacher education and teacher behavior. You were one of twelve such authorities selected.

The enclosed statements were submitted by thirty-one elementary school teachers, four education doctoral candidates, and the writer. Your personal agreement or disagreement with the statement is not requested. What is requested is your judgment of the applicability of the statements in assessing teacher expectations regarding student achievement, student ability to achieve, student desire to achieve, desire to perform academically, etc. It would be appreciated if you would react to each statement as to content, bearing in mind that these statements are not intended to be necessarily factual. In your opinion, do these items contain the necessary and sufficient statement of opinion which possibly reflect expectation about achievement or academic performance? These items will be answered by teachers in the following ways: Strongly Agree, Agree, Mildly Agree, Mildly Disagree, Disagree, Strongly Disagree. Attitudinal items are less objective in their wording, but tend to elicit, more or less, unthoughtful or emotional responses of people.

Instructions are given at the beginning of the list of statements.

My very sincere thanks and appreciation for your valuable assistance.

Very sincerely yours,

/s/ James L. Mosley

THE UNIVERSITY OF OKLAHOMA

Norman, Oklahoma, 73069

March 16, 1970

_____

_____

Dear

Thank you so much for serving as one of the judges for validating the proposed questionnaire which will be a part of my doctoral thesis. Your assistance was very valuable, and words cannot adequately convey my appreciation. If I can ever reciprocate your help, please don't hesitate to let me know. Once again, thank you.

Respectfully,

/s/ James L. Mosley

THE UNIVERSITY OF OKLAHOMA

Norman, Oklahoma, 73069

April 16, 1970

Dear Teacher,

Under the guidance and direction of Dr. Robert E. Ohm, Dean, College of Education, University of Oklahoma, I am conducting a doctoral study to uncover some of the factors which influence teacher perceptions and group structure in the school organization. Hopefully, the study will provide more insight about the behavior of the informal organization within schools.

We recognize that you are busy and your time is valuable, but it is from efforts such as this that provide a basis for continued improvement of educational processes. It is for this reason that we request your participation in this study by completing the enclosed two (2) questionnaires and data form. This should at the most require approximately fifteen (15) minutes.

Although the questionnaires elicit individual responses, the study is only concerned with the composite responses of all participants. Therefore, please be assured that you will be and remain an anonymous participant. No one will be apprised of your responses on the questionnaires. The results of the questionnaires will be held in strict confidence and handled in a responsible and professional manner. For this reason, your responses can be absolutely candid.

Please accept my sincere thanks for your cooperation in making this study possible.

Sincerely,

/s/ James L. Mosley

APPENDIX B

INSTRUMENTS USED IN THE STUDY

MOSLEY TEACHER EXPECTATION SCALE
(MTES)

Instructions for teachers:

1. Read each statement carefully and treat it as a separate entity of the questionnaire. Indicate your true belief about the statement by circling the appropriate symbol (SA, A, U, D, SD) which follows each statement.

   SA (Strongly Agree)
   A (Agree)
   U (Undecided)
   D (Disagree)
   SD (Strongly Disagree)

2. Please respond to each of the statements, but do not spend much time on any statement.

3. When this questionnaire has been completed, please complete the other (Sociometric Data Form-S).

4. When both questionnaires, including personal data form, have been completed, place them in the envelope, seal it, and return it to your principal.

5. It is not necessary to return the sheet with the staff names, since only the circled numbers are needed.

1. If given an opportunity students will seek higher achievement goals.
   SA A U D SD
2. If students would just work harder and study more, teachers would do a better job.
   SA A U D SD
3. One can expect pupils to achieve in accordance to their socio-economic background.
   SA A U D SD
4. If pupils don't receive assistance and encouragement from home, teachers can do very little to produce adequate achievement.
   SA A U D SD
5. It is accurate to state that all pupils have an inner interest in achieving to their fullest.
   SA A U D SD
6. Pupils just don't have a respect for knowledge and academic achievement now as they once did.
   SA A U D SD
7. It can be expected that loud and boisterous pupils will be low achievers.
   SA A U D SD
8. Teachers can do a good job of educating children even without support from the home.
   SA A U D SD
9. If a teacher helps students to believe in themselves, high academic performance will follow.
   SA A U D SD
10. Pupils from lower socio-economic levels usually are interested in the learning process.
    SA A U D SD
11. Teachers should not delude themselves into thinking that students' achievement is going to be better than test score prediction.
    SA A U D SD
12. Teachers must realize that without assistance from home they can't do a good job with student achievement.
    SA A U D SD
13. School achievement is important to all pupils if given an adequate chance.
    SA A U D SD
14. Usually pupils are not capable of making decisions which positively affect the academic situation in the classroom.
    SA A U D SD
15. It is unfortunate that disadvantaged pupils can't be expected to have high achievement.
    SA A U D SD

16. Most pupils take their learning responsibilities seriously.
SA A U D SD

17. What a student's parents do for a living will affect his ability to achieve in school.
SA A U D SD

18. All students will achieve to their ability if there is a proper school environment.
SA A U D SD

19. The instructional level must be adjusted downward for students in schools located in economically deprived areas.
SA A U D SD

20. Students who are insubordinate and rude usually aren't capable of high academic performance.
SA A U D SD

21. If a teacher believes a student will have academic success in class the student will.
SA A U D SD

22. Pupils will display good academic achievement in relation to ability if given the proper opportunity.
SA A U D SD

23. Social class is a good indicator of ability to perform in school.
SA A U D SD

24. There is a relationship between a student's appearance and his ability to achieve.
SA A U D SD

25. It is mandatory that students get encouragement from home if they are to achieve in school.
SA A U D SD

26. Teachers are expecting too much if they think they can produce academic success in all students.
SA A U D S D

27. When teaching low-achieving youngsters, one must first teach them how to behave.
SA A U D SD

28. The majority of students are unable to reason critically.
SA A U D SD

29. It can be expected that students will desire to improve their achievement level.
SA A U D SD

30. A teacher will always have some failures.
SA A U D SD

31. Most pupils don't have the inner desire to learn as much as they can.
SA A U D SD

SOCIOMETRIC DATA FORM-S

Below is an alphabetical list of the professional staff at your school excluding administrators. This list will enable you to respond to the five (5) sociometric items on the following page. Read the items carefully, and record your answer(s) by circling the number(s) under each item which corresponds with the name(s) on the list. Circle as many numbers as necessary to accurately answer the question or statement.

Before you begin, please place the number which corresponds with your name in the box in the upper right hand corner of the following page.

1. Mrs. Helen A. Ames
2. Mrs. Jane Barnes
3. Mrs. Mary Black
4. Mrs. Elsa Blakley
5. Mrs. Joan Cox
6. Mrs. Susan Due
7. Mrs. Grace Hubbard
8. Mrs. Carolyn Jones
9. Mrs. Alma Kelley
10. Mrs. Diane Lehman
11. Mrs. Eve McDaniel
12. Mr. John Murdoch
13. Mrs. Emma Parker
14. Mrs. Sue Ragsdale
15. Mrs. Nancy Reason
16. Mrs. Mary Ruble
17. Mr. Jim Sperry
18. Mrs. Carol Sydney
19. Mrs. Martha Wilson

Your number ☐

SOCIOMETRIC SCALE

A. Persons with whom you feel most free to discuss student achievement problems.
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

B. In your opinion, which teacher's views about students' capacity to achieve are most similar to yours?
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

C. Which teachers do you talk to most while at school?
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

D. To which persons on the list would you most likely turn for help with a school problem?
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

E. Which teachers if any do you see socially outside of school?
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

PERSONAL DATA FORM

Please place an X in the space opposite the choice which gives the correct information about yourself.

1. Male_____, Female_____.
2. Age: 20-24_____, 25-29_____, 30-39_____, 40-49_____, 50 or above_____.
3. Years of teaching experience: 1_____, 2-3_____, 4-8_____, 9-15_____, 16-25_____, over 25_____.
4. Years at this school: 1_____, 2_____, 3-7_____, 8-15_____, 15 or more_____.
5. Certification level: B.S. or B.A._____, M.S. or M.A._____, Beyond masters_____.
6. Teaching assignment: kindergarten_____, primary_____, intermediate_____, other_____.
7. Marital status: married, yes_____ no_____

APPENDIX C

LIST OF JUDGES

1. Dr. John Brothers
   Director of Elementary Education
   Oklahoma City Public Schools
2. Dr. John Pulliam
   Professor of Education
   University of Oklahoma
3. Dr. Gene Shepherd
   Professor of Education
   University of Oklahoma
4. Mrs. Freddie Cudjoe
   Advisory Specialist (Elementary Schools)
   Oklahoma City Public Schools
5. Mrs. Maxine White, Principal
   John F. Kennedy Elementary School
   Norman, Oklahoma
6. Mrs. Elizabeth Ann Holmes, Principal
   Riverside Elementary School
   Oklahoma City, Oklahoma
7. Dr. Mack Wedell
   Professor of Education
   Central State College
   Edmond, Oklahoma
8. Mr. Gene Steiger
   Title IV Coordinator
   Oklahoma City Public Schools
9. Mrs. Betty Earnest, Teacher
   Spencer Elementary School
   Oklahoma City Public Schools
10. Mr. Bill Sullivan
    Director of Elementary Education
    Norman Public Schools
    Norman, Oklahoma
11. Dr. Donald J. Hall, Director
    Southwest Center for Human Relations Studies
    University of Oklahoma
12. Mrs. Evelyn Lawson
    Inner Cities Project
    Tulsa Public Schools
    Tulsa, Oklahoma

APPENDIX D

PROPOSED QUESTIONNAIRE ITEMS

PROPOSED QUESTIONNAIRE ITEMS WITH t VALUES

	Statement	t Value
1.	Most pupils do not have the inner desire to learn as much as they can.	6.35
2.	It is unrealistic for teachers to expect pupils to study very much	.13
3.	It is unfortunate, but disadvantaged pupils can't be expected to have high achievement.	3.75
4.	Teachers should not expect most students to respond with interest to difficult academic problems.	3.96
5.	A teacher is realistic if she expects pupils to achieve up to their innate ability.	-.13
6.	If students would just work harder and study more teachers would do a better job.	4.84
7.	Regardless of what teachers do, they shouldn't expect adequate achievement from all their pupils.	2.11
8.	Teachers should not delude themselves into thinking that students' achievement is going to be better than test score prediction.	2.70
9.	Pupils from lower socio-economic levels usually are interested in the learning process.	4.57
10.	A teacher can expect pupils to be enthusiastic about the learning process in the school.	3.11
11.	Teachers must realize that without assistance from home they can't do a good job with student achievement.	2.06
12.	Pupils just don't have a respect for knowledge and academic achievement now as they once did.	3.92
13.	Students will place emphasis on learning and achievement because it is natural to do so.	2.33
14.	Students have a burning desire for maximum achievement, even though the desire may not always be apparent.	2.98
15.	The amount of academic success students experience is related to what teachers expect from them.	1.82
16.	It is reasonable for teachers to expect good academic performance from pupils.	.96
17.	Usually pupils are not capable of making decisions which positively affect the academic situation in the classroom.	3.28
18.	Working with academically deficient youngsters tends to be a waste of time.	4.29
19.	A teacher may expect children's performance to be better if some type of reward is given.	2.80

