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A COMPARATIVE STUDY OF THE SCHOOL CLIMATE AS PERCEIVED BY TEAM TEACHERS AND NON-TEAM TEACHERS IN SELECTED MIDDLE SCHOOLS IN MICHIGAN

By

Chantavit Chaemchaeng

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ABSTRACT

A COMPARATIVE STUDY
OF THE SCHOOL CLIMATE AS PERCEIVED
BY TEAM TEACHERS AND NON-TEAM TEACHERS
IN SELECTED MIDDLE SCHOOLS
IN MICHIGAN

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This study assessed and compared the organizational climate perceptions of middle school teachers between team teachers and non-team teachers from team teaching and non-team teaching schools. A special concern for this investigation was to discover any evidence which might lead educational administrators and teachers to be aware of the effect, if any, of team teaching on the teachers' perception of the organizational climate.

The population of the study was composed of three groups of teachers: team teachers, non-team teachers in team teaching schools and non-team teachers in non-team teaching schools. These teachers were from eight selected middle schools in Michigan. They were teachers in the major subject areas (language arts, social studies, math and science).

The perception of organizational climate was measured

by responses of teachers of each school using the Organizational Climate Description Questionnaire by Halpin and Croft. Multivariate analysis of variance was used to analyze the data. In the test across the three groups differences were statistically significant at the .05 level with 16 and 360 degrees of freedom.

Post Hoc comparisons followed to test the specific pairs: team teachers versus non-team teachers in team teaching schools; team teachers versus non-team teachers in non-team teaching schools; and team teachers and all of the non-team teachers from both types of schools. Each was tested at the .05 level with 8 and 180 degrees of freedom.

No statistically significant difference was found for the first pair compared. The tests for the second and third pairs showed statistically significant differences between the two groups being compared in each test. The specific scales which produced the significance in both comparisons were Disengagement, Hindrance and Consideration. Non-team teachers perceived the teachers' behavior aspect of the organizational climate, Disengagement and Hindrance, as more open than did the team teachers. The team teachers perceived the principals' behavior, Consideration, as more open than did the non-team teachers. There was some apparent contradiction here between the findings in the scale scores for

both groups. The results do not justify a conclusion as to which group perceived a more open climate on the whole.

The profiles of the three groups, however, all resemble the Open profile described by Halpin and Croft. Only the scale scores on Consideration make them a little less than a completely Open profile. Although the statistical analysis turned up significant results for the second and third pair, the charts only show minor differences between all three groups.

ACKNOWLEDGMENTS

"Correction does much,
but encouragement does even more."

The author is privileged to receive both from all of the committee members. Although the gratitude felt toward all who have helped is deep, the opportunity for its expression is brief and inadequate.

To the following TEACHERS, the author wishes to express the deepest appreciation. Dr. Louis G. Romano, advisor and chairman of the committee, whose patience, understanding and friendship throughout the course of the study will always be treasured. Dr. Ralph P. Barrett and Dr. Louise Sause have served on the committee in their fullest capacity and very often on short notices. Dr. Archibald B. Shaw has spent countless hours listening and advising on the academic as well as personal problems throughout the years the author stayed in this country.

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The author is very deeply in debt to her parents, Watana and Chawee, for their constant supports, sacrifice and never-ending love. Brothers, Winichai and Wirachat, and sister, Chailaiwan, have provided warmth and family atmosphere. The care, tolerance, understanding and love of Dr. Vuti Laosunthorn have helped the author endure the difficult times during her educational undertaking. The author could not have completed the study without them.

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CHAPTER I

BACKGROUND TO THE PROBLEM

Introduction

The middle school concept of school organization for preadolescents is designed to meet the challenge by presenting the learner with schooling experiences that are relevant to his needs and interests, to his maturity, and to his goals at a particular time in his development. Functionally and structurally different from the organization of the junior high school, the middle school seeks to serve more effectively the intellectual, emotional, social, and physical needs of the child today.

To bring about an acceptable degree of success in carrying out the middle school concept may require involvement not only by the administrators but also by the entire school staff. Somehow, the principal is often expected to maintain a school environment which allows for personal initiative and at the same time fosters the development of a professional attitude toward and commitment to the improvement of teaching methods. Thomas C. Biondolillo, then elementary principal of Byron-Bergen Central School of New York, experienced in his school:

> ". . . that one of the best ways to help teachers is through a team approach. When teachers are allowed and encouraged to participate as a team in planning, teaching, and evaluating, they usually become enthusiastic about instructional improvement. Teachers who are involved as part of a grade level or content area team have the support of the team in their commitment to improvement of educational methods. New techniques demand time and energy, and at first the results may be discouraging. It is easier to cope with frustration when there are team members to encourage continuing efforts."[1]

Team teaching, a new pattern of school organizationa which has emerged in American education since 1954, has rapidly assumed the dimensions of a major educational movement. Starting with a few pilot projects in 1956 and 1957, the movement had spread out to several hundred communities distributed widely throughout the country, and plans under development suggest increasingly rapid growth.[2] Unlike some other educational innovations, team teaching has gained strong ground and wide acceptance in schools. It is considered one of the eighteen major characteristics of the middle school by Romano, Georgiady and Heald.[3] Nancy F. Sprague, like many

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[1]Thomas C. Biondolillo, "Principal's Role: Helping Teachers Improve Themselves," Instructor, March, 1972, p. 39.

[2]Judson T. Shaplin and Henry F. Olds, Jr., edited. Team Teaching. (New York: Harper and Row, 1964), p. 1.

[3]Louis G. Romano, Nicholas P. Georgiady and James E. Heald, edited. The Middle School: Selected Readings on an Emerging School Program. (Chicago, Ill.: Nelson-Hall Company, 1973), pp. 185-214.

other educators, takes her stand in support of team teaching by saying:

> ". . . , implementing the team concept in the middle schools should be a high priority of school administrators. Not only does the team approach have the potential of creating warm and friendly atmosphere, but it also enhances effective communication, decision-making, and supervision within a school."[4]

Another believer is Lobb who explains:

> "The keystone in a rationale for team teaching is the belief that the total accomplishment of the group can be greater than the sum talents of the individual teachers. It is the hope that the cooperative endeavor, the synergy, will produce results that are greater and more far-reaching than isolated individual efforts."[5]

Statement of the Problem

The problem to be studied here is what effects team teaching may have on middle school teachers' perceptions of their schools' organizational climate. More specifically comparisons will be made among three groups of teachers in selected Michigan middle schools to discover what if any differences in their perceptions of climate are related to whether they are team teachers, non-team teachers in team

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[4]Nancy F. Sprague, "Involving the Assistant Principal on the Administrative Team," N A S S P Bulletin, October, 1973, p. 29.

[5]M. Delbert Lobb. Practical Aspects of Team Teaching. (San Francisco, Calif.: Fearon Publishers, Inc., 1964), p. 8.

teaching schools, and teachers in non-team teaching schools.

Research tells us that the teaming of teachers to achieve certain desirable instructional ends has become a highly accepted and perhaps the most compelling and attractive instructional approach to inquiry, transmittal of subject matter, use of teacher talent, and flexible grouping of students known.[6]

The research dating back to the Norwalk Plan (1960-1961) has centered primarily on the effectiveness of team teaching as a new or alternative instructional method. It has dealt mostly with the effects of team teaching on students' achievement, students' adjustment, teachers' attitudes, and parents' attitudes. Or otherwise, as pointed out by Anderson,[7] it is merely the testimonial evidence from teachers, pupils, and parents, or the observed achievement scores. Another vitally important dimension of team teaching, its effect on the organizational climate of the school, seems to have been neglected.

The broad definition of team teaching allows a wide variety of interpretations and practices. Goodlad, Klein and

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[6]William Goldstein, "Problem in Team Teaching," Clearing House, March, 1967, p. 83.

[7]Robert H. Anderson. Teaching in a World of Change. (New York: Harcourt, Brace and World, Inc., 1966), p. 82.

Associates,[8] who conducted a study of a sample of 67 schools in the United States, reported, "On occasion, the team teaching label was applied to a practice of turning the class over to specialists for one or more periods of the day." Team teaching was also found to label "a system of exchanging children among teachers for part or all of the day."[9] Goodlad, Klein and Associates elaborated further that "When teachers moved about from room to room, it was to 'trade' subjects, not to work as part of a planned activity. Although team teaching was claimed by a substantial number of schools, we found only occasional instances of team planning, initiating, teaching and evaluating."[10]

The description of the many organizational patterns that are called team teaching will be discussed in detail in the review of literature in Chapter II. The wide variety in the definitions leads to difficulty in assessing the findings in a number of studies in team teaching. This fact underlies the decision to conduct research in selected middle schools along the triangular area of Lansing-Battle Creek-Ann Arbor

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[8] John I. Goodlad, M. Frances Klein and Associates. Looking Behind the Classroom Door. (Worthington, Ohio: Charles A. Jones Publishing Company, 1974), p. 70.

[9] Ibid., p. 70.

[10] Ibid., p. 87.

that have the kind of team teaching which meet a more restricted definition of team teaching set for this study.

Significance of the Study

The administrator is the key person in the school, who clarifies its goals and helps people in the school play effective roles in achieving these goals. He should also provide the opportunity for the type of cooperative group planning that multiplies and enhances individual effort through teamwork and through the stimulation resulting from the interplay of people and ideas. In this way, varying purposes and personalities merge into a unified, creative effort to improve the educational program.

One way of providing such an opportunity is through the adoption of team teaching. Team teaching, in essence, reflects the description of the above statement. Its nature is best represented in the following narration by Judson T. Shaplin, a pioneer in the development of team teaching:

> " . . . that teachers are brought into a close working relationship for the joint instruction of the same group of students. This involves a change in the prevailing personnel structure of most schools. Prior to team teaching the assignment of instructional tasks and student groupings were matters of administrative decision; with team teaching these matters become the joint responsibility of the members of the team. Implicit, if not explicit, in this working relationship is the assumption that the team teachers will share

> instructional tasks and goals; plan together; assign appropriate tasks to individual team members; see each other teach; have access to each other's classroom; join together in the evaluation of instruction; share information about the students for whom they are jointly responsible; and hold discussions, based upon common observations, of teaching and efforts of teaching. An individual teacher is no longer assigned proprietary rights over HIS classroom and HIS students."[11]

In the team situation, interaction of the feelings, beliefs, attitudes, and values of the members can be expected. Since such interaction of members within a job setting constitutes the organizational climate of the school, one may ask, then, what type of climate profile a school will have as a result of the employment of team teaching. The primary concern of this study is to discover differences in perceptions of the organizational climate of the schools that may exist between team teachers and non-team teachers in the same schools, and between team teachers and non-team teachers in the schools with no team teaching.

Organizational climate is an important aspect in the administrative process that can no longer be ignored. It has become a major concern to school administrators. As the administrator creates an atmosphere in which faculty members assume increasing responsibility, they may want to know its

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[11]Shaplin, op. cit., pp. 8-9

contribution to school climate. Being the head of the organization, the school, the principal becomes concerned with the kind of organizational climate generated in his school. To vividly explain the importance of such matter, Halpin states: "Analogously, personality is to the individual what Organizational Climate is to the organization."[12]

More and more of this kind of study is being done in schools, where it is helpful in developing more penetrating insight into effective administrative practices. "Organizational climate assessment data can be extremely helpful in a practical way if . . . it is proffered to the school (and administrative staff) as feedback for their analysis, evaluation, and discussion," suggest Owens.[13] In addition, this kind of study will aid school personnel administration in the procurement of school professional personnel, principals as well as teachers. It will also provide information for the principal in decision-making concerning initiation of instructional innovations. This study is done with the hope that more schools will be encouraged to speed up constructive change in the program.

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[12]Andrew W. Halpin. Theory and Research in Administration. (New York: The Macmillan Company, 1966), p. 131.

[13]Robert G. Owens Organizational Behavior in Schools. (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1970), p. 191.

Limitations of the Study

This study is limited to selected public middle schools in the triangular area of Lansing, Battle Creek and Ann Arbor in the state of Michigan. The findings may be applied only to these schools or other schools which have similar characteristics. The quality of the staff and the students' achievement are not considered in this research. The wide range of training and experience of the teachers may or may not have bearing, but the study does not explore that possibility. The instrument selected to assess the profile of the organizational climate as perceived by the team teachers and the non-team teachers in these selected middle schools is the Organizational Climate Description Questionnaire (OCDQ), prepared by Halpin and Croft and used extensively in research studies. Since the OCDQ was developed prior to the recent rise in teacher power and militancy, some items of the instrument may be responded to with a different frame of reference. No attempt will be made to assess this possibility.

Definition of the Terms

Organizational Climate: As used in this study, derives from Halpin's statement, "Analogously, personality is to the individual what Organizational Climate is to the organization." Climate is the result of the complex

interaction of feelings, beliefs, attitudes and values, both conscious and unconscious, of members within a job setting.

Team Teaching: An instructional organization that involves two or more members of the teaching personnel working together and holding responsibility for all or a significant part of the instruction of the same group of students assigned to them.

Non-team Teaching: An instructional organization wherein one teacher works individually in and holds responsibility for the instruction of his special subject area for one or more groups of students.

Team Teachers: Full-time teachers who are members of the teaching team in the major subject areas (language arts, social science, mathematics, and science).

Non-Team Teachers: Major subject areas (language arts, social science, mathematics, and science) full-time teachers who are not participating in team teaching.

Middle School: School administrative unit of any combination of grade levels from 5 through 8 providing educational programs to meet the needs of the preadolescent students.

Team Teaching School: A middle school employing team teaching by at least one team unit.

Non-Team Teaching School: A middle school employing absolutely no team teaching.

Objectives

The primary question of interest here is to discover what effects team teaching may have on middle school teachers' perceptions of their schools' organizational climate. More specifically comparisons will be made among three groups of teachers: team teachers, non-team teachers in team teaching schools, and non-team teachers in non-team teaching schools.

General Hypotheses

There are no differences in the perceptions of the organizational climate among team teachers, non-team teachers in team teaching schools, and teachers in non-team teaching schools on all of the eight subtests as measured by the OCDQ.

Hypothesis A: There are no differences between the perceptions of organizational climate in selected middle schools held by team teachers and by non-team teachers in team teaching schools as measured by the OCDQ.

Hypothesis B: There are no differences between the perceptions of organizational climate in selected middle schools held by team teachers and by non-team teachers in non-team teaching schools as measured by the OCDQ.

Hypothesis C: There are no differences between the perceptions of organizational climate in selected middle schools held by team teachers and by non-team teachers in

both team teaching and non-team teaching schools as measured by the OCDQ.

Test Hypotheses A's

A1: There is no difference on the Disengagement scale between the team teachers and non-team teachers in team teaching schools.

A2: There is no difference on the Hindrance scale between the team teachers and non-team teachers in team teaching schools.

A3: There is no difference on the Esprit scale between the team teachers and non-team teachers in team teaching schools.

A4: There is no difference on the Intimacy scale between the team teachers and non-team teachers in team teaching schools.

A5: There is no difference on the Aloofness scale between the team teachers and non-team teachers in team teaching schools.

A6: There is no difference on the Production Emphasis scale between the team teachers and non-team teachers in team teaching schools.

A7: There is no difference on the Thrust scale between the team teachers and non-team teachers in team teaching schools.

A8: There is no difference on the Consideration scale between the team teachers and non-team teachers in team teaching schools.

Test Hypotheses B's

B1: There is no difference on the Disengagement scale between the team teachers and non-team teachers in non-team teaching schools.

B2: There is no difference on the Hindrance scale between the team teachers and non-team teachers in non-team teaching schools.

B3: There is no difference on the Esprit scale between the team teachers and non-team teachers in non-team teaching schools.

B4: There is no difference on the Intimacy scale between the team teachers and non-team teachers in non-team teaching schools.

B5: There is no difference on the Aloofness scale between the team teachers and non-team teachers in non-team teaching schools.

B6: There is no difference on the Production Emphasis scale between the team teachers and non-team teachers in non-team teaching schools.

B7: There is no difference on the Thrust scale between the team teachers and non-team teachers in non-team teaching schools

B8: There is no difference on the Consideration scale between the team teachers and non-team teachers in non-team teaching schools.

Test Hypotheses C's

C1: There is no difference on the Disengagement scale between the team teachers and non-team teachers in both team teaching and non-team teaching schools.

C2: There is no difference on the Hindrance scale between the team teachers and non-team teachers in both team teaching and non-team teaching schools.

C3: There is no difference on the Esprit scale between the team teachers and non-team teachers in both team teaching and non-team teaching schools.

C4: There is no difference on the Intimacy scale between the team teachers and non-team teachers in both team teaching and non-team teaching schools.

C5: There is no difference on the Aloofness scale between the team teachers and non-team teachers in both team teaching and non-team teaching schools.

C6: There is no difference on the Production Emphasis scale between the team teachers and non-team teachers in both team teaching and non-team teaching schools.

C7: There is no difference on Thrust scale between the team teachers and non-team teachers in both team teaching and non-team teaching schools.

C8: There is no difference on Consideration scale between the team teachers and non-team teachers in both team teaching and non-team teaching schools.

Overview

Chapter I develops the frame of reference for the entire study. Introduction, statement of the problem, significance of the study, basic assumptions, definition of the terms, and general hypotheses and test hypotheses are presented in this chapter.

The literature relevant to the study is reviewed in essentially a thematic approach in Chapter II. This includes the related researches in the investigation of the organizational climate, team teaching, and middle school.

Chapter III describes the research methodology, sampling techniques, implementation of survey instrument, and statistical treatment of the data.

The presentation of the research findings in tables and charts and analysis of multivariance of the data constitute Chapter IV. The summary of the findings begins Chapter V. The conclusions and implications for further study end the chapter.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

The literature and research reports reviewed here are reported under three subject headings. First is a summary of relevant material about the middle school as an emerging institution. Then follows a section on team teaching as it is variously understood and reported. The last section will deal with the phenomenon widely recognized as organizational climate.

Middle School

In the nineteenth century the eight-grade elementary school and the four-year secondary school had become the dominant pattern of public school organization. By about 1910, a small but growing number of school districts adopted the six-year elementary and six-year secondary plan. With the extreme age range between grade seven and twelve, it came to seem practical to put half the grades in a junior high and half in a senior high school.

At the same time, shocking studies of dropouts called attention to the need for programs which better met the needs of many youngsters in grades seven through nine. A change in

the handling of these students was hastened after publication of Hall's classic Adolescence, which looked upon the young adolescent as a "new breed" passing through a period of ferment and upheaval.[14] Changes in educational philosophy, under the leadership of Dewey, demanded reform and reaction against the traditional school, and adoption of the junior high school became a "thing to do," a dramatic and progressive way to demonstrate a determination to eliminate the weakness of schools and the past.

However, by the middle of the twentieth century, arguments for the junior high school had begun to lose force. The legal age for children to leave school had been raised to sixteen in most states and to eighteen in others. The mean age of puberty had dropped approximately one year.[15] At the same time, educators began to question whether sixth grade youngsters might relate better to a social atmosphere which embraced seventh and eighth graders. In addition, the junior high school had seemed to many to have become a social copy of the senior high school with "excessive emphasis on

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[14]Stanley G. Sanders, "Challenge of the Middle School," in Romano, et al, edited, op. cit., pp. 6-27.

[15]Margaret Mead, "Are We Squeezing Out Adolescents?," The Education Digest, Vol. 26: No. 3, November, 1960, pp. 5-8.

activities such as varsity athletic teams, pep rallies, marching bands, cheerleaders, class proms, and even graduation exercise."[16] The curriculum for junior high school also tended to parallel that of the high school. Very few core or interdisciplinary programs existed in these schools, making the opportunity for student exploration very restricted. This view was stated by several educators, including Conant,[17] Gatewood and Walker,[18] and DeVita.[19]

Alexander and associates[20] sum up that interest in a new middle school stems in part from dissatisfaction with what the junior high school has become, not with the original conception of function. However, the junior high school of the early twentieth century was intended to be a "middle"

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[16]Donald E. Overly, et al. The Middle School: Humanizing Education for Youth. (Ohio: Charles A. Jones Publishing Company, 1972), p. 19.

[17]James Conant. The Middle School. A position paper published by Michigan Association of Middle School Educators, 1975, p. 5.

[18]Thomas E. Gatewood and George H. Walker, Jr. A Comparative Study of Middle Schools and Junior High Schools in the State of Michigan. June, 1971, ERIC No. 054-530.

[19]Joseph C. DeVita, et al. The Effective Middle School. (New York: Parker Publishing Company, Inc., 1970), p. 17.

[20]William Alexander, et al. The Emergent Middle School. (New York: Holt, Rinehart and Winston, Inc., 1968), p. 4.

school. This is evident in Popper's The American Middle School, quoting him saying that "what over the years we have come to know as the Junior High School is institutionally America's Middle School."[21]

Although Popper[22] proposed a grade 7-9 organization as "a revitalization program" for "the middle school of tomorrow," Alexander and associates[23] disagreed and supported the 6-8 organization. The middle school of the second half of the twentieth century has been proposed as an organization of grades 6-7-8. However, derivations can be found, some middle schools are composed of only grades 7 and 8, and others includes grades 5-6-7-8.

Is the middle school anything more than a junior high school? This question has been debated, argued, cussed and discussed for more than a decade. While the controversy continues to rage, a body of definitions of the middle school that bear a remarkable amount of similarity to each other has developed. Alexander[24] called a middle school:

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[21]Samuel H. Popper. The American Middle School: An Organizational Analysis. (Waltham, Mass.: Blaisdell Publishing Company, 1967), p. xi.

[22]Ibid., p. xii.

[23]Alexander, et al, op. cit., p. 4.

[24]Ibid., p. 5.

> "A school providing a program planned for a range of older children, preadolescents, and early adolescents that builds upon the elementary school program for earlier childhood and in turn is built upon by the high school's program for adolescents."

Georgiady and Romano[25] define it as:

> "An educational unit with a philosophy, structure and program which will realistically and appropriately deal with 11 to 14 year olds as they indeed are and behave. Its commitment is primarily to the youth it seeks to serve."

Midjaas[26] describes the middle school in relation to his effort to humanize school curriculum:

> "The middle school may be a good place to begin for it is the middle school which has recognized the very special needs of young people between the ages 10 and 14 years, it is the middle school which has emphasized the importance of wide exploratory activities as these young people try to understand themselves and others, it is the middle school which encourages a warm and supportive environment for learners who are no longer children and not yet adults, and it is the middle school which has thus far escaped the rigid and stereotyped curriculum which characterizes so much of education."

DeVita and others[27] give a brief definition of middle school as follows:

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[25]Louis Romano, guest editor. Michigan Journal of Secondary Education. (Michigan Association of Secondary School Principals, Ann Arbor, Michigan, Summer 1971).

[26]Carl L. Midjaas, "The Middle School: An Opportunity for Humanized Education." An address delivered to the Northern Michigan University Planning Symposium. (Marquette, Michigan, May 8, 1970), p. 4.

[27]DeVita, et al, op. cit., p. 26.

> "The middle school is a school that tries to structure a child's education for him and around him. It considers who he is, where he is, what his needs are, and what his potential is."

The middle school concept rapidly grew in popularity during the 1960's. The Research Division of the National Education Association reported in a survey conducted in 1965 of the growing number of middle schools scattered throughout the country. Cuff[28] reported in his study that in the 1965-1966 school year 499 middle schools were operating. Alexander[29] reported 1,101 middle schools in his 1968 survey. Tyrrell[30] pointed out an increase in number of middle schools to at least 1,300 by the school year 1969-1970. The most recent study by Raymer[31] in 1974 showed a total of 1,906 middle schools in the United States.

A carefully thought out philosophy is essential as a

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[28]William A. Cuff, "Middle Schools on the March," National Association of Secondary School Principals Bulletin, Vol. 57, February, 1967, pp. 83-86.

[29]Willaim M. Alexander. A Survey of Organizational Patterns of Reorganized Middle Schools. (Washington, D.C.: USOE, Bureau of Research, 1968), p. 10.

[30]Ronald W. Tyrrell, "The Open Middle School: A Model for Change," National Association of Secondary School Principals Bulletin, Vol. 64, April, 1974, pp. 62-66

[31]Joe T. Raymer. A Study to Identify Middle Schools and to Determine the Current Level of Implementation of Eighteen Basic Middle School Characteristics in Selected United States and Michigan Schools. (Unpublished Ph.D. dissertation, Michigan State University, 1974), p. 77.

the preparation for adulthood.

5. Physical Experiences - student involvement in the program as a participant rather than as a spectator.
6. Intramural Activities - student involvement in the program as a participant.
7. Team Teaching - opportunity for teacher talents to reach greater number of students and for teacher weakness to be minimized.
8. Planned Gradualism - experiences the middle school provides to assist early adolescents in making the transition from childhood dependence to adult independence, thereby helping them bridge the gap between elementary school and high school.
9. Exploratory and Enrichment Studies - to widen the range of educational training, and enrich the student's concept of himself and world around him.
10. Guidance Services - puberty and its many problems require expert guidance for the youngsters. Both group and individual guidance services for all students are desirable.
11. Independent Study - child's own intellectual curiosity motivates him to carry on independently of the group, with the teacher serving as a resource person.
12. Basic Skill Repair and Extension - basic education program should be extended in the middle school because of individual differences, some youngsters have not entirely mastered the basic skills.
13. Creative Experience - opportunities for students to engage in activities involving divergent thinking, exploration of various avenues to various possible answers and expression of inner personal feelings.
14. Security Factor - need for someone in school that he can be comfortable with: a teacher who knows him well and whom he relates to in a positive manner, and a peer group that meets regularly.
15. Evaluation - should be personal, positive in nature, non-threatening, and strictly individualized.
16. Community Relations - develop and maintain programs to inform, to entertain, to educate,

and to understand the community. Encourage the use of school facilities by community groups.

17. Student Services - such as health services, counseling services, testing, are desirable. Additional services can be derived from community, county and state agencies.
18. Auxiliary Staffing - includes volunteer parents, teacher aides, clerical aides, student volunteers, and the like.

Properly interpreted, the middle school movement is more than a mere change in name, another shifting of grades, or different organizational arrangement. According to Atkins,[34] "it is a fundamental bid to reassert its independence from both elementary and the secondary school. It belongs to neither; it has an integrity of its own derived from the special needs of the age group it serves."

The concept upon which it is built is a complex one. The greatest danger for the middle school is that it will be misinterpreted, oversimplified, and flattened into a prepackaged format. Another pitfall is that its proponents will become discouraged if it does not bring instantaneous improvements in the quality of learning. It might fall victim to premature evaluation or overselling. There is a chance, too,

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[34]Neil P. Atkins, "Rethinking Education in the Middle," in James E. Hertling and Howard G. Getz, edited, Education for the Middle School Years: Readings. (Illinois: Scott, Foresman and Company, 1971), p. 23.

that it will become an oasis, however, enlightened, which will increase rather than ameliorate the articulation problems problems between both the lower and the upper school.

Team Teaching

Being a part of the middle school, team teaching is likely to have similar pitfalls. The precautions given in the case of the middle school can also be applied to the team teaching concept.

Team teaching was conceived by Francis Keppel, former Dean of the Harvard Graduate School of Education and Judson T. Shaplin, former Assistant Dean of the Harvard Graduate School of Education. However, Robert H. Anderson has come to be regarded by name as "the father of team teaching," through his years of leadership in implementing this concept. Much of this professional interest has undoubtedly been stimulated by the Committee on Staff Utilization, appointed by the National Association of Secondary School Principals and supported by the Fund for the Advancement of Education, and by its chief spokesman and secretary, J. Lloyd Trump. Each year since 1958 this Committee has issued extensive reports of projects which it has sponsored.

In 1958 team teaching was barely mentioned in the annual collection of these reports; only one school system appeared

to develop a team teaching project during the 1956-1957 period reported.[35] In contrast, in the 1961 annual Bulletin more than half of the reports specifically mention team teaching. Trump has written pamphlets which encourage experimentation with staff utilization and which indicate ways by which experiments may be undertaken. Following his lead, many schools have started team teaching.

The keystone in a rationale for team teaching is the belief that the total accomplishment of the group can be greater than the sum talents of the individual teachers. It is the hope that the cooperative endeavor will produce results that are greater and more far-reaching than isolated individual efforts.[36]

In insuring the success of the educational enterprise, or any kind of enterprise for that matter, group productivity seems to receive greater emphasis than individual productivity. This notion is supported by Blua's "Cooperation and Competition in a Bureaucracy."[37] A cooperative approach to task

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[35]Judson T. Shaplin and Henry F. Olds, Jr., edited. Team Teaching. (New York: Harper and Row, 1964), p. 4.

[36]Lobb, op. cit., p. 8.

[37]Peter M. Blau, "Cooperation and Competition in a Bureaucracy," The American Journal of Sociology, Vol. 59: No. 6, May, 1954, pp. 530-535.

performance would, on the basis of Blau's study, appear to be advantageous in terms of furthering the total productivity of a group. While the competitive situation promoted increased productivity on the part of the most competitive individual in the group, the total production of the group was less than that of the cooperative group.