20.	It can be expected that students will desire to improve their achievement level.	3.96
21.	Students will display good academic achievement in relationship to ability if given the proper opportunity.	4.52
22.	There are few students who are capable of academic excellence.	3.34
23.	Believe it or not, pupils are capable of assisting in planning beneficial academic activities for the class.	4.64
24.	In academic matters the large majority of students are able to perform well.	3.13
25.	All students will achieve to their ability if there is a proper school environment.	2.55
26.	School achievement is important to all pupils if given the adequate chance.	2.82
27.	All students just can't be activated to good achievement, regardless of what is done.	3.08
28.	Economic background is the main factor in determining high academic performance by students.	2.67
29.	It is untrue that students will respond academically to praise and encouragement from the teacher.	2.68
30.	If pupils don't receive assistance and encouragement from home, teachers can do very little to produce adequate achievement.	3.52
31.	If a teacher helps students to believe in themselves, high academic performance will follow.	2.93
32.	Surprisingly enough most pupils don't appreciate a classroom atmosphere which is conducive to maximum achievement.	2.98
33.	Belligerent students may have ability but they have little desire to achieve well in school.	5.96
34.	It is accurate to state that all pupils have an inner interest in achieving to their fullest.	4.31
35.	Pupils who achieved poorly one year can be expected to do the same the following year.	1.68
36.	Pupils from disadvantaged homes cannot be expected to achieve like other students.	2.61
37.	Regardless of what a teacher does, some students will fail academically.	5.22
38.	It can be expected that loud and boisterous pupils will be low achievers.	4.87
39.	Disadvantaged pupils have a difficult time following academic instructions.	1.23
40.	A teacher will always have some failures.	2.21

41.	Students will show a higher rate of academic efficiency if encouraged.	2.26
42.	Students are now more interested in socializing than in intellectual achievement.	6.08
43.	Students who are low achievers are probably not working hard and applying themselves.	4.03
44.	The majority of students are unable to reason critically.	2.39
45.	Most pupils attend school not to learn but because of compulsory attendance laws.	5.17
46.	One should expect adequate achievement from deprived youngsters.	1.66
47.	Minority group students would be wise to try and find success in vocational areas rather than academic areas.	3.27
48.	There is nothing more irritating than a stupid-looking student.	2.16
49.	It is not unreasonable to expect students to perform above their considered ability.	.25
50.	If a teacher believes a student will have academic success in class, the student will.	5.46
51.	Most pupils take their learning responsibilities seriously.	4.38
52.	If given an opportunity students will seek higher achievement goals.	3.41
53.	There is a relationship between a student's appearance and his ability to achieve.	2.13
54.	Teachers should expect their pupils to show a high spirit for academic competition.	-1.43
55.	Girls conform more readily to a teacher's expectations of academic success than boys.	- .91
56.	Teachers can do a good job of educating children even without support from the home.	2.62
57.	One should not expect students to achieve academically and be interested in extra-class activities also.	2.05
58.	Social class is a good indicator of ability to perform in school.	3.69
59.	What a student's parents do for a living will affect his ability to achieve in school.	2.35
60.	Students who are considered dull are not going to have academic success with or without good teaching.	5.93
61.	Teachers have an internal way of knowing which pupils are not going to achieve.	5.22
62.	One can expect pupils to achieve in accordance to their socio-economic background.	3.39

63.	It is mandatory that students get encouragement from home if they are to achieve in school.	3.03
64.	When teaching low-achieving youngsters, one must first teach them how to behave.	4.78
65.	Children are innately intelligent and should be allowed to develop naturally in the classroom.	- .30
66.	Students tend to be unimaginative, therefore, their level of achievement is retarded.	3.02
67.	Pupils tend to be very insightful regarding academic matters.	2.04
68.	Students who are insubordinate and rude usually aren't capable of high academic performance.	3.35
69.	Teachers are expecting too much if they think that they can produce academic success in all students.	5.12
70.	The instructional level must be adjusted downward for students in schools located in economically deprived areas.	2.07

APPENDIX E

MATRIX PRESENTATION OF SOCIOMETRIC CHOICES AND CUBED SYMMETRICAL MATRIX FOR EACH SCHOOL

Included in this appendix are twenty-eight matrices. These matrices represent the sociometric choices of respondents for each of the fourteen schools in the study and also the cubed symmetrical matrix for each school. The order in which these matrices are presented is as follows: (1) The respondents' sociometric choices for a school are reflected in a matrix which is given on a separate sheet. In some instances two such matrices representing two schools are given on the same sheet. (2) On a second sheet immediately following those matrices is the cubed symmetrical matrix for the corresponding school. This procedure is used for each of the fourteen schools.

The numbers at the left and top of the sociometric choice matrices represent the individual respondents of a school. Determining who chose whom was accomplished by selecting a number at the left and reading across until a 1 is located in a square. Read up that column to the number at top; this number represents the individual chosen by the respondent represented by the number at the left. This procedure is reversed to determine who was chosen by whom.

The matrices immediately following the sociometric choice matrices, the cubed symmetrical matrices, were determined by developing a matrix using only the mutual choices[1] from the corresponding sociometric choice matrices and cubing (S^3) the newly developed matrix. This operation was performed by applying matrix multiplication. The results of this operation yield non-zero terms on the main diagonal[2] if any cliques exist within the total group of respondents.

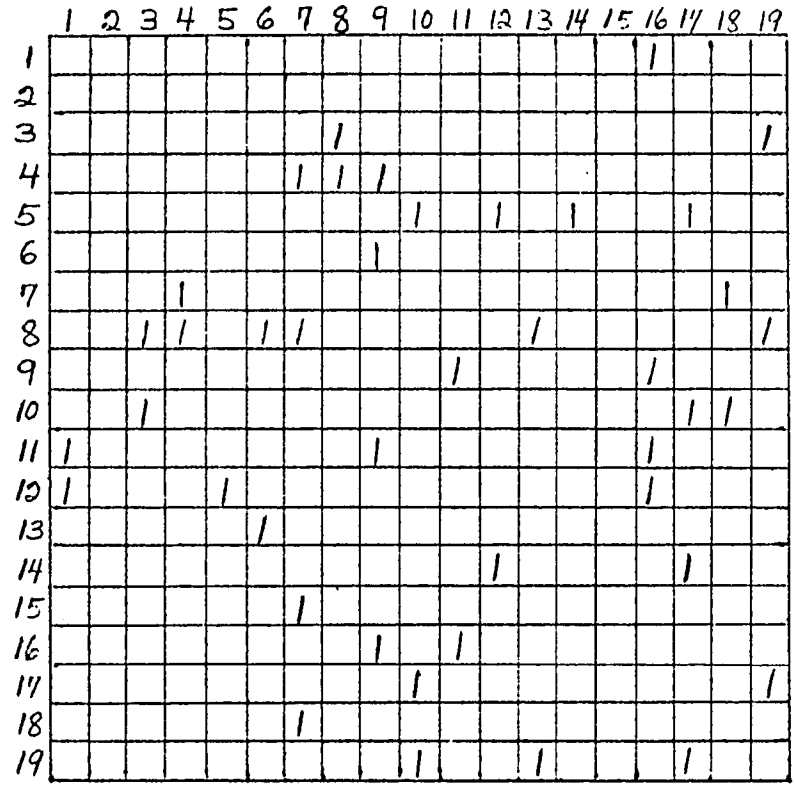
Respondents who are members of a clique(s) are determined by the numbers of the rows which contain the non-zero main diagonal terms. If there are more than four non-zero terms it is necessary to refer to the original matrix for aid in ascertaining which respondents are members of the particular cliques. When the main diagonal has only 2's the cliques will be comprised of three members. The existence of only 6's on the diagonal suggests four-member cliques. An occurrence of different numbers on the diagonal implies two or more cliques with one or more common members.

---

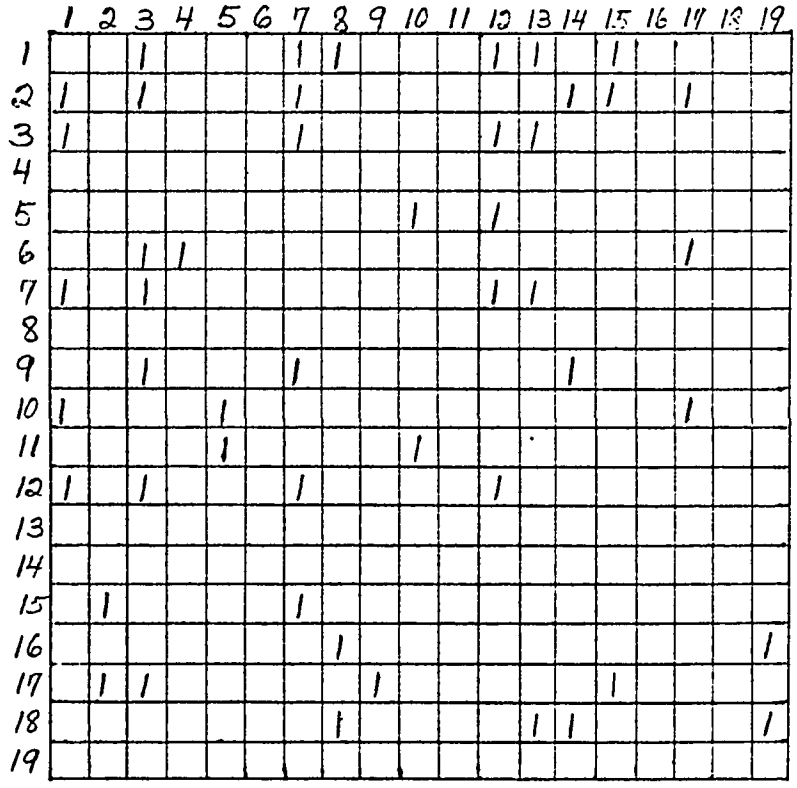
[1]Mutual choice--a two-way selection between two individuals.