People become members of groups for many reasons. Verner and Newberry[38] present evidence that people are joiners and like to participate in all type of activities, many for the purpose of improving a situation or their own proficiencies. Team teaching brings teachers together to see other types of teaching and allow a more flexible approach to teaching. This joint responsibility, quoting Lobb,[39] "requires more than an informal or occasional involvement of two or more teachers who happen to have coincident plans." In other words, a good deal of planning, good staff relationship, and well balanced and integrated materials are required to provide a continuous vehicle for teacher growth, student learning, teacher involvement in key academic decision-making, teacher status, sound research, and modern

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[38]Coolie Verner and John S. Newberry, Jr., "Nature of Adult Participation," Adult Education, Vol. 8: No. 4, summer 1958, pp. 208-222.

[39]Lobb, op. cit., p.12.

evaluation.[40]

Shaplin[41] has developed a fairly broad definition of team teaching as:

> ". . . a type of instructional organization, involving teaching personnel and the students assigned to them, in which two or more teachers are given responsibility, working together, for all or a significant part of the instruction of the same group of students."

Chamberlin[42] calls it:

> ". . . a method of organizing teachers, children, space, and curriculum which requires several teachers, as a group, to plan, conduct, and evaluate the educational program for all of the children assigned to them."

Romano,[43] like other proponents of team teaching, proposes in a similar definition that team teaching is an instructional organization of "two or more teachers working together, who through planning and communication, jointly implement learning objectives for each individual student."

Dean and Witherspoon brought the concept of team teaching into perspective by saying:

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[40]William Goldstein, "Problems in Team Teaching," The Clearing House, Vol. 42: No. 2, October, 1967, pp. 86.

[41]Shaplin and Olds, op. cit., p. 15.

[42]Leslie J. Chamberlin. Team Teaching: Organization and Administration. (Columbus, Ohio: Charles E. Merrill Company, 1969), p. 16.

[43]Louis G. Romano. Team Teaching. Preliminary draft, 1975, p. 1.

> "The heart of the concept of team teaching lies not in details of structure and organization but more in the essential spirit of cooperative planning, constant collaboration, close unity, unrestrained communication, and sincere sharing. It is reflected not in a group of individual articulating together, but rather in a group which is a single, unified team. Inherent in the plan is an increased degree of flexibility for teacher responsibility, grouping policies and practices, and size of the groups, and an invigorating spirit of freedom and opportunity to revamp programs to meet the educational needs of children."[44]

Although team teaching takes a variety of formats, Romano[45] offers the following classifications: (1) interdisciplinary teaming, (2) block time teaming, (3) single discipline teaming, and (4) inter-aged or nongraded teaming.

1. Interdisciplinary Teaming - involves four teachers, one from each subject area (language arts, social studies, mathematics, and science), who share responsibilities over approximately 120 students. There are two approaches to this kind of teaming, the thematic approach and the pre and post testing approach. The first has to do with developing units of study around themes such as "Ecology," "Communication," "Transporta-

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[44]Stuart E. Dean and Clinnette F. Witherspoon, "Team Teaching in the Elementary School," Education Briefs No. 38, (Washington, D.C.: U.S. Department of Health, Education and Welfare, Office of Education, January 1962), p. 4.

[45]Romano, 1975, op. cit., pp. 1-3.

tion," etc. The other requires pretest for all students for the purpose of grouping them according to instructional needs. The post test is used to find out if the goal of the unit is met. All teachers teach each instructional area. Figure 2.1 shows the layout of the model for interdisciplinary teaming.

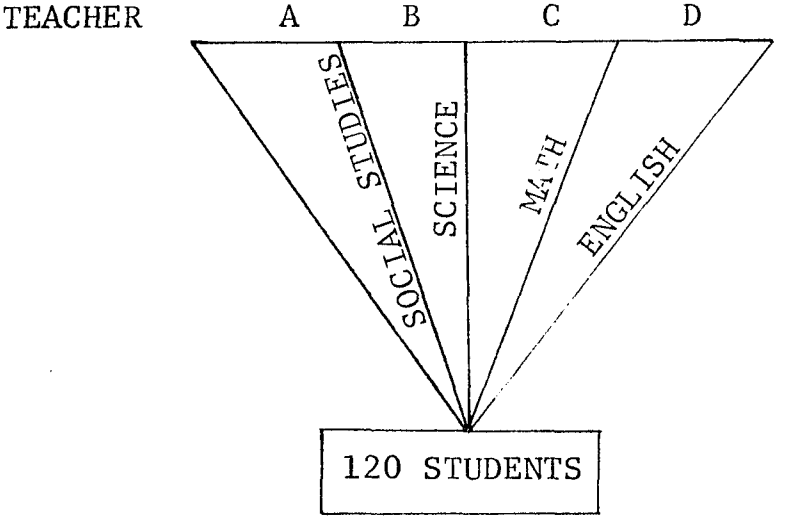

Figure 2.1 Model for Four Teacher Interdisciplinary Team.

2. Block Time Teaching - involves teachers from two instructional areas such as math/science or social studies/ language arts. Both teach each subject but one develops the plans for one instructional area. Both teachers work with two teams of students. (See Figure 2.2)
3. Single Discipline Teaming - involves two or more teachers in the same subject area who share responsibilities for that particular subject (see Figure 2.3).

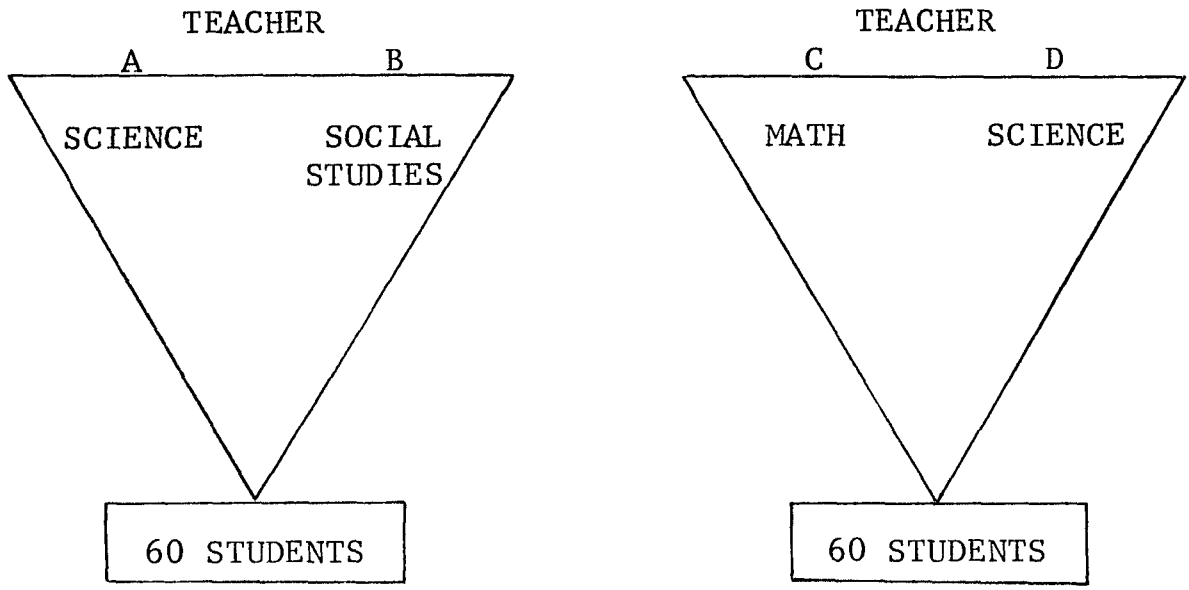

Figure 2.2 Model for Block Time Teaching.

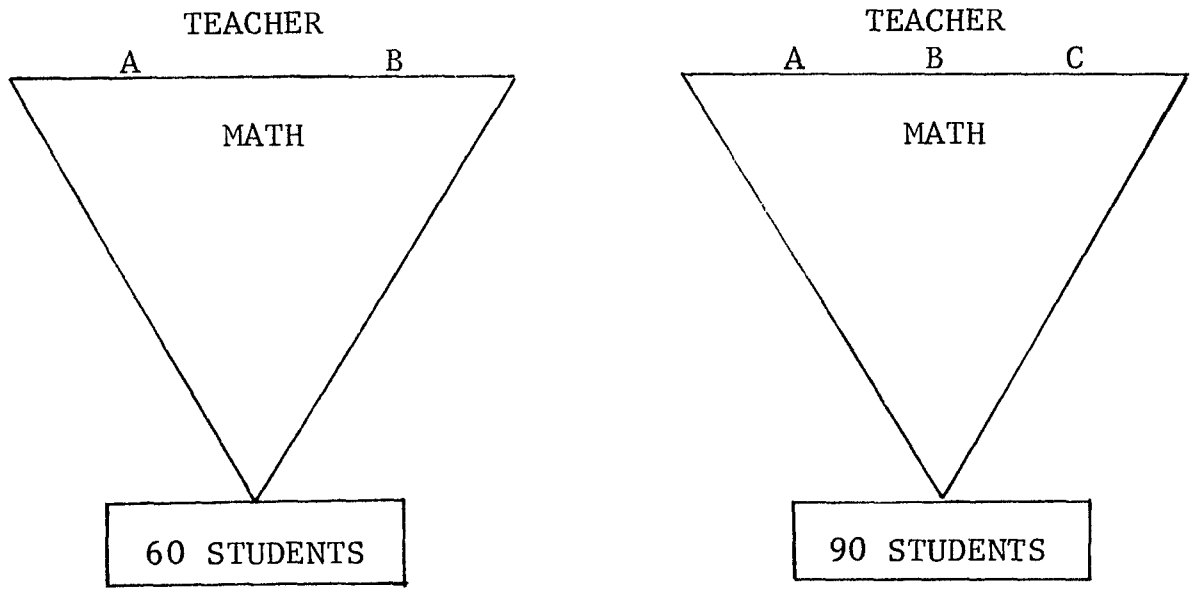

Figure 2.3 Model for Single Discipline Teaming.

4. Inter-aged or Nongraded Teaming - involves placing students on teams without regard to age or grade level. It can be used with all of the above types of team teaching.

Team teaching provides numerous advantages for administrative purpose, instructional improvement, and student learning experiences. These advantages can be summarized as follow:[46]

1. It provides a convenient administrative unit, smaller than department and larger than the individual class, for facilitating flexibility of grouping for instruction.

2. It provides responsibility of the team to take advantage of the opportunities offered to analyze the instructional needs of students, to provide optimum groupings for instruction, and to adapt curricula and teaching methods to these new arrangements.

3. It provides an organizational vehicle for specialization (a team of teachers in complementary skills, or a team of teachers in a single subject with various specialties) which may lead to improvements in instruction and to more effective use of teaching talent.

4. It provides a way of organizing for the improvement

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[46]Shaplin and Olds, op. cit., pp. 12-19.

of supervision in the schools (lack of time of the principals and supervisors) so that it becomes possible to assign greater responsibility for the curriculum and for the supervision of other teachers to those teachers who are more knowledgeable, more expert, and more willing and able to accept leadership.

The outlines of team teaching began to appear at Englewood, Florida and Carson City, Michigan in 1956. There were also team teaching projects being carried out in Norwalk, Connecticut, Flint, Michigan, Evanston Township, Illinois, Fort Wayne, Indiana, Wayland, Massachusetts, Montgomery County, Maryland, Palo Alto, California, Pittsburgh, Pennsylvania, and Norridge, Illinois. The Harvard-Lexington Program, which included school systems of Concord, Lexington and Newton, Massachusetts joining Harvard University in the School and University Program for Research and Development (SUPRAD), has developed many of the distinguishing features of the team approach, which is now being used with variations throughout the country. The Claremont Graduate School, in Claremont, California, with grants from Ford Foundation Fund for the Advancement of Education, instituted teaching teams in many of the schools in Southern California. The Claremont projects represents some of the best team teaching efforts in the nation.

Around 1964, research in team teaching conducted by

Bair and Woodward[47] showed that the impact of teaming on the teachers was generally positive. They also found that team teachers willingly worked longer hours.

Canton's Model School, an ESEA Title III project on team teaching begun in 1971, in Ohio, showed considerable success. Teachers' comments after one-year of participation in the program can be summarized in statements such as "I learn so much more now that I meet with other teachers rather than when I was in a self-contained room"; "Pupils' needs are being met so much better than ever before due to the team teaching and flexible grouping"; and "I have developed a need and desire to change old methods of organization and instruction, as well as a much keener sensitivity to the problems of other teachers."[48]

Other studies such as one by Samuels[49] found that students of junior high school age preferred team teaching,

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[47]Medill Bair and Richard G. Woodward. Team Teaching in Action. (Boston: Houghton Mifflin, 1964), p. 215.

[48]Wes Measel and Glen Fincher, "Team Teaching in Canton's Model School," Educational Leadership, Vol. 29:No. 6, March 1972, p. 522.

[49]S. Samuels, et al. The Influence of Team Teaching and Flexible Grouping on Attitudes of Junior High School students. Final report. (Albany: New York State Experimental and Innovation Programs, New York State Board of Education, Division of Research, 1969).

while that of Bowering and Splaine's[50] revealed that students perceived team teaching as being more effective. Foley[51] discovered a positive relation between the leadership behavior of the team leader and the morale of team members.

However, there are studies that indicate the probability of failure of team teaching when there are personality clashes, inability of most teachers to integrate materials and a lack of planning time. Dolan's study[52] of 180 midwestern teachers revealed that an overall measure of openness did not discriminate between teachers who had participated in a team teaching project and those who had not. It does appear, however, that innovations such as team teaching do not, either alone or in combination, result in detrimental effects on cognitive or effective outcomes.

Overall, the research to date indicates that such

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[50] D. J. Bowering and J. E. Splaine, "Team Teaching: Student Perceptions of Two Contrasting Models," Paper presented at the Association for Educational Communications and Technology convention, March 1974. (ERIC No. ED 086-240).

[51] Gerald F. Foley. A Study of the Relationships Between Team Leaders' Leadership Behavior and the Morale and Effectiveness of their Team Members. (Unpublished Ed.D. dissertation, State University of New York at Buffalo, 1971), p. 62.

[52] John A. Dolan. An Investigation of Participation-Influence in Decision Making and Organizational Climate as Perceived by Secondary School Team and Non-Team Teachers. (Unpublished Ph.D. dissertation, University of Tulsa, 1969) pp. 45-55.

innovations, when properly interpreted and implemented, may be a step toward educational improvement and are valid alternatives to the traditional mode of teaching.

Many educators believe that the self-contained classroom will not fully utilize the current developments in educational technology and that it cannot completely satisfy the need for greater individualization of the instruction. Nationally, there have been several attempts to change from the self-contained classroom concept to some organizational pattern that is more efficient both educationally and economically. Perhaps the most educationally effective teaching situation would be a one teacher-one student ratio; however, this pattern would obviously not be workable because of the financial and human support it would require. Nevertheless, providing individual attention is a desirable goal, and there are efforts to achieve it in the instructional organizations being investigated.