[2]Main diagonal--the set of cells extending from row 1, column 1, to row n, column n. n equals the dimensions of the matrix.

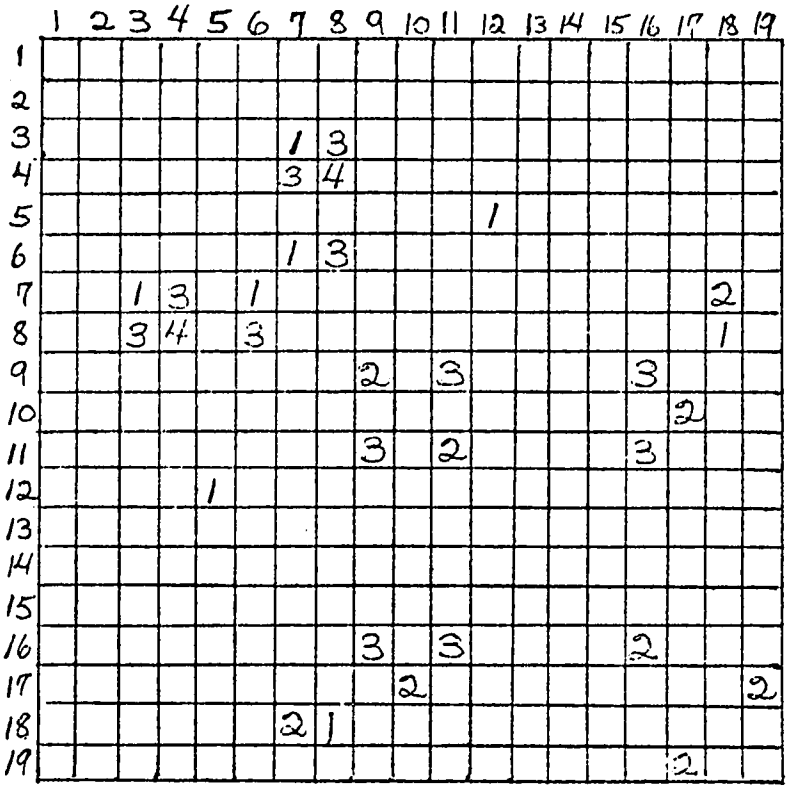
SCHOOL A



SCHOOL B



SCHOOL A



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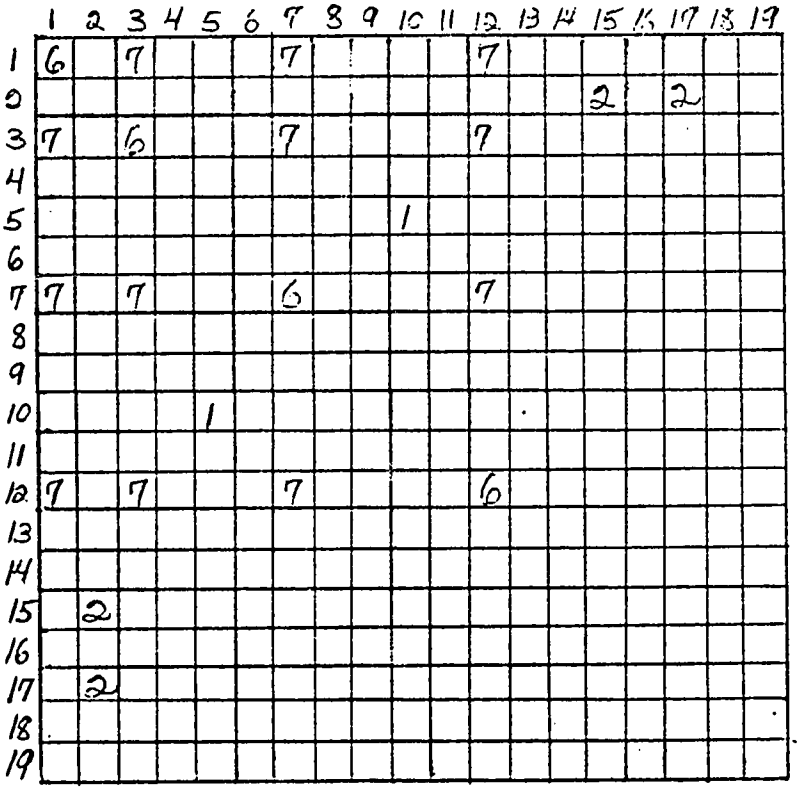
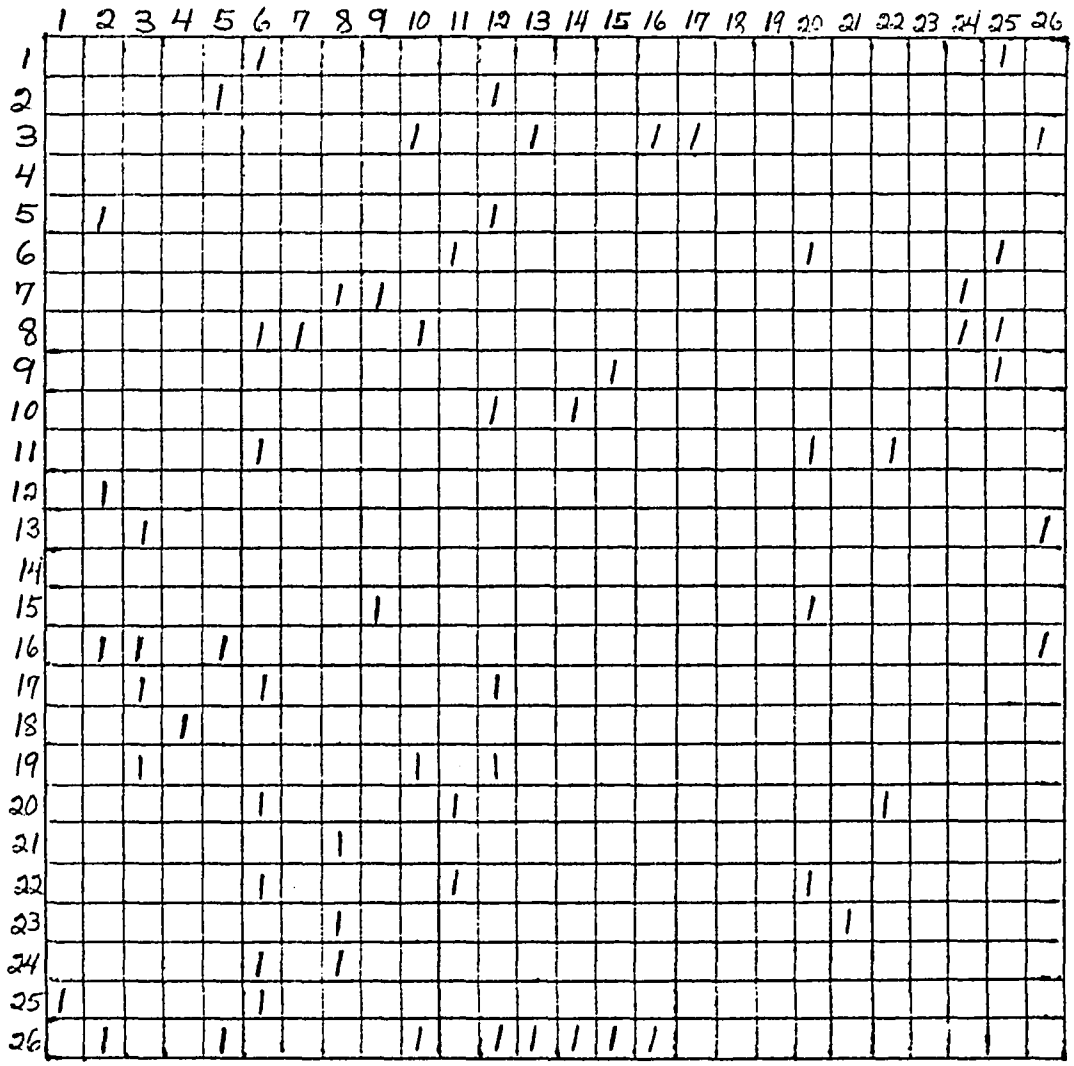


SCHOOL C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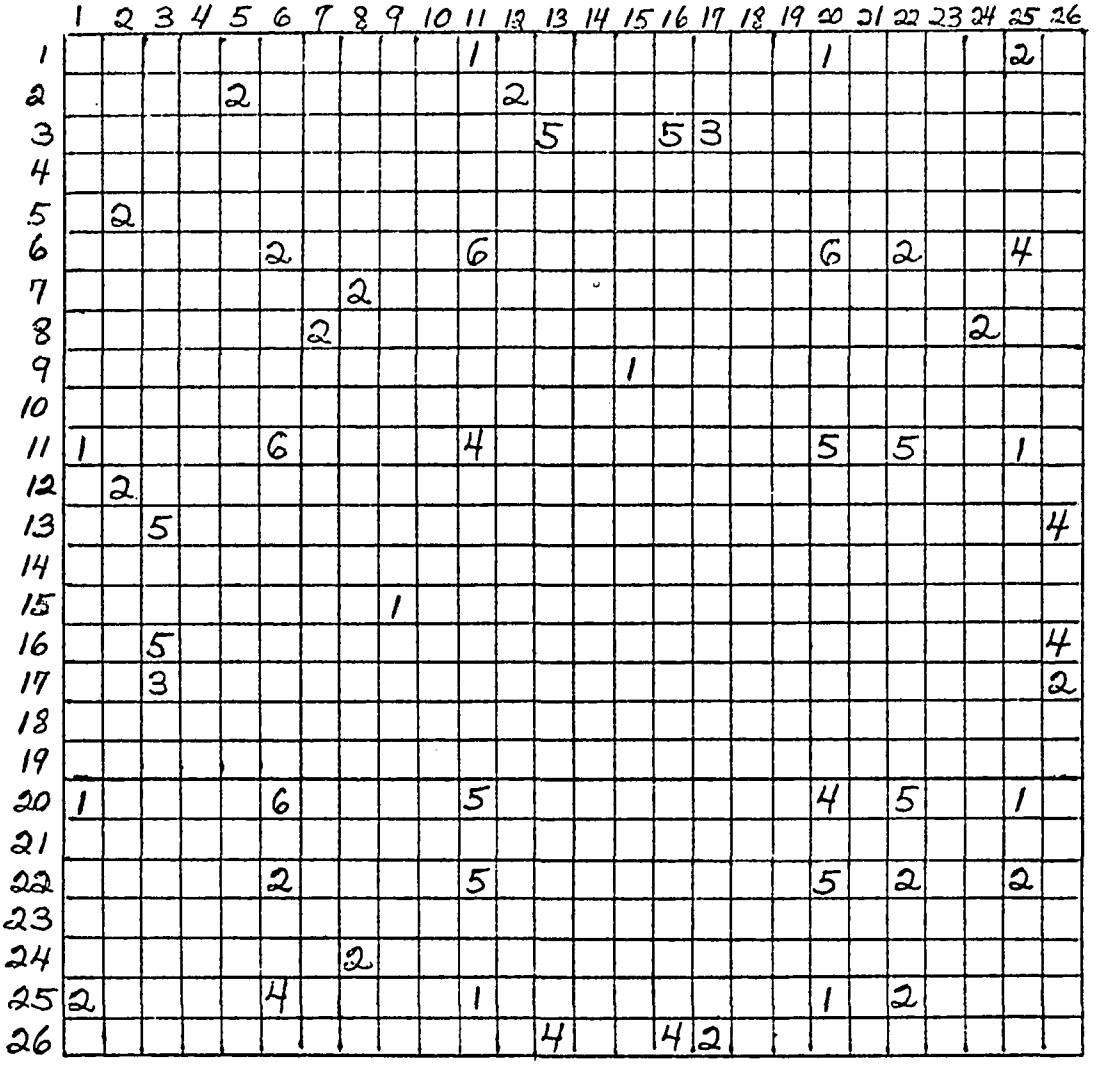
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26