Team teaching is not a universal remedy for all that ails our traditional instructional practices. It is a method of organizing teachers, children, space, and the curriculum which emphasize flexibility and so may provide a teaching-learning climate in which a student can reach his fullest potential. It may be the means of meeting many of the current educational needs of this country, especially the

need for greater individualization of instruction and more knowledgeable teachers for the classrooms.

Organizational Climate

Organizational climate is a very general concept which may involve almost anything that happens in an organization. Climate is related to other terms such as situation, conditions, circumstances, and environment. These terms have been used by various sources to describe or explain the quality of organization-individual interactions or the differences in behavior of individuals and groups when faced with similar problems or tasks. Attempts to measure organizational climate have reflected the generality of the concept by soliciting, through a questionnaire format, the perceptions of members of organizations relative to a wide variety of topics presumed to be relevant to the climate which exists in the particular organization.

Although there are many ways of defining climate, in every case it refers to some aspect of the situation which affects the behavior of an individual or a group. Cornell[53] first used the term "organizational climate" and defined it as "a delicate blending of interpretations by persons in the

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[53]Francis G. Cornell, "Socially Perceptive Administration," Phi Delta Kappan, Vol. 36: No. 6, March, 1955, p. 222.

organization of their jobs or roles in relationship to others and their interpretations of the roles of others in the organization." Tagiuri[54] offers the following definition for organizational climate:

> "Organizational climate is a relatively enduring quality of the internal environment of an organization that (a) is experienced by its members, (b) influences their behavior, and (c) can be described in terms of values of a particular set of characteristics (or attributes) of the organization."

Halpin and Croft[55] are probably most noted for their use of organizational climate as a concept. Halpin's definition of organizational climate best sums up an integrated concept of organizational climate. His words are, "Analogously, personality is to the individual what Organizational Climate is to the organization."[56]

Tagiuri[57] states the following difficulties which must be solved before the concept of organizational climate

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[54]Renato Tagiuri and George Litwin, edited. Organizational Climate: Explorations of a Concept. (Boston: Division of Research, Graduate School of Business Administration, Harvard University, 1968), p. 27.

[55]Andrew W. Halpin and Don B. Croft. The Organizational Climate of Schools. (U.S. Office of Education, Department of Health, Education and Welfare, Contract No. SAE 543(8639), 1962).

[56]Halpin, 1966, op. cit., p. 142.

[57]Tagiuri and Litwin, op. cit., p. 13.

can be used with any degree of agreement on a definition:

1. Distinguishing between the objective and subjective environment.
2. Distinguishing between the person and the situation.
3. Determining what aspects of the environment need to be specified.
4. Identifying the structures and dynamics of the environment.

This study, however, views organizational climate as a dependent variable; that is, we want to see how team teaching affects organizational climate rather than vice versa. The term organizational climate is used to refer to the idea of perceived environmental quality. Likert[58] says the supervisory act alone does not determine the subordinate's response. The subordinate's reaction to the supervisor's behavior always depends upon the relationship between the supervisory act as perceived by the subordinate and the expectations, values, and interpersonal skills of the subordinate. Obviously, noted Halpin,[59] each teacher's perception of the school's climate is mediated through his set of personal values and needs. When, for example, a faculty describes the organizational climate of its school as Open, the question "Is it really Open?" is unanswerable and irrelevant. The climate is Open

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[58]Rensis Likert. New Patterns of Management. (New York: McGraw Hill, Inc., 1961), p. 95.

[59]Halpin, 1966, op. cit., p. 147.

if the faculty perceives it as Open. Faber and Shearron[60] propose along the same line that in order, therefore, to have an interaction viewed as supportive, it is essential that this interaction be of such a character that the individual himself in the light of his experience and expectations sees it as supportive.

After being involved in leadership behavior research, Halpin and Croft constructed an instrument which would measure certain aspects of the environment or organizational climate of the schools. In the process of completion of the instrument which was called Organizational Climate Description Questionnaire (OCDQ), these researchers developed, through factor analysis, eight aspects of organizational climate. The eight subtests[61] are described as follow:

Teacher's Behavior

1. Disengagement refers to the teachers' tendency to be "not with it." This dimension describes a group which is "going through the motions," a group that is "not in gear" with respect to the task at hand.

2. Hindrance refers to the teachers' feeling that the principal burdens them with routine duties, committee demands, and other requirements which

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[60]Charles F. Faber and Gilbert F. Shearron Elementary School Administration: Theory and Practice. (New York: Holt, Rinehart and Winston, Inc., 1970), p. 287.

[61]Halpin, 1966, op. cit., p. 150-151

the teachers construe as unnecessary "busywork." The teachers perceive that the principal is hindering rather than facilitating their work.

3. Esprit refers to morale. The teachers feel that their social needs are being satisfied, and that they are, at the same time, enjoying a sense of accomplishment in their job.

4. Intimacy refers to the teachers' enjoyment of friendly social relations with each other.

Principal's Behavior

5. Aloofness refers to behavior by the principal which is characterized as formal and impersonal. His behavior, in brief, is universalistic rather than particularistic; nomothetic rather than idiosyncratic.

6. Production Emphasis refers to behavior by the principal which is characterized by close supervision of the staff. His communication tends to go in only one direction, and he is not sensitive to feedback from the staff.

7. Thrust refers to behavior by the principal which is characterized by his evident effort in trying to "move the organization." Thrust behavior is marked not by close supervision, but by the principal's attempt to motivate the teachers through the example which he personally sets.

8. Consideration refers to behavior by the principal which is characterized by an inclination to treat the teachers "humanly," to try to do a little something extra for them in human terms.

Using this instrument, Halpin and Croft were able to identify six climates[62] as listed below:

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[62] Ibid., pp. 166-173.

1. The Open Climate depicts a situation in which the members enjoy extremely high Esprit. Its main characteristic is the "authenticity" of the behavior that occurs among all the members. The members enjoy friendly relations, obtain considerable job satisfaction, and are motivated to overcome difficulties and frustrations. They are proud of their school, but apparently feel no need of an extremely high degree of Intimacy.

   The principal's behavior can be characterized as genuine. He is flexible and can meet the demands of the situation whether controlling and directing the activities of others or going out of his way to help satisfy the social needs of another. He has confidence in himself and others and does not need to monitor the teachers' activities too closely. He is in control of the situation and clearly provides leadership for the staff.

2. The Autonomous Climate is best characterized as one in which leadership acts emerge primarily from the group. The principal gives the teachers almost complete freedom to provide their own structures-for-interaction. There is a relatively high degree of Esprit and Intimacy. Satisfying social needs takes precedence over task-achievement need satisfaction.

   The principal remains aloof from the teachers and runs the organization in a businesslike and rather impersonal manner. He sets an example by working hard himself. He is genuine and flexible but his range of administrative behavior, as compared to that of the principal in the Open Climate, is more restricted.

3. The Controlled Climate is characterized, above everything else, as highly task-oriented and impersonal. The teachers are there to get the job done and expect directives telling them how to do it. There is an excessive amount of routine reports and busywork, which seems to be accepted as a necessary part of the job. Everyone is too busy to indulge in social-need satisfaction; in fact, social isolation is common. Nevertheless, Esprit is slightly above average

and is probably the result of task-accomplishment satisfaction. Authentic behavior is lacking because the group is disproportionately preoccupied with task accomplishment.

4. The Familiar Climate is characterized by the conspicuously friendly manner of both the principal and the teachers and the lack of control or direction. The principal makes the work as easy as possible for the teachers through procedural help and not burdening them with routine reports and busywork. Social-needs satisfaction is extremely high while task-achievement is very low. Esprit is average and stems almost entirely from social-needs satisfaction.

   The behavior theme of the principal is, essentially, "Let's all be a happy family." He is reluctant to be anything other than considerate lest he may destroy this "happy family" feeling.

5. The Paternal Climate is characterized mainly as one in which the principal feels that he must initiate all leadership acts and know every thing about everything that is going on. He does much of the busywork himself, thus relieving the teachers of these chores. The teachers have given up trying, and let the principal take care of things as best he can. The teachers do not work well together and are split into factions. Inadequate social-needs satisfaction and task-accomplishment result in low Esprit. The climate is partly closed.

6. The Closed Climate is the least genuine of all. The principal is ineffective in directing the activities of the teachers; at the same time is not inclined to look out for their personal welfare. He is highly aloof and impersonal. His frequent cry is "Let's work harder," and sets up rules and regulations about how to get things done. The teachers view him as a "phony."

   The teachers do not work well together. Task-accomplishment and social-needs satisfaction are both minimal and are reflected in low Esprit. At the same time the principal seems incapable of doing anything constructive about the situation.

Most researches in organizational climate deal primarily with the type of school, or the achievement of the students, or the characteristics of the principal. Very little has been done with teachers in relation to a type of instructional organization such as team teaching. In the studies of socioeconomic status of the school in relation to organizational climate using the OCDQ, Sommerville,[63] and Gentry and Kenney[64] revealed that high socioeconomic status schools were found to have a significantly more open climate. Guy's study,[65] drawn from nineteen elementary schools, found no relationships between the OCDQ subscale scores and the socioeconomic status of the schools.

Bushinger[66] found that schools classified as closed on

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[63]Joseph C. Sommerville. An Investigation of the Relationship Between the School Organizational Climate and Self-Concept, Level of Aspiration, Attitude and Opinion of Students About School. (Unpublished Ph.D. dissertation, University of Michigan, 1969), pp. 103-123.

[64]Harold W. Gentry and James B. Kenney, "The Relationship Between the Organizational Climate of Elementary Schools and School Location, School Size, and the Economic Level of the School Community," Urban Education, Vol. 3: No. 1, 1967, pp. 19-30.

[65]Renzo M. Guy II. The Relationships Between Organizational Climate, Leadership, and Progress. (Unpublished Ph.D. dissertation, Auburn University, 1970), pp. 108-132.

[66]Joseph S. Bushinger. Organizational Climate and Its Relationship to School Dropouts. (Unpublished Ed.D. dissertation, Rutgers University, 1966), pp. 95-135.

the basis of OCDQ climate profiles have significantly higher dropout rates. Flagg,[67] in his attempt to establish relationships between the OCDQ scores and student achievement in ten urban schools, found no significant relationships between openness of climate and pupil achievement.

Marcum[68] and Reynoldson[69] found in their separate studies that the innovativeness of a school is positively correlated with the openness of the school as determined by the OCDQ climate profile.

McLeod[70] revealed in his study that schools with more open climates are administered by principals whose length of service in the system is relatively short. Marcum[71]

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[67]Joseph T. Flagg, Jr. The Organizational Climate of Schools: Its Relation to Pupil Achievement, Size of School, and Teacher Turnover. (Unpublished Ed.D. dissertation, Rutgers University, 1964), p. 84.

[68]R. Laverne Marcum. Organizational Climate and the Adoption of Educational Innovation. (USOE Cooperative Research Program, Grant No. OEG-4-7-078119-2901, Utah State University, Logan, 1968), pp. 71-73.

[69]Roger L. Reynoldson. The Interrelationships Between the Decision-Making Process and the Innovativeness of Public Schools. (USOE Cooperative Research Program, Grant No. OEG-8-8-080015-2005(057), Utah State University, Logan, 1969), pp.20-25 and 36-39.

[70]Ronald K. McLeod. Relationship of Staff Size and Selected Staff Variables to the Organizational Climate of Elementary Schools. (Unpublished Ph.D. dissertation, University of Colorado, 1969), pp. 52-59.

[71]Marcum, op. cit., pp. 71-73.

encountered the same finding as McLeod's, and also, in addition, concluded that schools identified as more open through administration of the OCDQ have younger principals. On the contrary, Bennett[72] observed on the basis of his study of 438 teachers and principals that relatively lengthy principal tenure in the system is related to more open climates as indicated by the OCDQ. Phillips and Todd,[73] and Laosunthorn,[74] however, found no significant relationships between climate and the length of the principal service in the school.

Carver and Sergiovanni,[75] in addition to many researchers who engaged in studies of organizational climate in the secondary schools, have found that no secondary schools fell in

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[72] Robert E. Bennett. An Analysis of the Relationship of Organizational Climate to Innovations in Selected Secondary Schools of Pennsylvania and New York. (Unpublished Ph.D. dissertation, Pennsylvania State University, 1968), pp. 87-105.

[73] Jerry L. Phillips and Donald F. Todd. The Relationship of Principals' Leadership Training and Personality to the Organizational Climates of Schools. (Unpublished Ph.D. dissertation, University of Southern California, 1969), pp. 66-69.

[74] Vuti Laosunthorn. A Comparison of Mobile with Non-Mobile Elementary School Principals on the Basis of School Climate. (Unpublished Ph.D. dissertation, Michigan State University, 1975), p. 78.

[75] Fred D. Carver and Thomas J. Sergiovanni, "Some Notes on the OCDQ," Journal of Educational Administration, Vol. 7, May 1969, pp. 78-81.

the open half of the climate continuum. These studies have raised questions relative to the appropriateness of using the OCDQ, designed for elementary school use, in a secondary school. Andrews[76] concluded that the OCDQ is "...as valid for other kinds of schools as it is for elementary school."

From the extensive review of literature in the area of team teaching and organizational climate, this researcher finds that the OCDQ is a suitable means to measure the climate of the selected middle schools. Because of the scarcity of literature on the effects of team teaching on the school climate, the two topics are presented here thematically separate.

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[76]John H. M. Andrews, "School Organizational Climate: Some Validity Studies," Canadian Education and Research Digest, Vol. 5, December 1965, pp. 317-334.

CHAPTER III

RESEARCH PROCEDURES

Introduction

The data for this study were collected from the middle school teachers in eight selected middle schools in the triangular area of Lansing-Battle Creek-Ann Arbor in the state of Michigan. The selection of population, procedures for data collection, instrumentation and statistical treatment utilized to test the relationship hypothesized in Chapter I are presented and discussed in this chapter.

Population

The subjects intended for this study are teachers, in schools to be selected, in the academic areas - language arts, social studies, mathematics, and science. Population included the middle schools in the vicinity of the triangle of Lansing-Battle Creek-Ann Arbor area during the year 1976. They are the middle schools reporting as having employed team teaching. The middle schools in the following school districts were picked for sampling: Bellevue, Dexter, Eaton Rapids, Grand Ledge, Laingsburg, Marshall, Okemos, Plymouth, Portland, Potterville, Springport, Williamston, and Ypsilanti.

Telephone interviews with the principals of the middle schools mentioned above were conducted. They were

asked to describe the type of team teaching they have, based on the definition given in Chapter I and in any given form of team teaching described in Chapter II. Only four schools fitted the specification for this study. For the purpose of comparison another four completely non-team teaching schools were selected to match the four chosen team teaching schools in terms of the size of the school, student population, and the type of community.

Methodology of the Study

A letter (see Appendix A) was sent to each of these eight school principals for permission to conduct the survey. All granted permission. Appointments were made for the researcher to administer the questionnaires at the weekly staff meeting day in each school. The questionnaires were distributed to the academic teachers in a group situation in order to avoid any consultation among teachers; it required no more than thirty minutes for administration. Packets of questionnaires were left with the building principals for teachers absent from the staff meeting. Each packet of questionnaires contained the same directions as given at the meeting (see Appendix B). A self-addressed envelope was provided with each packet of questionnaires for teachers to mail directly to the researcher after the completion of the form to ensure their

anonymity.

The eligible participants in this study were 191 teachers, total return was 190 (see Table 3.1). School buildings numbered 1-4 are schools employing team teaching. In each of these schools there are two groups: team teachers (TT) and the non-team teachers (NTT). School buildings numbered 5-8 are completely non-team teaching schools. There was a total of 46 team teachers, 56 non-team teachers in team teaching schools (TTS), and 88 non-team teachers (NTTN) in non-team teaching schools (NTTS).

The method used in choosing subjects for this study imposes limits upon the generalizability of the conclusions to be drawn. Therefore, the population from which this study makes direct inferences include only these eight selected schools.

Instrumentation

The Organizational Climate Description Questionnaire (OCDQ) was employed to measure the organizational climate of the schools selected for this study. Halpin and Croft[77] constructed this instrument by screening and testing over 1000

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[77]Halpin, op. cit., p. 174-181

Table 3.1 The Participants in the Study.

Building Number	Number of TT*	Number of NTT**	Number of NTTN***	Total
1	10	9	-	19
2	17	16	-	33
3	11	14	-	25
4	8	17	-	25
5	-	-	21	21
6	-	-	26	26
7	-	-	24	24
8	-	-	17	17
Total	46	56	88	190

*Team teachers in team teaching schools.

**Non-team teachers in team teaching schools.

***Non-team teachers in non-team teaching schools.

items on elementary school populations until 64 items were finally selected to make up the OCDQ. The population was drawn from 1151 respondents in 71 elementary schools chosen from six different regions of the United States.

The responses were grouped for scoring into eight categories each measuring one of the eight dimensions of organizational climate. Four of these dimensions (Disengagement, Hindrance, Esprit, and Intimacy) describe the behavior of teachers and the other four (Aloofness, Production-Emphasis, Thrust, and Consideration) describe the principal's behavior. The descriptions for each of these dimensions were presented earlier in Chapter II. The survey form used consisted of two parts. Part I is the OCDQ which contains Items 1-64 and Part II, Items 65-70, include general biographical data of the teacher. (See Appendix B)

Each respondent is asked to indicate the frequency of the indicated behavior in his school according to the following scale:[78]

1. Rarely occurs
2. Sometimes occurs
3. Often occurs

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[78]Halpin, op. cit., p. 146.

4. Very frequently occurs

The scoring scheme is set out in Appendix C.

The reliability of the OCDQ subtest was measured by three methods, which were the split-half method, the comparison of even and odd numbered respondents'scores, and the computation of the test score commonalities from the three factor rotational solution of the eight subtests. In the third method, since high commonality can only occur when there is equivalence, the commonality was interpreted as a coefficient of equivalence. Using all these methods for estimating reliability, the OCDQ subtests were determined to be sufficiently dependable.[79]

The validity of the OCDQ has also been tested in several ways. McFadden[80] used the ratings by non-participant observers to compare to the actual subtest scores. Another approach by Andrews[81] was to compare other scales which purport to measure similar concepts. The most direct approach to validation of the OCDQ is through replication of the ori-

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[79] Halpin and Croft, op. cit., p. 65

[80] Edward Clayton McFadden, "The Non-Participant Observer and Organizational Climate," (Unpublished Ph. D. dissertation, Stanford University, 1966), p. 68-74

[81] Andrews, op. cit., p. 330.

original study.[82] All of these students produced no statistically significant differences from the original OCDQ study. All showed that the subtests of the OCDQ are reasonably valid measures of aspects of organizational climate.

Treatment of Data

The responded frequency of the behavior described in the OCDQ was scored 1, 2, 3, or 4 representing teachers' responses: rarely occurs, sometimes occurs, often occurs, or very frequently occurs, respectively. Negative scoring was required on some items marked by an asterisk (see Appendix C).

Data from the questionnaires were coded on the computer data coding cards. Using the computer, IBM Model CDC 6500 at the Michigan State University Computer Center, the data were then computed to get the total score of each subtest for each individual teacher and it was used as a new raw score of the study (see Appendix D). Therefore, each teacher ended up with eight total scores for the eight subtests. The statistical analysis process of the data employed two Programs: the Statistical Package for the Social Sciences

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[82]Aldona S. Vanderlain. A Validation of Factor II Esprit of the O.C.D.Q. (Unpublished Ph.D. dissertation, University of Maryland, 1968), p. 59.

(SPSS)[83] and the Multivariate.[84] The means of the total score were grouped by the building and by the type of teaching in the buildings. The means for the three major groups: Team Teachers, Non-Team Teachers in team teaching schools, and Non-Team Teachers in non-team teaching schools were obtained.

The analysis was conducted to test the following hypotheses:

General Hypothesis

There are no differences in the perceptions of organizational climate among team teachers, non-team teachers in team teaching schools, and non-team teachers in non-team teaching schools on all of the eight subtests as measured by the OCDQ.

Hypothesis A: There are no differences between the perceptions of organizational climate in selected middle schools held by team teachers and by non-team teachers in team teaching schools as measured by the OCDQ.

Hypothesis B: There are no differences between the perceptions of organizational climate in selected middle schools held by

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[83]Norman H. Nie, et al. SPSS: Statistical Package for the Social Sciences. (New York: McGraw-Hill Book Company, 1975).

[84]Jeremy D. Finn. Multivariace: Univariate and Multivariate Analysis of Variance, Covariance and Regression User's Guide Version V, March 1972, Ann Arbor, Michigan.

team teachers and by non-team teachers in non-team teaching schools as measured by the OCDQ.

Hypothesis C: There are no differences between the perceptions of organizational climate in selected middle schools held by team teachers and by non-team teachers in both team teaching and non-team teaching schools as measured by the OCDQ.

Test Hypotheses A's

A1. There is no difference on the Disengagement scale between the team teachers and non-team teachers in team teaching schools.

A2. There is no difference on the Hindrance scale between the team teachers and non-team teachers in team teaching schools.

A3. There is no difference on the Esprit scale between the team teachers and non-team teachers in team teaching schools.

A4. There is no difference on the Intimacy scale between the team teachers and non-team teachers in team teaching schools.

A5. There is no difference on the Aloofness scale between the team teachers and non-team teachers in team teaching schools.

A6. There is no difference on the Production Emphasis scale between the team teachers and non-team teachers in team teaching schools.

A7. There is no difference on the Thrust scale between the team teachers and non-team teachers in team teaching schools.

A8. There is no difference on the Consideration scale between the team teachers and non-team teachers in team teaching schools.

Test Hypotheses B's

B1. There is no difference on the Disengagement scale between the team teachers and non-team teachers in non-team teaching schools.

B2. There is no difference on the Hindrance scale between the team teachers and non-team teachers in non-team teaching schools.

B3. There is no difference on the Esprit scale between the team teachers and non-team teachers in non-team teaching schools.

B4. There is no difference on the Intimacy scale between the team teachers and non-team teachers in non-team teaching schools.

B5. There is no difference on the Aloofness scale between the team teachers and non-team teachers in non-team teaching schools.

B6. There is no difference on the Production Emphasis between the team teachers and non-team teachers in non-team teaching schools.

B7. There is no difference on the Thrust scale between the team teachers and non-team teachers in non-team teaching schools.

B8. There is no difference on the Consideration scale between the team teachers and non-team teachers in non-team teaching schools.

Test Hypotheses C's

C1. There is no difference on the Disengagement scale between the team teachers and non-team teachers in both team teaching and non-team teaching schools.

C2. There is no difference on the Hindrance scale between the team teachers and non-team teachers in both team teaching and non-team teaching schools.

C3. There is no difference on the Esprit scale between the team teachers and non-team teachers in

both team teaching and non-team teaching schools.

C4. There is no difference on the Intimacy scale between the team teachers and non-team teachers in both team teaching and non-team teaching schools.

C5. There is no difference on the Aloofness scale between the team teachers and non-team teachers in both team teaching and non-team teaching schools.

C6. There is no difference on the Production Emphasis between the team teachers and non-team teachers in both team teaching and non-team teaching schools.

C7. There is no difference on the Thrust scale between the team teachers and non-team teachers in both team teaching and non-team teaching schools.

C8. There is no difference on the Consideration scale between the team teachers and non-team teachers in both team teaching and non-team teaching schools.

The four main features of the analysis consist of the following:

1. summary data (means, standard deviation, and Pearson correlation coefficients) of all the eight subscales for each individual school and for each grouping (TT, NTT, and NTTN),

2. a multivariate analysis of variance (MANOVA) which is used to test the hypotheses,

3. presentation of the profile comparison, and

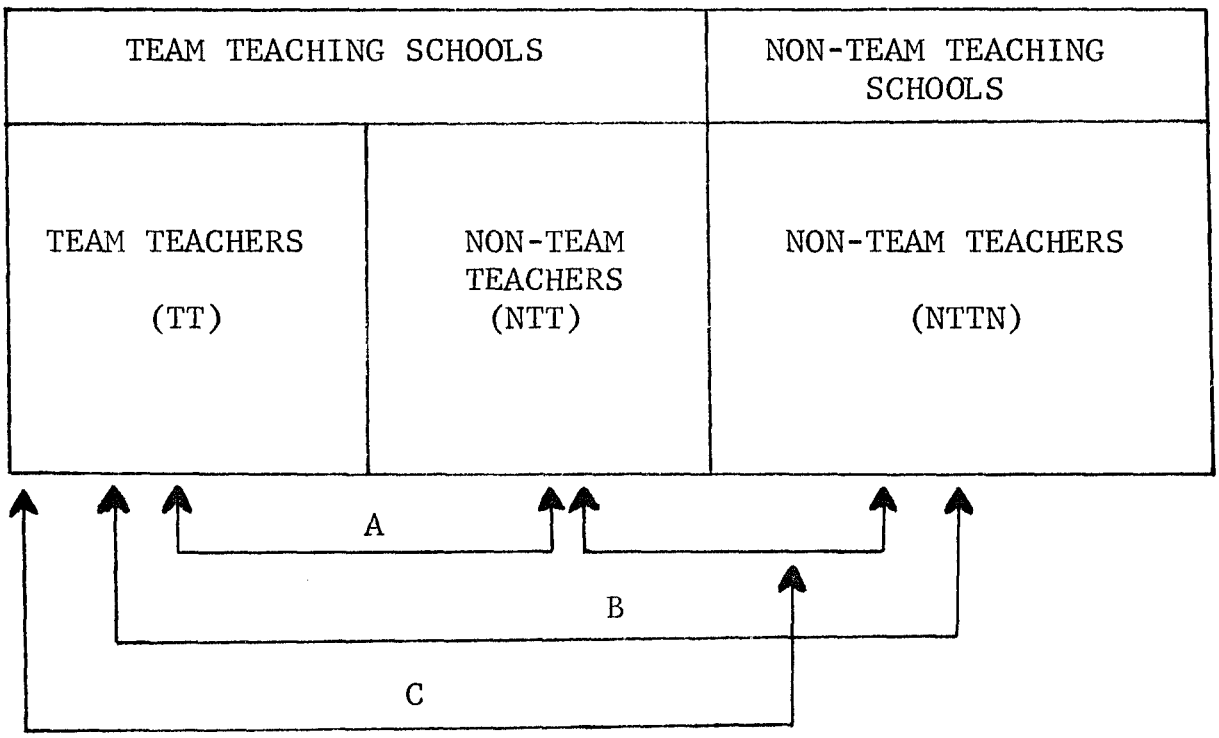
4. summary of descriptive information of demographic variables.

Since the nature of the hypotheses is the kind which requires mean comparison among groups, analysis of variance is an appropriate procedure to test them. MANOVA was chosen

for the analyses because the study is designed to find out differences across three groups on the eight dependent variables (the eight dimensions of organizational climate). Furthermore, in examining the correlation coefficient among the eight subscales of the norm group and of the sampled group, the relationships among these variables do exist. Thus, it is more desirable to compare the three groups simultaneously on eight subscales. For this reason, MANOVA is preferred over univariate analysis of variance. Moreover, it can also control the probability of Type I error (α) of the overall study to be at the specific level ($\alpha = 0.05$). Therefore, it ascertains the inflation of α .

The analysis of data was conducted in the following manner. First of all, the General Hypotheses was tested using multivariate F-test at the α level of .05. When the result was found to be significant, it means that contransts exist. Therefore, Post Hoc comparison will be employed using a simple method for comparing one group against another and a complex method for one group against the average mean of other two or more groups. The specific contrasts are described as Hypotheses A, B, and C (see Figure 3.1). The significant differences resulted in the contrasts are further investigated through the use of a series of

univariate F-tests. The univariate F-tests were employed to examine which of the variables produce the significance. The univariate F-tests compared two independent variables with only one dependent variable at a time.



A = Hypothesis A = population mean for TT
B = Hypothesis B = population mean for NTT
C = Hypothesis C = population mean for NTTN

Figure 3.1 General Hypothesis of the Study.

CHAPTER IV

ANALYSES OF DATA

Introduction

The presentation in this chapter leads off with the summary data which includes the means, standard deviation, and Pearson correlation coefficients of all the eight subscales for each individual school and for each grouping (TT, NTT, and NTTN). A multivatiate analysis of variance (MANOVA) follows to compare across three groups simultaneously on the eight subscales. If this analysis turned out to be statistically significant at .05 level, Post Hoc comparisons were applied to discover the specific differences between groups. A statistical table will be presented to display the findings. When any significant Post Hoc contrasts exist, a series of univariate F-tests is employed to examine which of the variables produce the significance. Finally, the summary of the descriptive information on demographic variables are reported.

Summary of Data

The descriptive information showing the average performance and dispersion for each individual building is presented in Table 4.1. The mean ranges from the smallest (1.516) for Hindrance of the non-team teaching school numbered 5 to the largest (3.499) for Thrust of the team teaching group in the

Table 4.1 Means and Standard Deviation Reported by School Building.