SCHOOL C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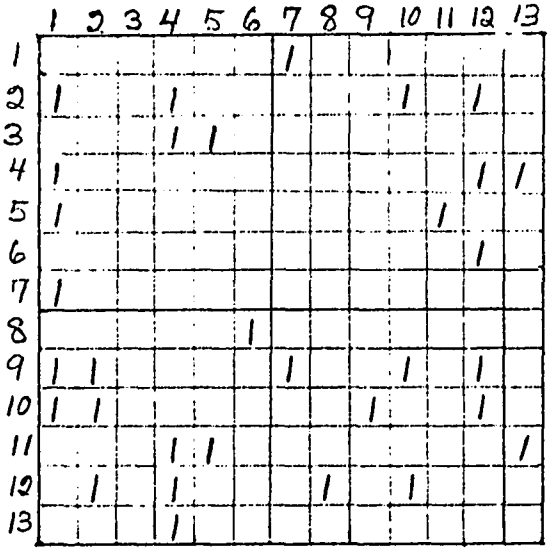
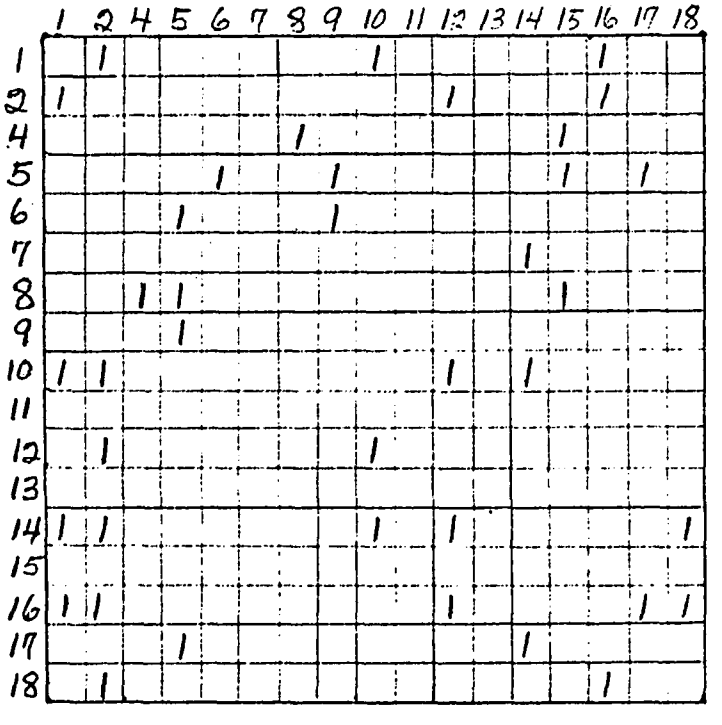
SCHOOL
D



SCHOOL
E



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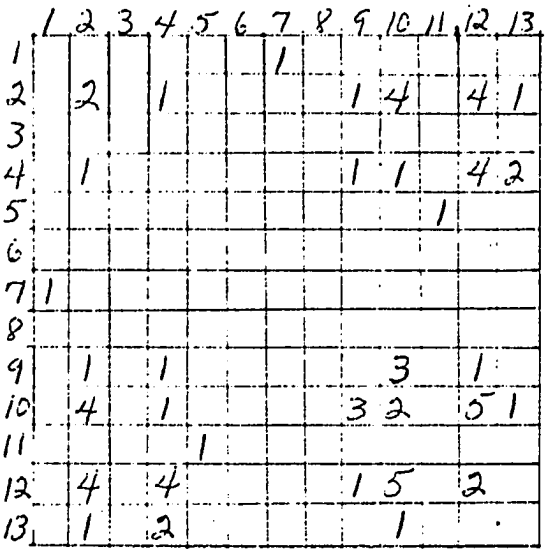

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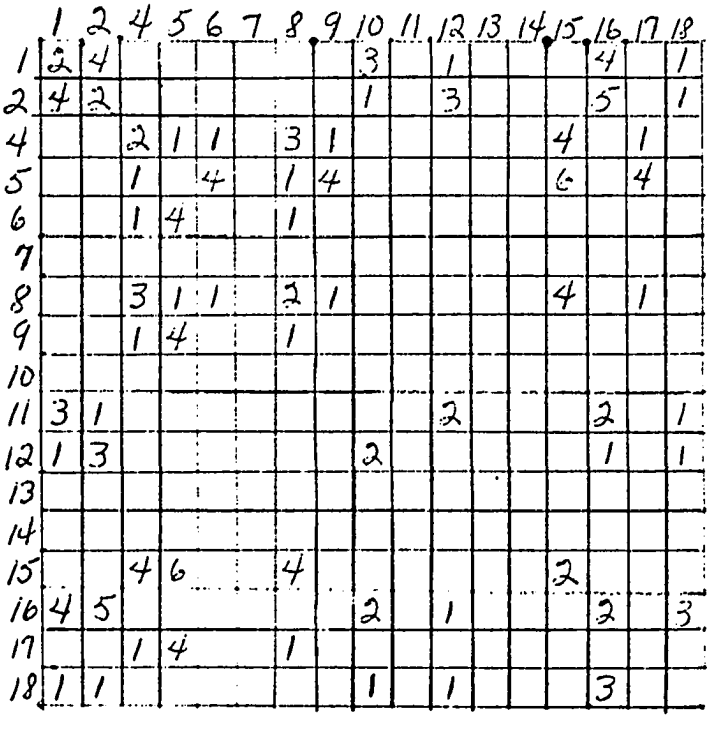
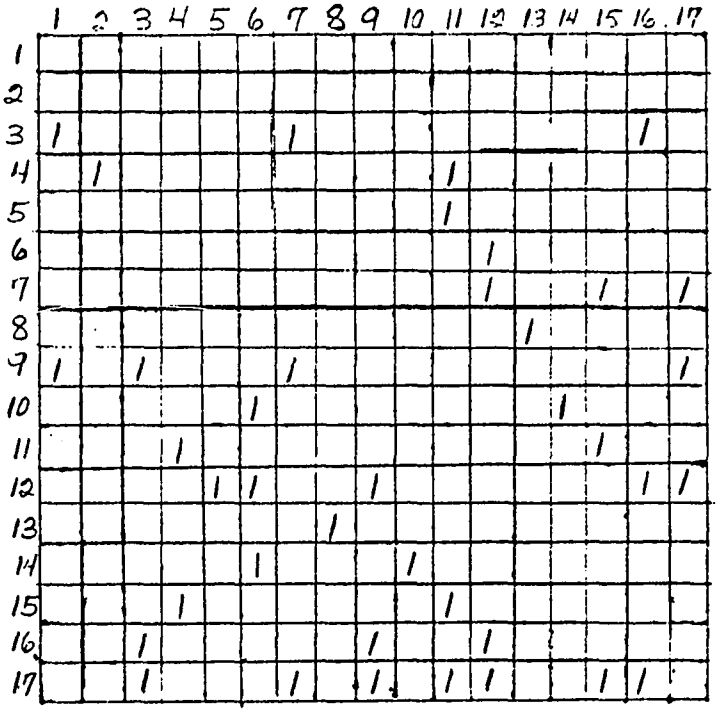
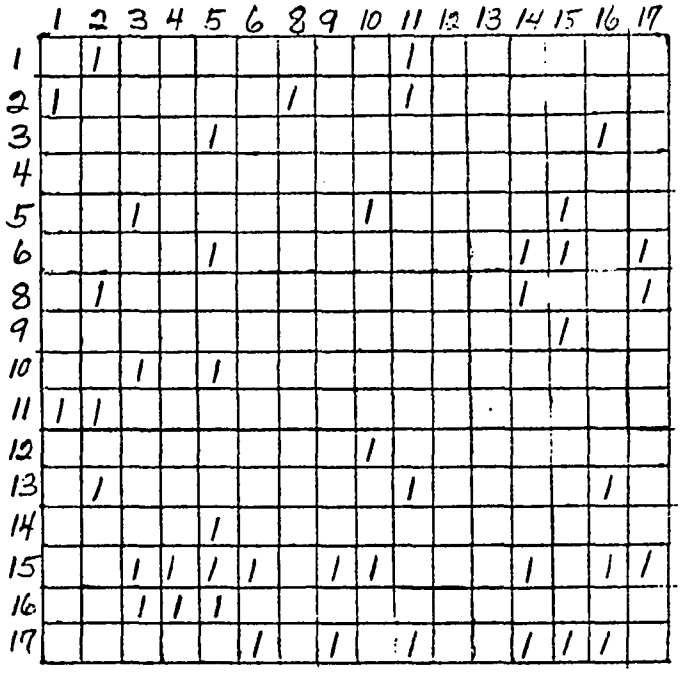