	Scale / School	Disengagement	Hindrance	Esprit	Intimacy	Aloofness	Production Emphasis	Thrust	Consideration
MEANS	Team Teaching Schools 1T	2.010	1.934	3.060	2.758	2.234	2.416	3.157	2.366
	2T	2.082	2.256	2.541	2.488	1.890	1.781	2.680	2.001
	3T	2.327	2.665	2.691	2.584	2.030	2.300	2.283	1.879
	4T	1.650	1.856	3.438	2.820	1.736	1.751	3.499	3.250
	1N	1.667	2.054	3.044	2.367	2.431	2.682	2.543	1.813
	2N	1.925	2.062	2.712	2.607	1.801	1.769	2.924	2.104
	3N	2.221	2.203	2.657	2.490	1.786	2.011	2.515	2.024
	4N	1.776	2.029	3.035	2.572	1.772	1.798	2.960	2.273
	Non-Team Schools 5	1.595	1.516	3.267	1.860	1.926	2.177	3.312	2.595
	6	2.008	2.059	2.654	2.347	2.137	2.247	2.462	1.756
	7	1.779	2.041	2.879	2.644	1.880	2.036	2.532	1.812
	8	2.253	2.315	2.300	2.312	2.019	1.874	2.365	2.059
STANDARD DEVIATION	Team Teaching Schools 1T	.285	.345	.171	.422	.481	.376	.429	.680
	2T	.300	.664	.549	.410	.280	.242	.598	.518
	3T	.310	.610	.459	.552	.178	.304	.582	.428
	4T	.200	.538	.288	.213	.325	.498	.353	.417
	1N	.357	.353	.343	.259	.323	.419	.593	.490
	2N	.470	.501	.344	.476	.185	.299	.611	.416
	3N	.395	.428	.369	.365	.284	.303	.424	.362
	4N	.412	.433	.395	.353	.336	.368	.581	.460
	Non-Team Schools 5	.389	.334	.317	.652	.190	.438	.510	.585
	6	.500	.388	.473	.427	.342	.467	.441	.379
	7	.344	.461	.361	.444	.301	.350	.454	.481
	8	.490	.471	.224	.316	.228	.294	.382	.420

T = Team Teaching
N = Non-Team Teachers in team teaching schools

forth school building. While the dispersion ranges from the narrowest (.171) for Esprit in the team teaching group in school building numbered one to the widest (.680) for Consideration in the team teaching group in the same school building. Table 4.2 shows the same kind of information in the three major groupings (TT, NTT and NTTN).

Since the eight subscales are dependent variables, relationships among these variables do exist. Tables showing the correlation coefficient among the eight subscales are presented for examination and comparison between that of the norm group (see Table 4.3) and that of the sampled group (see Table 4.4).

Multivariate Analysis of Variance (MANOVA)

General Hypothesis (H_o) stated that there are no differences in the perceptions of the organizational climate among team teachers, non-team teachers in team teaching schools, and non-team teachers in non-team teaching schools on all the eight subtests as measured by the OCDQ.

It is represented in statistical notations as

$$H_o : \begin{bmatrix} \mu_1^{(1)} = \mu_2^{(1)} = \mu_3^{(1)} \\ \mu_1^{(2)} = \mu_2^{(2)} = \mu_3^{(2)} \\ \vdots \\ \mu_1^{(8)} = \mu_2^{(8)} = \mu_3^{(8)} \end{bmatrix}$$

where μ_1 is the population mean of Group 1 (TT),

Table 4.2 Means and Standard Deviation Reported by the Grouping: TT, NTT, and NTTN.

VARIABLES	MEAN			STANDARD DEVIATION		
	TT	NTT	NTTN	TT	NTT	NTTN
Disengagement	2.050	1.913	1.894	.352	.452	.486
Hindrance	2.214	2.086	1.974	.631	.435	.492
Esprit	2.846	2.85	2.793	.535	.399	.491
Intimacy	2.627	2.529	2.540	.434	.383	.571
Aloofness	1.972	1.890	1.994	.355	.365	294
Production Emphasis	2.038	1.985	2.101	.443	.464	.417
Thrust	2.831	2.772	2.665	.666	.580	.577
Consideration	2.268	2.089	2.030	.702	.446	.571

Table 4.3 Correlations of the Norm Group Between Eight Scale scores of the OCDQ, Form IV, 64 items (N = 1151)*

Variables	1	2	3	4	5	6	7	8
1	1.00							
2	.27	1.00						
3	-.36	-.32	1.00					
4	.00	-.07	.31	1.00				
5	.18	.15	-.09	-.06	1.00			
6	.17	.08	.12	.11	.13	1.00		
7	-.22	-.25	.60	.18	-.07	.17	1.00	
8	.04	-.15	.42	.31	-.10	.19	1.49	1.00

*Halpin and Croft, Organizational Climate of Schools, p. 49.

Table 4.4 Sample Group Correlation Matrix.

Variables	1	2	3	4	5	6	7	8
1	1.00							
2	.34	1.00						
3	-.42	-.39	1.00					
4	-.09	-.13	.45	1.00				
5	.15	.09	-.00	-.18	1.00			
6	.03	-.07	.25	.11	.35	1.00		
7	-.44	-.50	.60	.26	-.12	.17	1.00	
8	-.18	-.36	.39	.28	-.13	.04	.69	1.00

μ_2 is the population mean of Group 2 (NTT), and

μ_3 is the population mean of Group 3 (NTTN).

The upper subscripts indicate the eight subtests (dependent variables)

1 is for Disengagement (Scale 1),

2 is for Hindrance (Scale 2),

3 is for Esprit (Scale 3),

4 is for Intimacy (Scale 4),

5 is for Aloofness (Scale 5),

6 is for Production Emphasis (Scale 6),

7 is for Thrust (Scale 7), and

8 is for Consideration (Scale 8).

Table 4.5 Result of the multivariate analysis of variance for the General Hypothesis.

Source of Variation	Degree of Freedom 1	Degree of Freedom 2	Multivariate F-test	P=less than
$\mu_1 = \mu_2 = \mu_3$ (Groups main effect on all the 8 dependent variables)	16	360	2.0316	0.0109*

*The test is significant at .05 level.

The null hypothesis is rejected because the value of P of the multivariate F-test is less than .05 which is the α-level set for this study. This can be interpreted to say that

there are differences among the three groups on at least one of the eight dependent variables. The three groups were then to be further tested to find the specific difference among them.

Since the General Hypothesis is found to be statistically significant, the next step in the multivariate analysis is to use Post Hoc comparisons of the three groups as stated in Hypotheses A, B and C in respective order.

Hypothesis A: There are no differences in the perceptions of organizational climate in the middle schools between team teachers and non-team teachers in the schools with team teaching on all the eight subtests as measured by the OCDQ.

Statistical representation is as follows:

$$H_o : \begin{bmatrix} \mu_1^{(1)} = \mu_2^{(1)} \\ \mu_1^{(2)} = \mu_2^{(2)} \\ - \quad - \\ - \quad - \\ \mu_1^{(8)} = \mu_2^{(8)} \end{bmatrix}$$

Table 4.6 Result of the Post Hoc Comparison of Group 1 and Group 2 on All the Eight Subtests.

Source of Variation	Degree of Freedom 1	Degree of Freedom 2	Multivariate F-test	P=Less Than
$\mu_1 = \mu_2$ (on all the eight dependent variables)	8	180	.9151	.5053

Since the value of P in this comparison is greater than the .05 level set for this study, the null hypothesis can not be rejected. There may be some possibility of the two groups being different; but, statistically it can not be proven so. Further univariate F-tests on each dependent variables for Group 1 and Group 2 are no longer necessary.

Hypothesis B: There are no differences in the perceptions of organizational climate in the middle schools between team teachers and non-team teachers in the schools without team teaching on all the eight subtests as measured by the OCDQ.

This can be written in statistical notations as,

$$H_o : \begin{bmatrix} \mu_1^{(1)} = \mu_3^{(1)} \\ \mu_1^{(2)} = \mu_3^{(2)} \\ - \quad - \\ - \quad - \\ \mu_1^{(8)} = \mu_3^{(8)} \end{bmatrix}$$

Table 4.7 Result of the Post Hoc Comparison of Group 1 and Group 3 on All the Eight Subtests.

Source of variation	Degree of Freedom 1	Degree of Freedom 2	Multivariate F-test	P=Less Than
$\mu_1 = \mu_3$ (on all the eight dependent variables)	8	180	3.2106	.0020*

*The test is significant at .05 level.

There is a statistically significant difference between Group 1 and Group 3 on at least one of the eight dependent variables. In order to identify which of the eight variables

produces the significance, a series of univariate F-tests was used.

Table 4.8 Results of the Univariate F-test on the Comparisons of Group 1 and Group 3 on Each of the Eight Dependent Variables.

Variables	Degree of Freedom 1	Degree of Freedom 2	Mean Square Between	F-test	P=Less Than
Disengagement	1	187	73.21	3.66	.05*
Hindrance	1	187	62.72	6.59	.01*
Esprit	1	187	8.32	.36	.55
Intimacy	1	187	11.34	1.09	.30
Aloofness	1	187	1.23	.14	.71
Production Emphasis	1	187	5.85	.62	.43
Thrust	1	187	67.31	2.30	.13
Consideration	1	187	61.74	5.21	.02*

*The test is significant at .05 level.

Three variables namely, Disengagement, Hindrance and Consideration, were found to be producing the significance in the test for Hypothesis B.

Hypothesis C: There are no differences in the perceptions of organizational climate in the middle schools between team teachers and non-team teachers in both schools with team teaching and without team teaching on all the eight subtests as measured by the OCDQ.

Statistical representation is as follows:

$$H_o : \begin{bmatrix} \mu_1^{(1)} = \dfrac{\mu_2^{(1)} + \mu_3^{(1)}}{2} \\ \mu_1^{(2)} = \dfrac{\mu_2^{(2)} + \mu_3^{(1)}}{2} \\ \text{—} \quad\quad \text{—} \\ \text{—} \quad\quad \text{—} \\ \mu_1^{(8)} = \dfrac{\mu_2^{(8)} + \mu_3^{(8)}}{2} \end{bmatrix}$$

Table 4.9 Result of the Post Hoc Comparison of Group 1 and Average of Group 2 plus Group 3 on All Eight Dependent Variables.

Source of Variation	df 1	df 2	Multivariate F-test	P=Less Than
(on all eight dependent variables)	8	180	2.326	.0213*

*The test is significant at .05 level.

This test was found to be statistically significant at .05 level, so the null hypothesis is rejected. There are the differences between the team teaching group and the combined groups of non-team teachers from both team teaching and non-team teaching schools on at least one of the eight dependent variables. Further testing is required to identify the variable(s) which produces this significance. In this case, a series of univariate F-tests is used to obtain the result (see Table 4.10).

Table 4.10 Results of the univariate F-test on the comparison of team teaching group vs the average of the two non-team teaching groups on each of the eight dependent variables.

Variables	df 1	df 2	MS_B	F-test	P=less than
Disengagement	1	187	73.99	3.70	.05*
Hindrance	1	187	42.05	4.42	.04*
Esprit	1	187	1.99	.09	.76
Intimacy	1	187	14.61	1.40	.23
Aloofness	1	187	2.46	.28	.60
Production Emphasis	1	187	.04	.00	.95
Thrust	1	187	35.40	1.21	.27
Consideration	1	187	54.08	4.57	.03*

*The test is significant at .05 level.

In a series of univariate F-test, the tests for Disengagement, Hindrance and Consideration were found to be significant at .05 level. However, those tests for Esprit, Intimacy, Aloofness, Production Emphasis, and Thrust were found to produce no significance.

Comparison of Climate Profile

The profile comparison of the three groups, namely team teachers, non-team teachers in team teaching schools, and non-team teachers in non-team teaching schools, is shown by

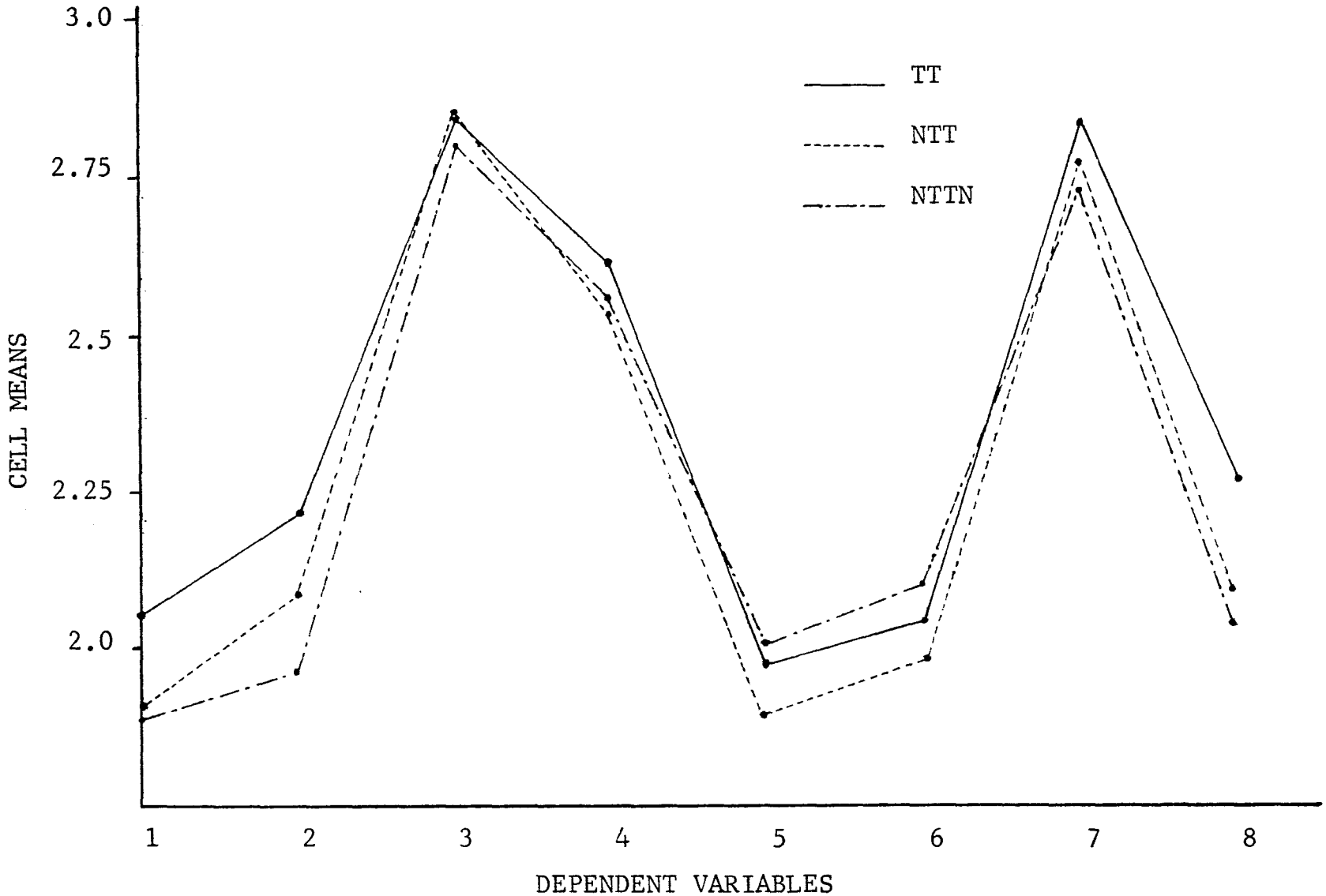


Figure 4.1 Profile Comparison Between TT, NTT, and NTTN.

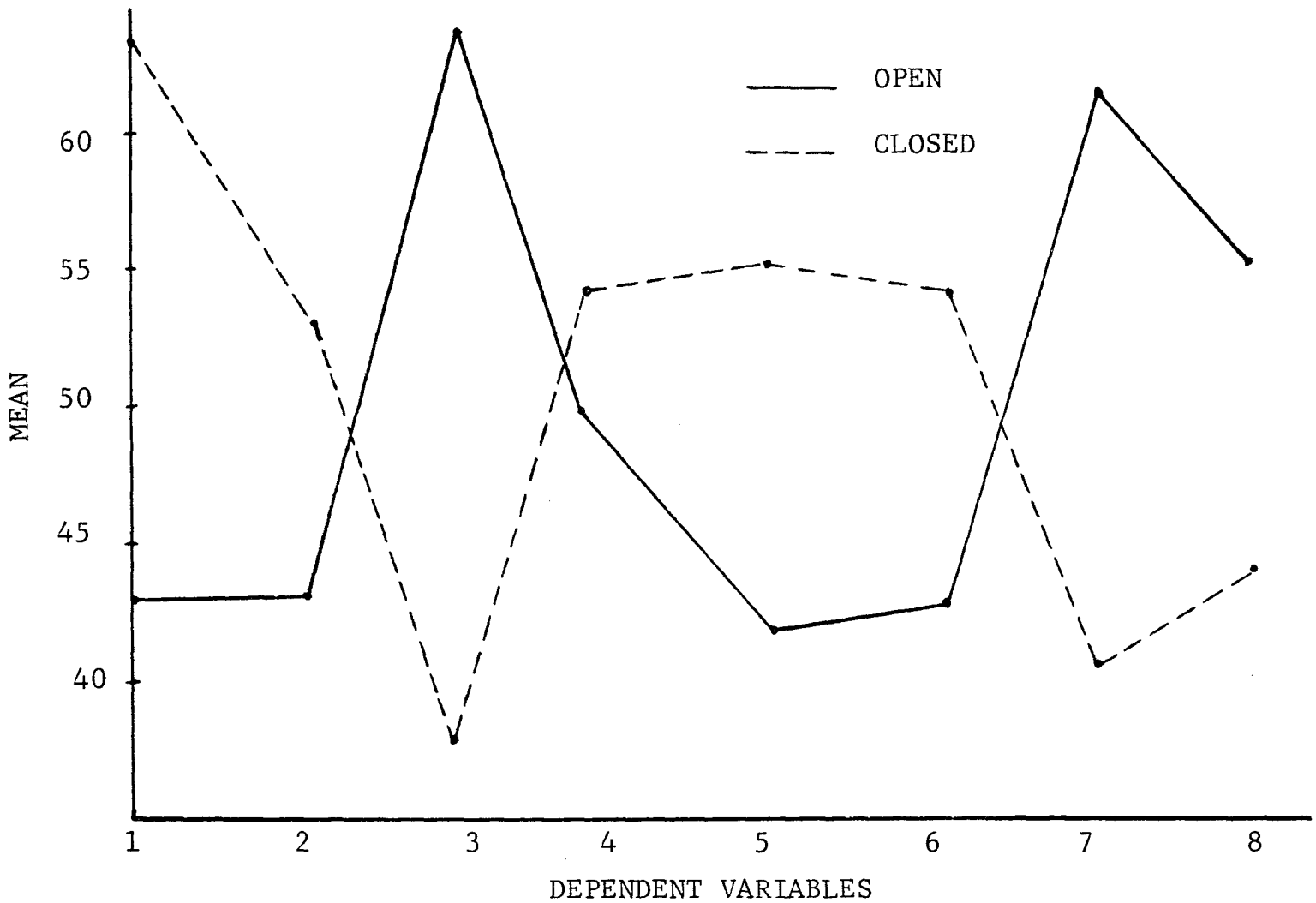


Figure 4.2 Halpin and Croft Open and Closed Climate Profiles.

Table 4.11 Profile characteristics of organizational climate.

Open	Autonomous	Controlled	Familiar	Paternal	Closed
Low Dis-engagement	Low Dis-engagement	Low Dis-engagement	High Dis-engagement	High Dis-engagement	High Dis-engagement
Low Hindrance	Low Hindrance	High Hindrance	Low Hindrance	Low Hindrance	High Hindrance
High Esprit	Relatively High Esprit	Relatively High Esprit	Average Esprit	Low Esprit	Low Esprit
Average Intimacy	High Intimacy	Low Intimacy	High Intimacy	Low Intimacy	Average Intimacy
Low Aloofness	Relatively High Aloofness	High Aloofness	Low Aloofness	Low Aloofness	High Aloofness
Low Production Emphasis	Low Production Emphasis	High Production Emphasis	Low Production Emphasis	High Production Emphasis	High Production Emphasis
High Thrust	Relatively High Thrust	Average Thrust	Average Thrust	Average Thrust	Low Thrust
High Consideration	Average Consideration	Average Consideration	High Consideration	High Consideration	Low Consideration

NT represents the total non-team teachers from both types of schools.

Population

The population of this study is composed of 46 team teachers, 56 non-team teachers in team teaching schools, and 88 non-team teachers in non-team teaching schools. See Table 4.12.

Table 4.12 Composition of the Population.

TT	NT	
	NTT	NTTN
46	56	88

Sex

The sex distribution in TT and NT groups is similar. There are just about the same percentage of males and females in both groups (see Table 4.13). The Chi square test of homogenuity is .032 with 1 degree of freedom and a significance at .857. At .05 level, the test shows no statistically significant difference between the proportion of the sexes for both team teachers and non-team teachers.

Table 4.13 Sex Composition of the Population.

SEX / TYPE	MALE	FEMALE
TT	54.3%	45.7%
NT	51.4%	48.6%

Age

The age range of the population was set up in five categories, 25 and below, 26-35, 36-45, 46-55, and 56-65. The population was found to concentrate mostly in second group, the 26-35 year range. The spread for the team teachers and non-team teachers is similar as shown below in Table 4.14. The Chi square test of homogenuity is 8.802 with 4 degrees of freedom and a significance at .066. Thus, at .05 level, there is no statistically significant different proportions of the age distribution for the team teachers and non-team teachers.

Table 4.14 Age Composition of the Population.

AGE / TYPE	26-35	OTHERS
TT	63.0%	37.0%
NT	61.8%	38.2%

Teaching Experience

The number of years spent teaching concentrates more heavily in the range of 2 to 8 years. The number of years was categorized as follows: 1 year, 2-4, 5-6, 7-8, 9-10, 11-15, 16-20, and 21-more. These categories are numbered in the graph from 1 through 8 representing each respectively. The Chi square test of homogenuity is 10.023 with 7 degrees of freedom and a significance at .187. At .05 level, there is no statistically significant difference between the proportions of each interval of experience in teaching for team teachers and non-team teachers (see Figure 4.3)

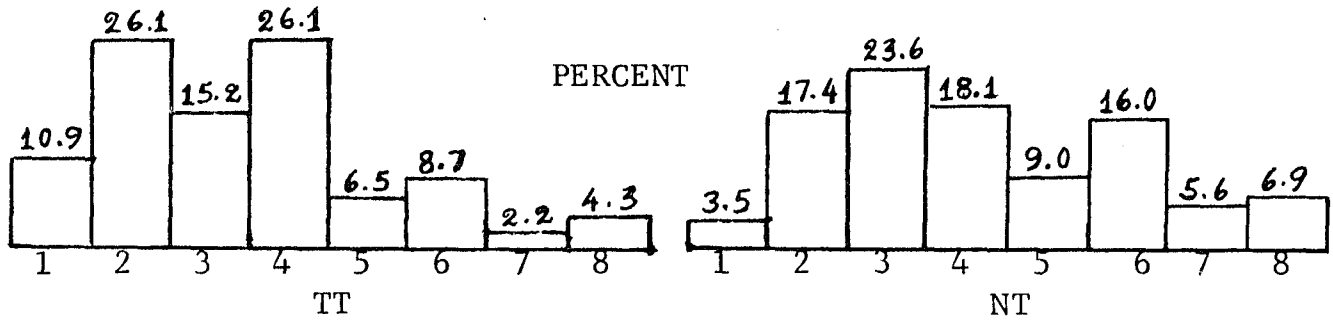


Figure 4.3 Years of Teaching Experience of TT and NT.

Years in Present School

The number of years these teachers spent in their present schools is distributed most heavily in the second interval. The division of intervals is the same as those mentioned above in Teaching Experience. The Chi square test

of homogenuity is 4.061 with 7 degrees of freedom and a significance at .773. Thus, at .05 level, there is no statistically significant difference between proportions of each interval of experience in school for team teachers and non-team teachers. The distribution is reported in Figure 4.4.

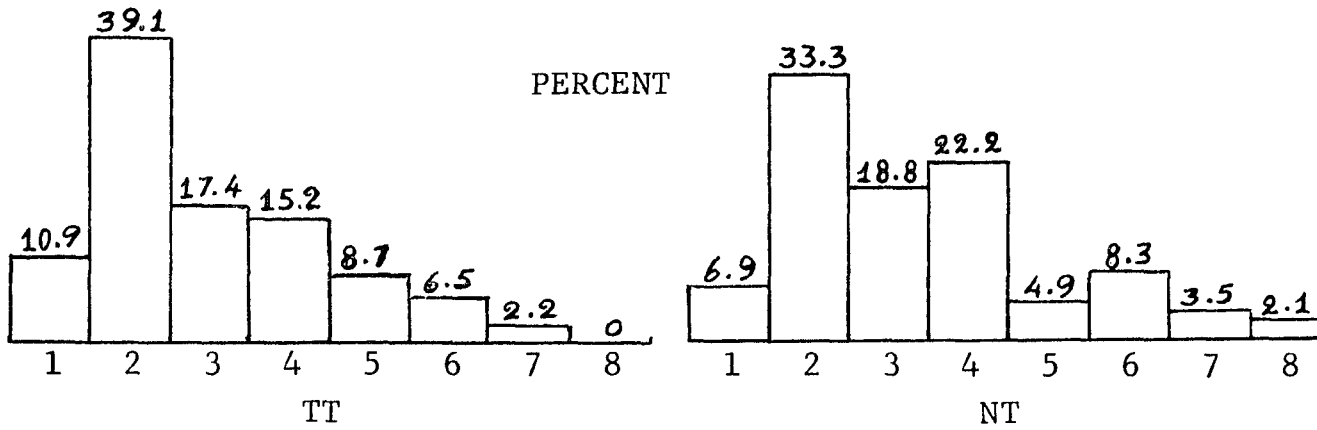


Figure 4.4 Years of Experience in Present Schools.

Experience in Team Teaching

The members of the team teaching group experienced at least one year or more of team teaching while a little more than half of the non-team teachers have absolutely no team teaching at all. Therefore, the distinction between the types of teachers intended for this study actually exists. The Chi square test of homogenuity is 54.784 with 6 degrees of freedom and the significance at .0. At .05 level, the test shows statistically significant differences between the proportions of each interval of experience in team teaching for team teachers

and non-team teachers (Figure 4.5).

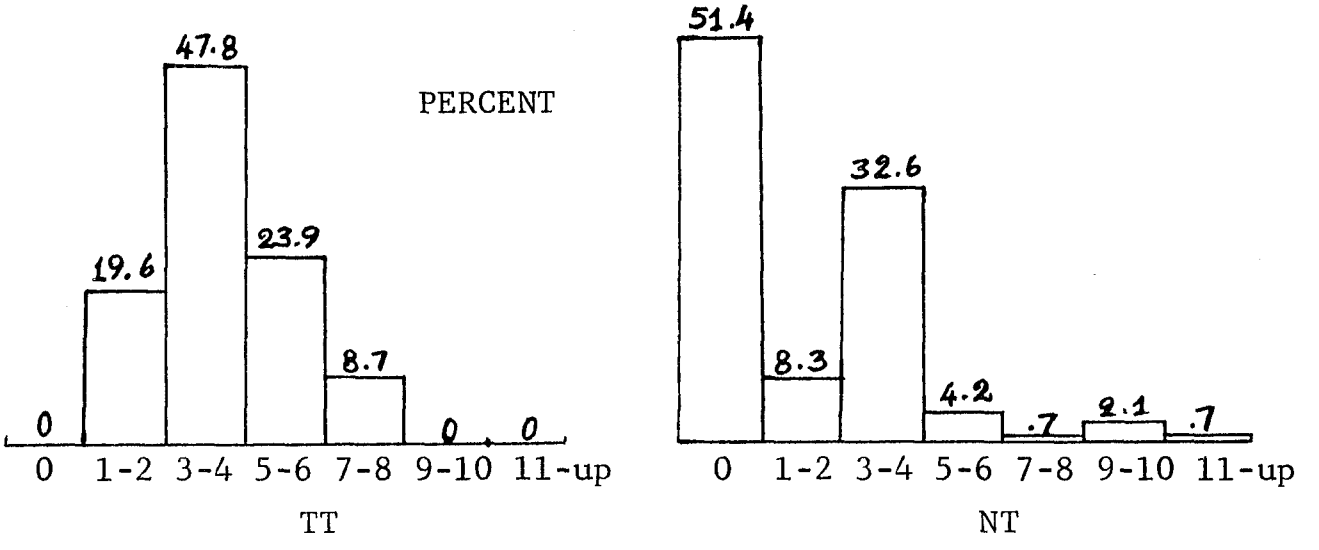


Figure 4.5 Years of Experience in Team Teaching for TT and NT.

Formal Education of Team Teaching

When asked how many credit hours these teachers had in the formal education of team teaching, they have interesting answers. The majority of both group have no formal education whatsoever in the area. This seems to suggest that team teaching is being carried out through a trial-and-error approach. The Chi square is 13.702 with 8 degrees of freedom significance at .090.