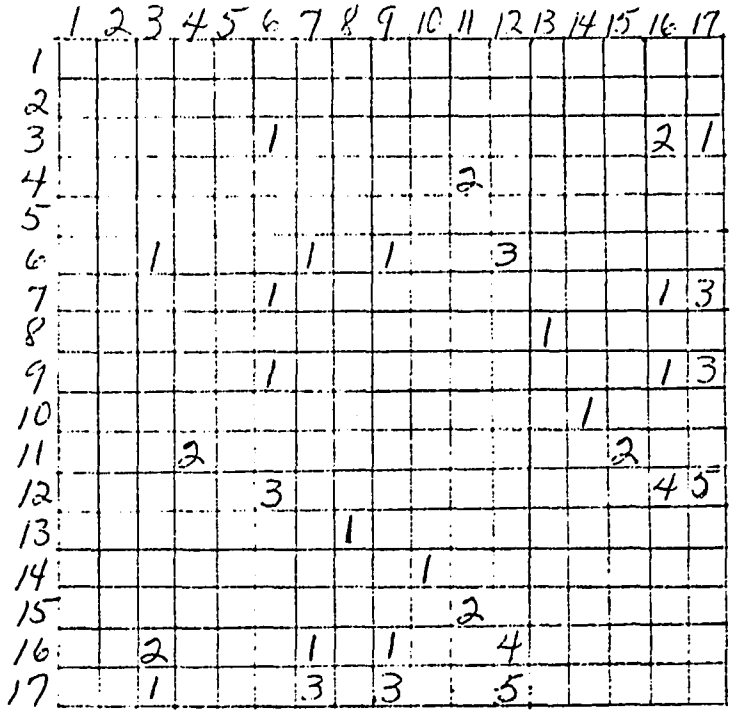
SCHOOL F



SCHOOL G



SCHOOL F



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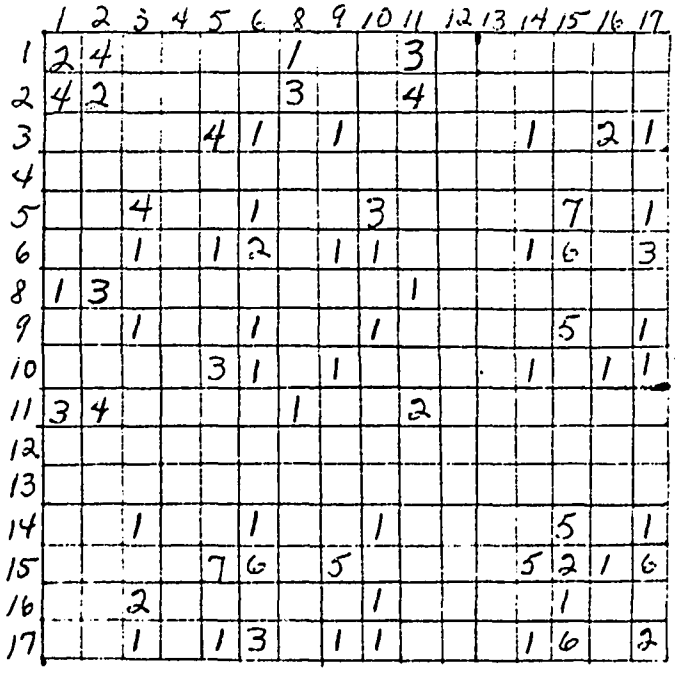

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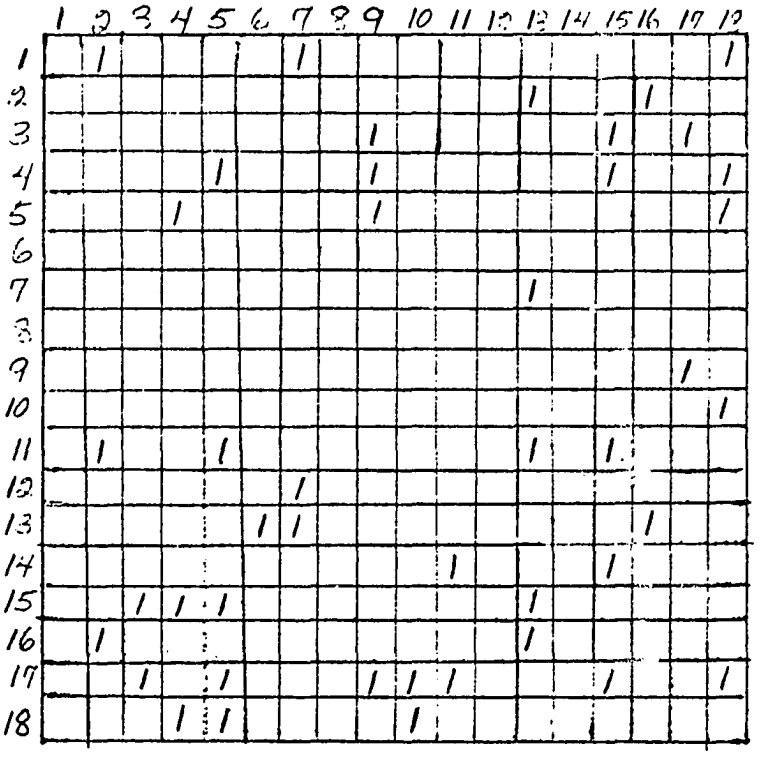

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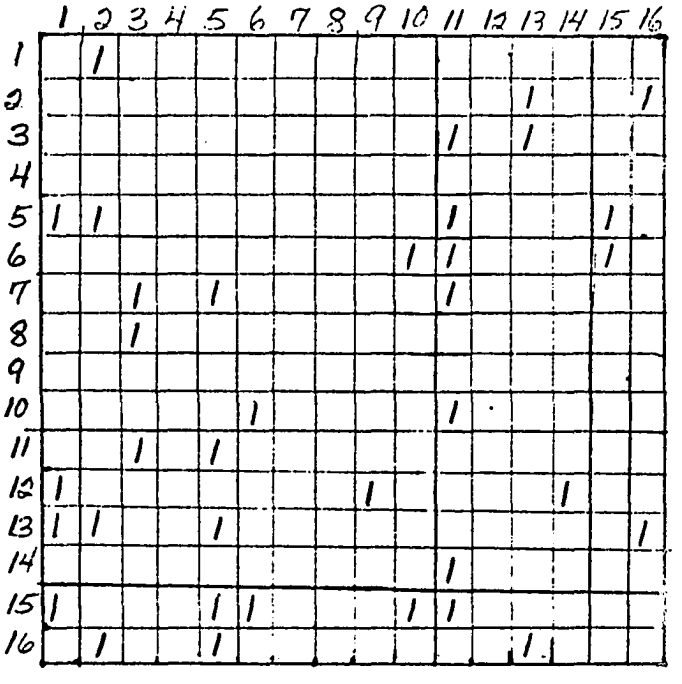

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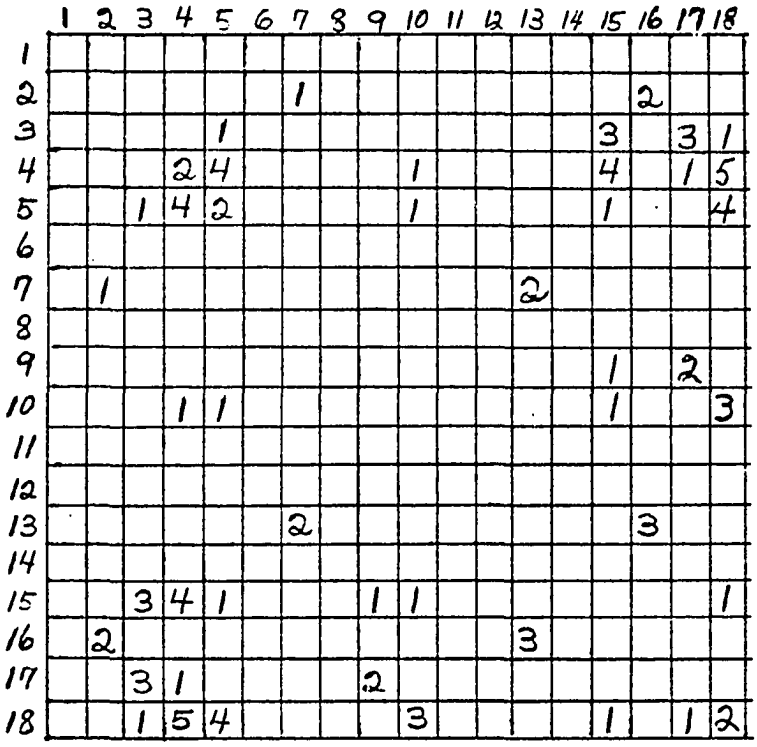

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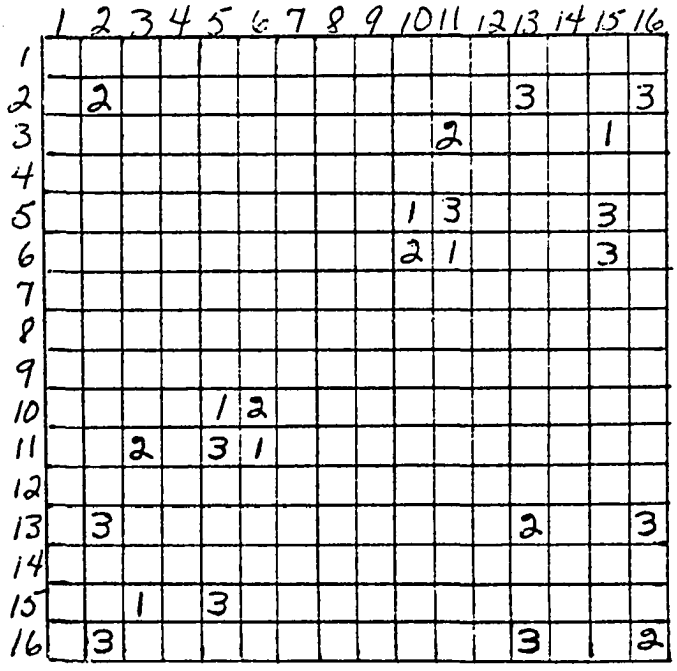

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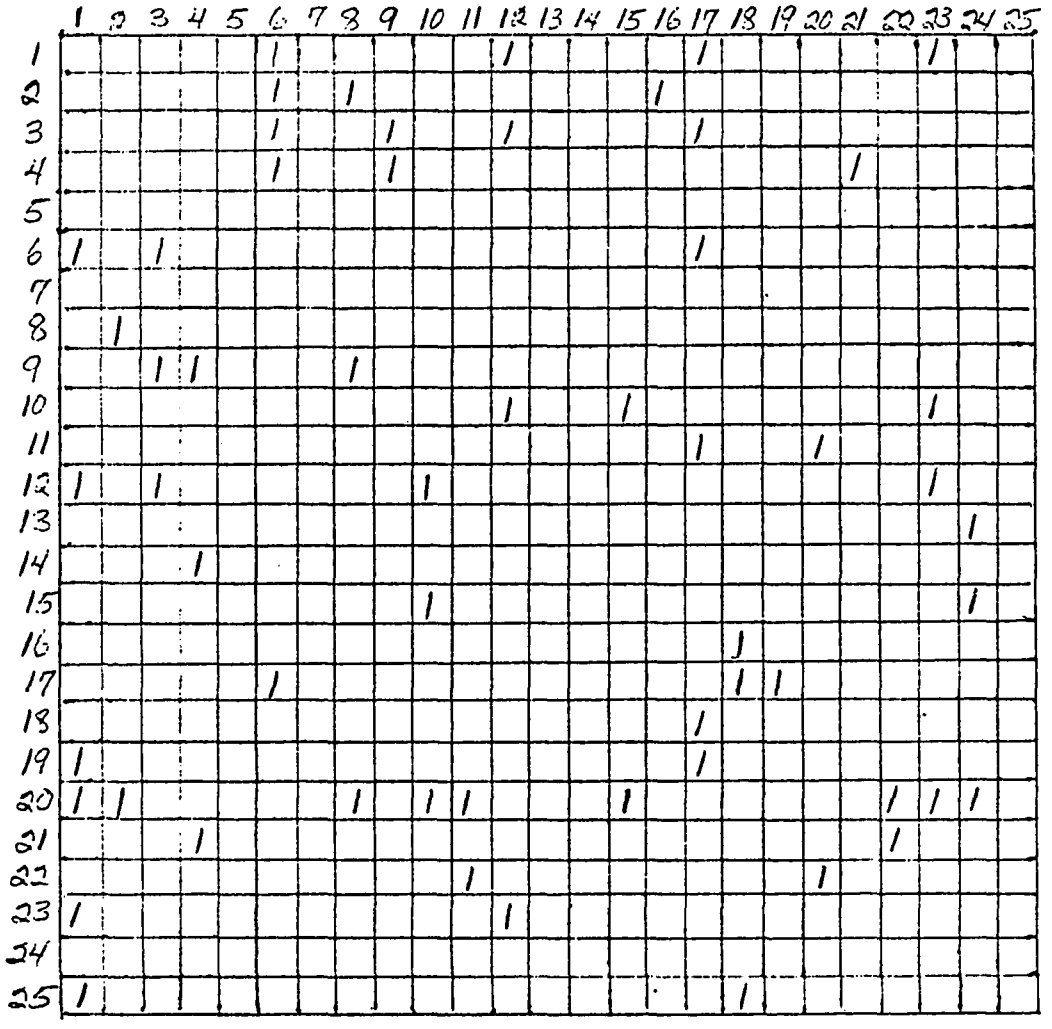
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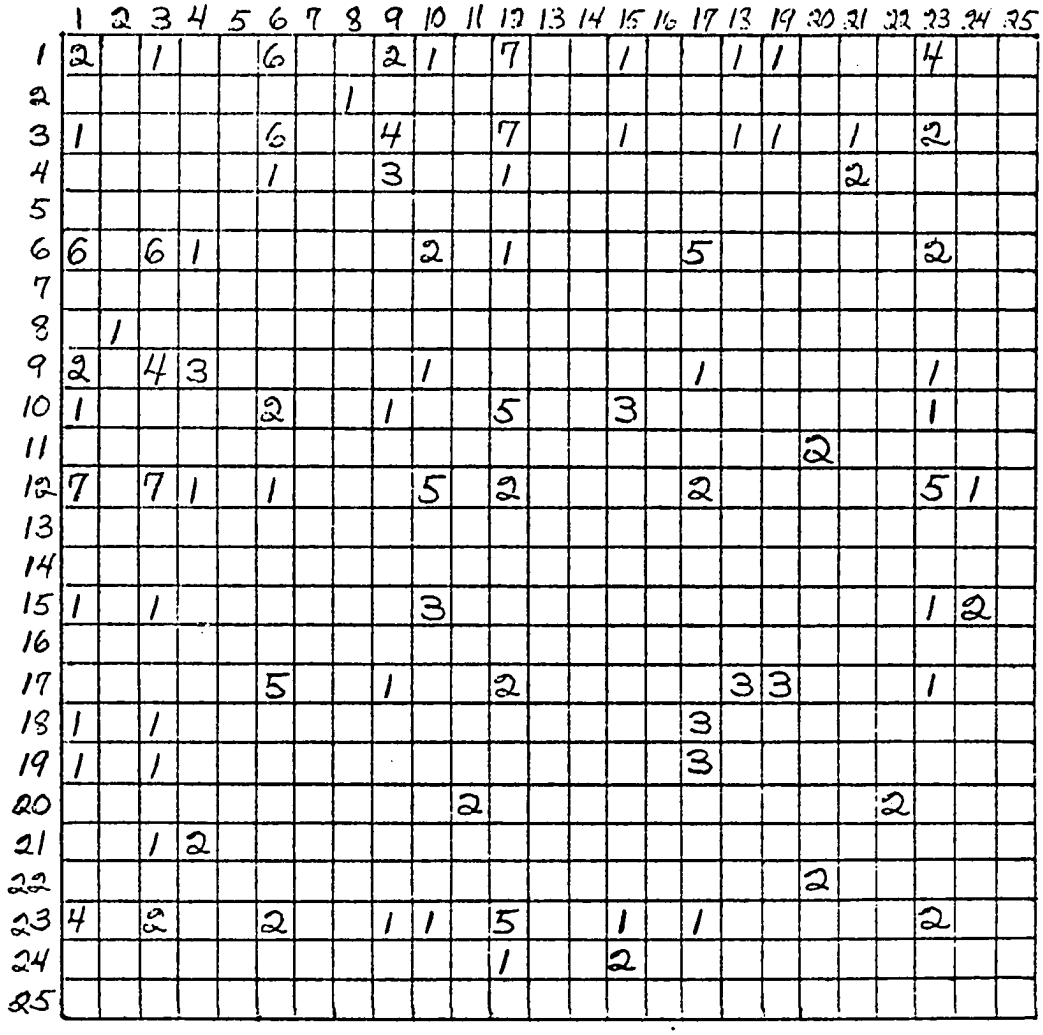

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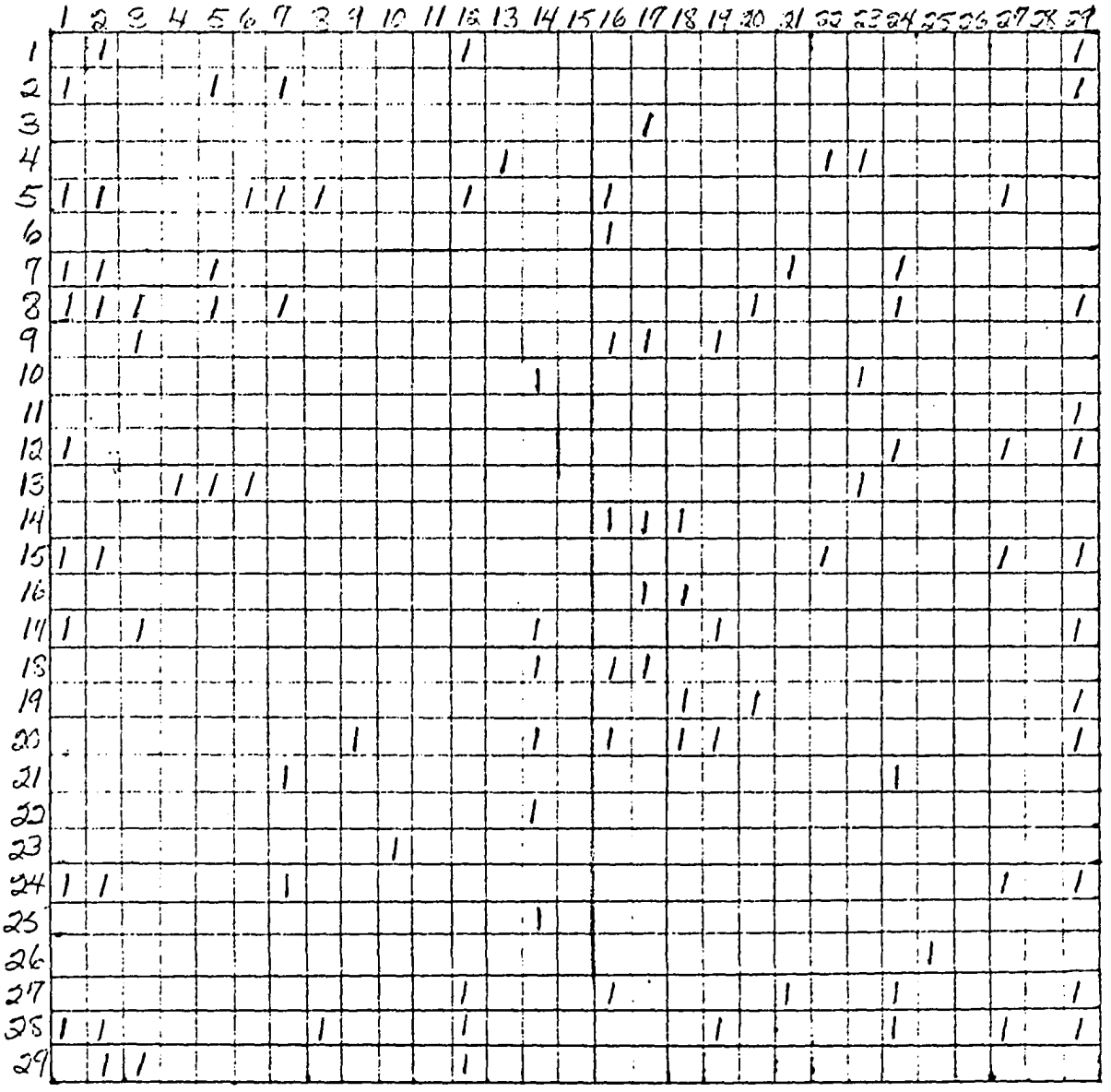

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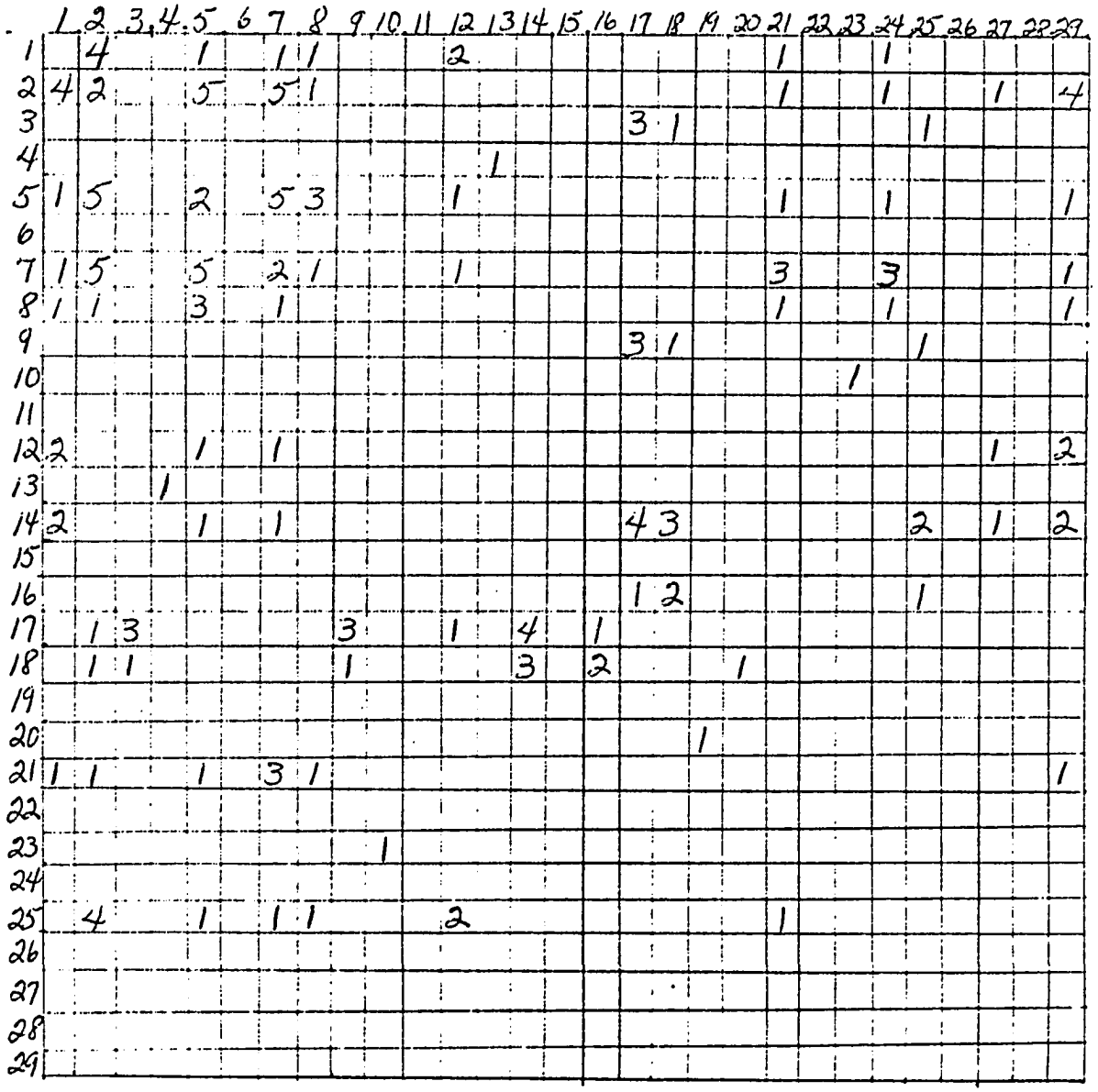

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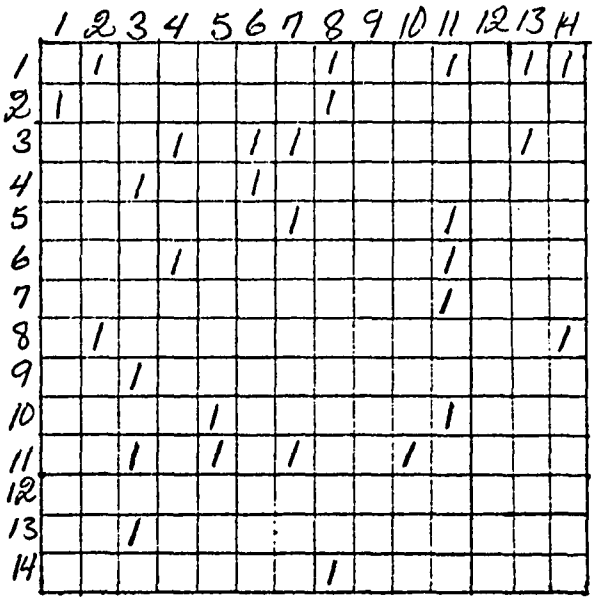

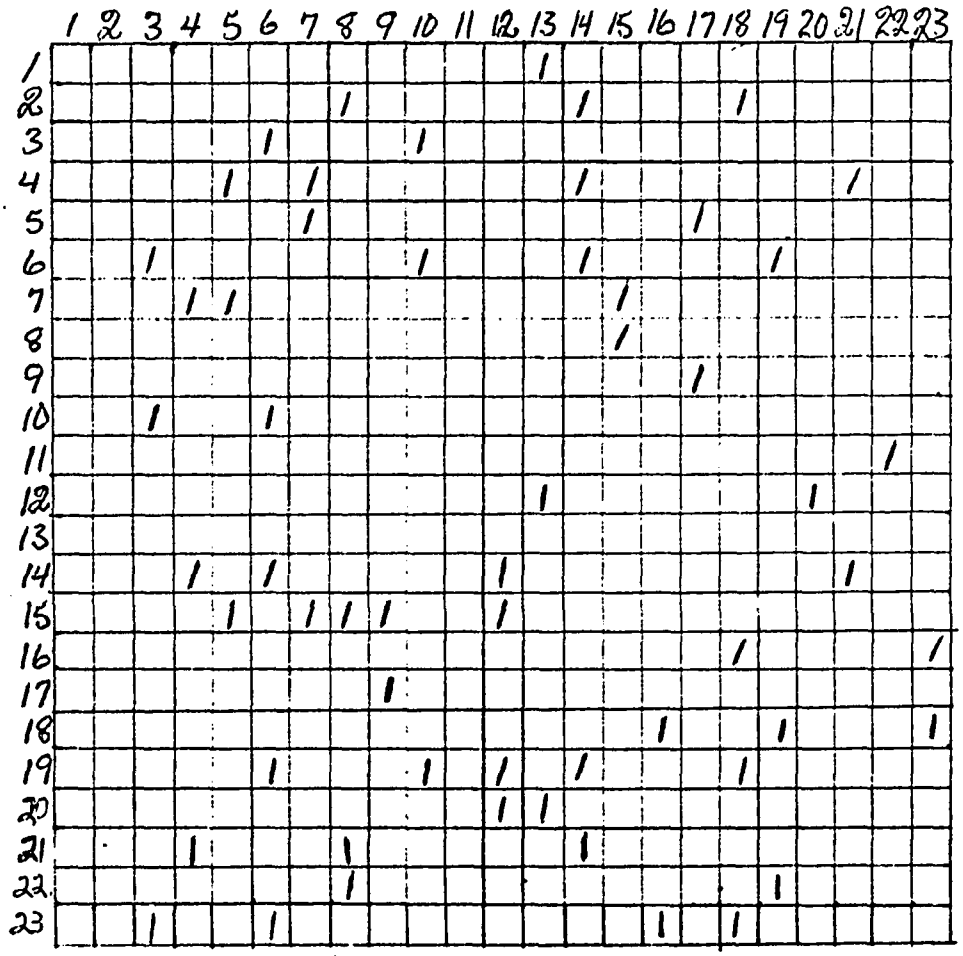

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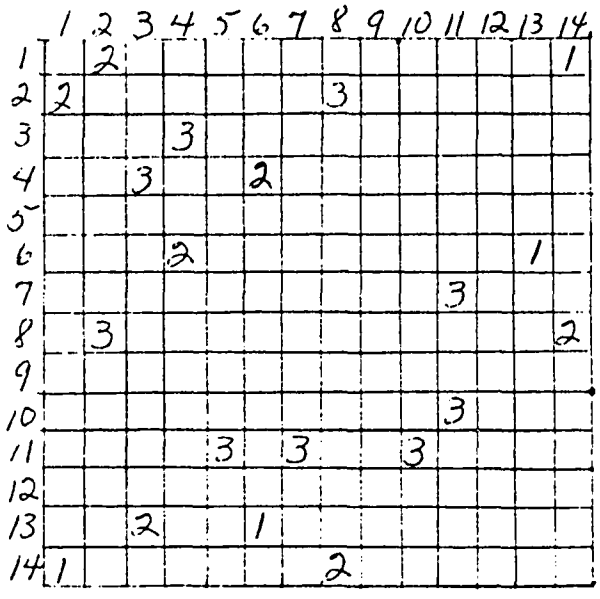

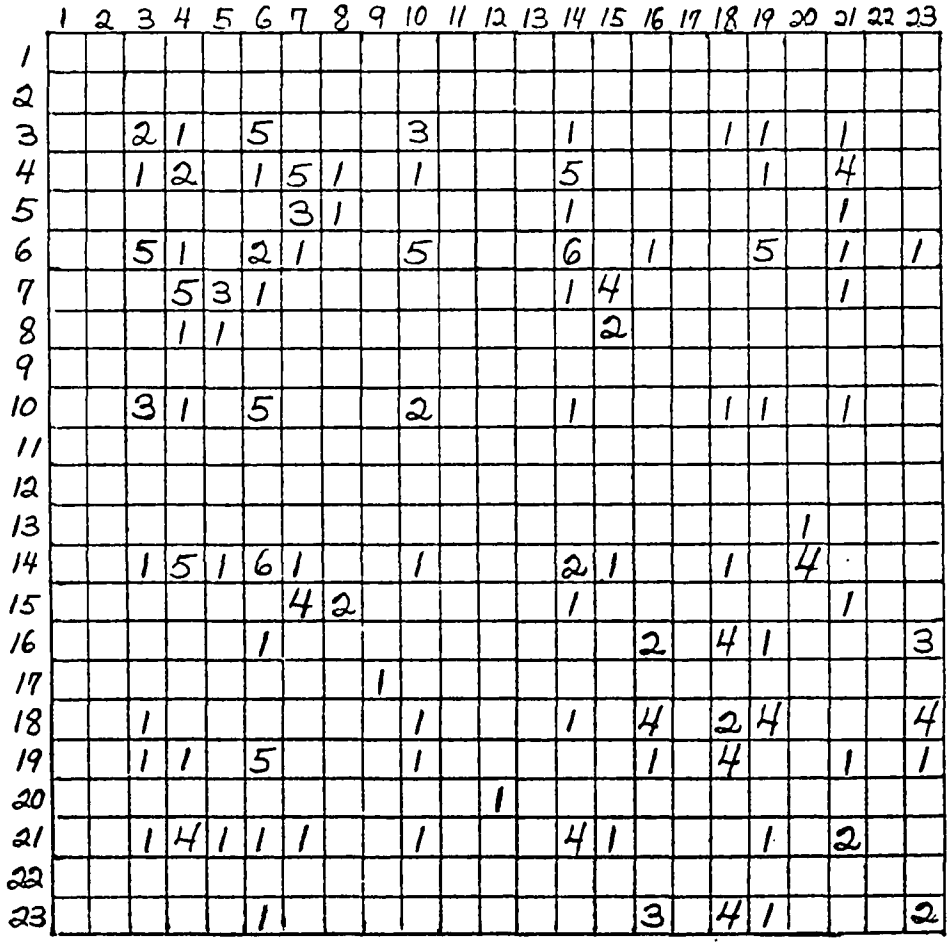

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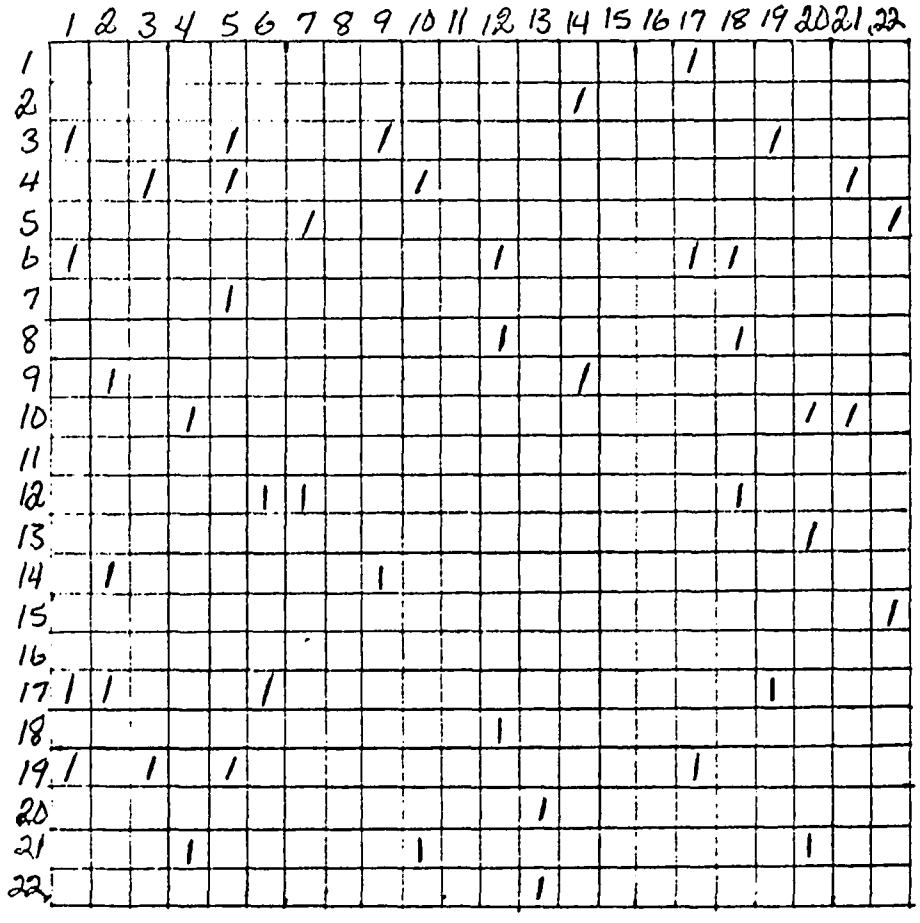
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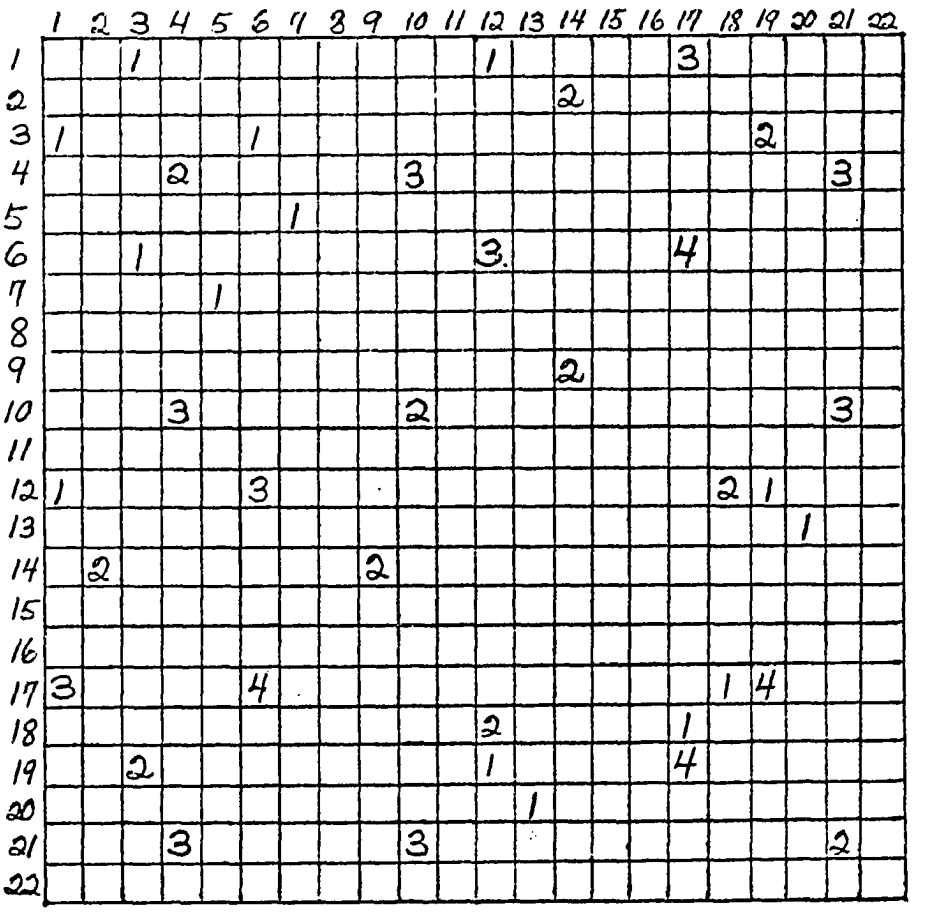
SCHOOL N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17 3 4 1 4
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19 2 1 4
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22

APPENDIX F

EXPECTATION SCORES AND INFORMAL GROUP NUMBERS

Respondent	School A	School B	School C	School D	School E
1	79	51 (1)	80	81	66 (1)
2	71	79 (2)	72 (4)	81 (1)	72 (1)
3	78	53 (1)	72 (3)	92	
4	62 (1)	68	56	90 (1)	46 (2)
5	67	78	66 (4)	87	63 (3)
6	73 (1)	68	60 (1)	42	55 (3)
7	73 (1)	63 (1)	63 (2)	75	79
8	52 (1)	50	75 (2)	74	49 (2)
9	58 (2)	64	48	31	70 (3)
10	87 (3)	62	58	74 (1)	67 (1)
11	62 (2)	65	63 (1)	75	89
12	77	80 (1)	63 (4)	66 (1)	74 (1)
13	71	73 (1)	60 (3)	57	73
14	77	83	68		76
15	77	78 (2)	48		46 (2)
16	78 (2)	107	77 (3)		81 (1)
17	65 (3)	84 (2)	60		80
18	71	66	68		72
19	84 (3)	73	95		
20			72 (1)		
21			70		
22			73 (1)		
23			76		
24			58 (2)		
25			65		
26			67 (3)		

Respondent	School F	G	H	I	J
1	107	73 (3)	78	77 (2)	99 (1)
2	67	52 (3)	79 (3)	67 (2)	61
3	59 (1)	82 (1)	50 (1)	55	75 (2)
4	61 (3)	76	84 (2)	66	67
5	59	90 (1)	58 (2)	77 (2)	66
6	70 (2)	87 (2)	75	67 (1)	75 (2)
7	51 (1)		69	75	68
8	83	56	74	51	56
9	78 (1)	46	72 (1)	75	79
10	72 (2)	81 (1)	57	62 (1)	90 (4)
11	80 (3)	64 (3)	57	86	76 (3)
12	83 (1)	94	87	68	83 (1)
13	83	97	67 (3)	63 (2)	64
14	72 (2)	73 (2)	85	61	63
15	57 (3)	75 (2)	92 (1)	78 (1)	84 (4)
16	67 (1)	115 (1)	66 (3)	32 (2)	51
17	71 (1)	66 (2)	65 (1)		81 (2)
18			67 (2)		54
19					65
20					75 (3)
21					67
22					77 (3)
23					104 (1)
24					62 (4)
25					59

Respondent	School K	School L	School M	School N
1	75 (1)	70 (1)	95	78 (2)
2	84 (1)	89 (1)	80	85 (3)
3	76 (4)	61 (2)	89 (1)	79 (4)
4	81 (5)	46 (2)	75 (4)	89 (1)
5	70 (1)	52 (3)	62 (3)	71 (4)
6	79	69 (2)	81 (1)	71 (2)
7	72 (1)	77 (3)	71 (3)	74
8	76	96 (1)	110	58
9	66 (4)	77	55	57 (3)
10	78	83	81 (1)	84 (1)
11	74	64 (3)	54	76
12	78 (3)	106	76 (5)	59 (2)
13	76 (5)	73	70 (5)	75
14	83 (2)	80	82 (4)	70 (3)
15	61		74 (3)	45
16	65 (2)		66 (2)	71
17	69 (4)		63	68 (2)
19	92		82	67 (4)
20	56		65 (5)	98 (1)
21	80		69 (4)	98 (1)
22	68		87	75
23	68 (5)		68 (2)	
24	79 (3)			
25	63			
26	76			
27	75 (3)			
28	97			
29	88 (1)			