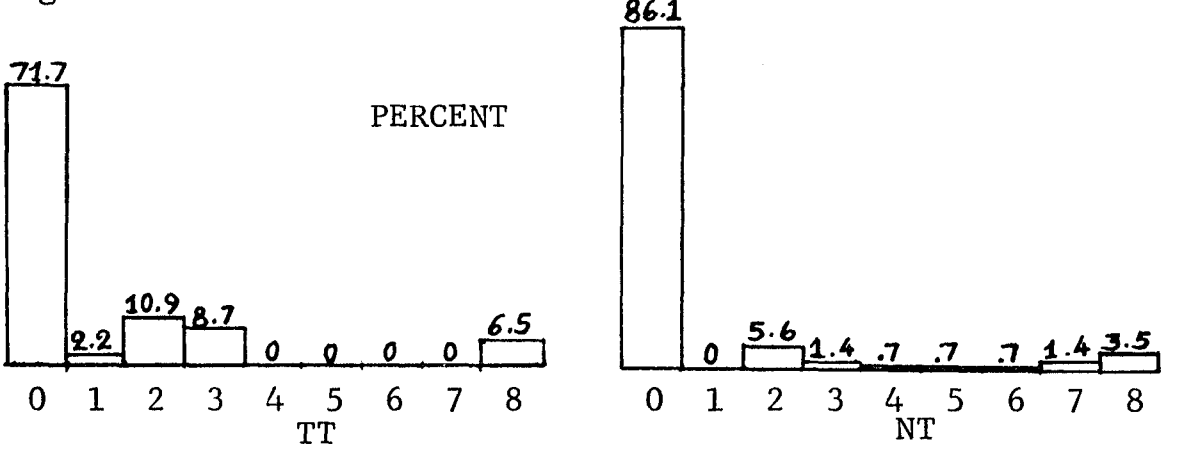


Figure 4.6 Credit Hours of Team Teaching Courses for TT and NT.

The division of intervals for number of hours taking team teaching classes is from 0 through 8 representing the following: none, 1-3, 4-6, 7-9, 10-12, 13-15, 16-21, and 22-more. The hours asked here does not restrict to university classes, they can also be the hours attending workshops and conferences.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter opens with a review of the purposes, population, tools and procedures used in the research. It then continues with the research findings and conclusions. Recommendations for futher study follow. The chapter closes with a few reflections on the findings and on the problem studied.

Purposes and Methods

In the literature it is said that team teaching is a type of instructional organization that brings teachers closer together and requires cooperation and understanding among members. This led the researcher to hypothesize that team teachers would perceive their school climate as open and non-team teachers would perceive their school climate as closed. It was the researcher's intent in this study to discover evidence of what effect, if any, the instructional organization known as team teaching has on the teachers' perception of their school climate.

The schools which participated in this study were selected on the basis of the definition of team teaching in

Chapter I and of the types of team teaching described in Chapter II. Non-team teaching schools were chosen later to match the selected team teaching schools in size and community setting. The eight schools selected were all middle schools and were all located in a triangular area bounded by Lansing, Battle Creek and Ann Arbor, Michigan. From the population of 191 middle school teachers in the eight selected schools, there were 190 returns comprised of 46 team teachers, 56 non-team teachers in team teaching schools, and 88 non-team teachers in non-team teaching schools.

The school climate was measured by the Organizational Climate Description Questionnaire, an instrument developed by Halpin and Croft. Multivariate analysis of variance was used to test mean differences between the team teaching and the non-team teaching groups on the eight dependent variables which compose a climate profile.

Research Findings

Of the three main hypotheses being tested, after the test for General Hypothesis turned up result showing statistically significant differences across the three groups of the teachers being studied, two null hypotheses were rejected and one retained.

General Hypothesis

The null hypothesis for the General Hypothesis was rejected because the differences found were significant at the .05 level (P = less than .0109). This indicates that there were differences among the responses of the three groups, namely team teachers, non-team teachers in team teaching schools, and non-team teachers in non-team teaching schools. However, the multivariate analysis of variance across the three groups did not specify which of the contrasts produced the significance and to what degree. Further tests were conducted then, to discover which pair of the comparisons would show the differences.

Hypothesis A

Testing Hypothesis A, which compared the team teachers with the non-team teachers in team teaching schools, revealed no significant differences between the two groups in how they perceived their school climate. This can also be taken to mean that the fact that there were two different types of instructional organization within the same school did not significantly affect the teachers' perception of their school climate. The chart in Figure 4.1 (p. 73) shows that the climate profiles for team teachers and for non-team teachers in team teaching schools resembles the open climate profile described verbally in Table 4.11 (p. 75). The profiles for both

groups closely match the Open profile for all items except for Consideration, in which these groups have a lower mean score than is found in the Open profile. The mean score for Consideration falls into the Closed half of the climate continuum on the chart, although this difference was not shown to be statistically significant.

Hypothesis B

The null hypothesis for Hypothesis B was rejected. The test showed statistically significant differences between team teachers and the non-team teachers in non-team teaching schools at the .05 level (P = less than .0020) on at least one of the eight dependent variables. The univariate F-tests were used to compare the two groups on each of the eight dependent variables.

In the Disengagement, Hindrance and Consideration scales, differences found between the two groups were significant at the .05 level (P = less than .05, .01 and .02 respectively). Although the place of both groups on the Disengagement and Hindrance scales is relatively low, that of the non-team teachers is significantly lower than that of the team teachers. Comparing this with the characteristics of the Open profile (Table 4.11), in these two scales the non-team teachers from non-team teaching schools differed from the team teachers in the direction of a more Open climate. They apparently did

not see that the teachers are "not with it," nor did they feel that the principal burdened them with routine duties, to the same extent, when their responses were compared with those of the team teachers.

However, in these two groups the scores on the eight scales all fall into the Open climate category, except Consideration, in which the score is average for team teachers and below average for the non-team teachers. On the Consideration scale the perception of team teachers falls in the middle of the Open-Closed climate continuum while that of non-team teachers falls further from the average toward the Closed end of the continuum.

There is apparent contradiction here between the findings in the Disengagement and Hindrance scale scores, on the one hand, and the Consideration scale scores for both groups. The results do not justify a conclusion as to which group perceived a more open climate. Team teachers perceived the climate as more open on the Consideration scale, while the non-team teachers perceived the climate as more open on the Disengagement and Hindrance scales. Since Disengagement and Hindrance are items of the teachers' behavior aspect of organizational climate, it is possible to say that using contrasting instructional organization within the same school may affect the way team teachers perceive "all-teacher"

behavior. It seems that the team teachers, who perceive more Consideration in the principals' behavior, are less positive in their judgment about the whole teaching staff behavior.

Hypothesis C

The null hypothesis for Hypothesis C which compared team teachers and all of the non-team teachers from both team teaching and non-team teaching schools was rejected. Statistically significant differences between the two groups at the .05 level (P = less than .0213) were found on at least one of the eight dependent variables. Univariate F-tests were used to test each of the eight dependent variables at the .05 level

The Disengagement, Hindrance and Consideration scales showed statistically significant differences between the two groups (P = less than .05, .04 and .03 respectively). When the non-team teachers from team teaching schools are combined with those in the non-team teaching schools, the values of P draws nearer to the α level set for the tests. The outcomes of the univariate F-tests for the Test Hypotheses C are the same as those for Test Hypotheses B, but to a lesser degree. Non-team teachers perceived the teachers' behavior aspect of organizational climate, Disengagement and Hindrance, as more open than did the team teachers, while the team teachers

perceived the principals' behavior more open than did the non-team teachers.

Although it was not part of the plan, an analysis comparing the non-team teachers in team teaching schools with the teachers in non-team teaching schools showed no statistically significant differences.

Summary of the Findings

Three comparisons were made, each comparing team teachers with non-team teachers: one compared non-team teachers in the same schools; another compared non-team teachers in similar schools that did not have team teaching; and the third compared the combined groups of non-team teachers. Some statistically significant differences were found in two of these three comparisons.

All the schools were found to have Open climate profiles. When team teachers were compared with the non-team teachers in the same schools, no statistical differences were found in any of the eight subscales in the organizational climate scores.

In the other two comparisons, tested as Hypothesis B and C, team teachers rated their schools' climate as less open in two characteristics, Disengagement and Hindrance, and more open in one characteristic, Consideration, than did the non-team teachers taken as a group. This was even more

true when compared with non-team teachers in schools without team teaching.

All of the findings in this study are only representative of the eight selected middle schools which participated. However, they may be cautiously applied to schools similar in size, setting, and staff characteristics. They can not represent all of the middle schools in Michigan.

Recommendations for Further Study

On the basis of experience with this study other studies seem promising and are recommended:

1. A larger scale study at the state or national level on the perception of organizational climate between true team teachers and non-team teachers in the same schools.

2. A comparison of perception of organizational climate between all of the teachers in true team teaching schools and all of teachers in non-team teaching schools.

3. A comparative study of the perception of organizational climate held by teachers in team teaching, departmentalized, and self-contained classroom organizations.

4. A study of perception of organizational climate between teachers in the middle school with team teaching and teachers in junior high school without team teaching.

Reflections

During the visits to the school for the distribution of the questionnaires, the researcher had the opportunity to talk to several teachers in all of the eight schools which participated in the study. From these conversations, the researcher had the impression that team teachers were quite spirited and enthusiastic in what they were doing. The principals of the team teaching schools were very supportive of the concept and team teachers admitted that they had full cooperation from their principal. This may account for the higher scale scores on Consideration for the team teachers.

Many of the non-team teachers in team teaching schools did not think that team teaching would make any difference that would benefit students, teachers or the school. Some had experienced team teaching and found that it required too much time to make too little difference. The distance between the team teachers and non-team teachers in the same school was felt whenever the labels of the groups were mentioned. Although there was cooperation among team teachers, there seemed to be a competitive atmosphere between the two groups of teachers.

The non-team teachers in non-team teaching schools were mostly busy with their classes. Some said that they had tried teaming with other teachers in planning the lessons. Their

principal neither objected nor supported the undertaking. These teachers, however, did not get too deeply into team teaching as a concept, they simply tried it out for any of several reasons. Some of the reasons were that they had learned about it in their classes at the university, or that they knew of the teachers in other schools who were doing it. The atmosphere here is the "business-as-usual" type.

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PLEASE NOTE:

Appendix contains pages with computer print-out and other pages with broken and indistinct print. Filmed as received.

UNIVERSITY MICROFILMS INTERNATIONAL.

APPENDIX A

April 20, 1976

Dear Colleague:

For the past two decades team teaching concept has rapidly assumed the dimensions of a major educational movement. Study in this area is of major importance in the planning and development of edcation in the United States. I trust you will agree that the subject of Chantavit Chaemchaeng's research -- the perceptions of school climate between team teachers and non-team teachers -- is of such importance. And because you are especially able to assist Ms. Chaemchaeng in identifying the climate profile perceived by these teachers, I hope you will allow your teachers to participate in her study.

This comparative study involves; (a) team teachers in schools with team teaching, (b) non-team teachers in schools with team teaching, and (c) non-team teachers in schools without team teaching.

The participants will be teachers in the major subject areas; language arts, social science, mathematics, and sciences.

The comparisons in perceptions will be made between; (a) team teachers and non-team teachers within the same school, (b) team teachers and non-team teachers in schools without team teaching, and (c) non-team teachers in schools with team teaching and non-team teachers in schools without team teaching.

The instrument selected is the Organizational Climate Description Questionaire (OCDQ) by Halpin and Croft. The questionaire should take about 5-10 minutes to complete.

No reference to the individual or the school will be made in the study.

Your cooperation in this study will contribute to the knowledge in educational practices for teachers and administrators.

Sincerely yours,

Louis G. Romano

Louis G. Romano
Professor
Department of Educational Administration
M.S.U., East Lansing, MI 48824

APPENDIX B

May 17, 1976

Dear Teacher:

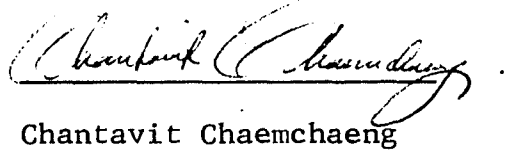
I am presently working on a dissertation to complete my doctoral degree at Michigan State University. Your principal has given me permission to include this school in the research.

The purpose of this research is to study the differences in climate profile as perceived by teachers participating in team teaching and teachers participating in other instructional approaches. All individuals participating will remain anonymous and school will not be identified by name in the dissertation.

The envelope is provided to ensure the confidentiality of your answers. You may proceed to seal the envelop upon your completion of the questionaire. No one will see the completed questionaire but me.

I truly appreciate your cooperation which is so valuable to this study.

Sincerely yours,



Chantavit Chaemchaeng
Educational Administration
Michigan State University
East Lansing, MI 48824

PART I

ORGANIZATION CLIMATE DESCRIPTION QUESTIONAIRE*

INSTRUCTION: Enclosed in this folder are some questions about your school. Please answer them by marking one of the set of lines provided for each answer. Do not dwell too long on any one item, but answer it as you think the situation exists in your school. There are a total of 64 items that should not take more than a few minutes to answer.

REMEMBER: Answer each question as you think the situation exists in your school.

YOU: As an individual you cannot be identified with this instrument.

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	Rarely Occurs	Sometimes Occurs	Often Occurs	Very Frequently Occurs
1. Teachers' closest friends are other faculty members at this school.	____	____	____	____
2. The mannerisms of teachers at this school are annoying.	____	____	____	____
3. Teachers spend time after school with students who have individual problems.	____	____	____	____
4. Instructions for the operation of teaching aids are available.	____	____	____	____
5. Teachers invite other faculty members to visit them at home.	____	____	____	____
6. There is a minority group of teachers who always oppose the majority.	____	____	____	____
7. Extra books are available for classroom use.	____	____	____	____
8. Sufficient time is given to prepare administrative reports.	____	____	____	____
9. Teachers know the family background of other faculty members.	____	____	____	____
10. Teachers exert group pressure on nonconforming faculty members.	____	____	____	____
11. In faculty meetings, there is the feeling of "let's get things done."	____	____	____	____
12. Administrative paper work is burdensome at this school.	____	____	____	____
13. Teachers talk about their personal life to other faculty members.	____	____	____	____
14. Teachers seek special favors from the principal.	____	____	____	____
15. School supplies are readily available for use in classwork.	____	____	____	____
16. Student progress reports require too much work.	____	____	____	____

	Rarely Occurs	Sometimes Occurs	Often Occurs	Very Frequently Occurs
17. Teachers have fun socializing together during school time.	_____	_____	_____	_____
18. Teachers interrupt other faculty members who are talking in staff meetings.	_____	_____	_____	_____
19. Most of the teachers here accept the faults of their colleagues.	_____	_____	_____	_____
20. Teachers have too many committee requirements.	_____	_____	_____	_____
21. There is considerable laughter when teachers gather informally.	_____	_____	_____	_____
22. Teachers ask nonsensical questions in faculty meetings.	_____	_____	_____	_____
23. Custodial service is available when needed.	_____	_____	_____	_____
24. Routine duties interfere with the job of teaching.	_____	_____	_____	_____
25. Teachers prepare administrative reports by themselves.	_____	_____	_____	_____
26. Teachers ramble when they talk in faculty meetings.	_____	_____	_____	_____
27. Teachers at this school show much school spirit.	_____	_____	_____	_____
28. The principal goes out of his way to help teachers.	_____	_____	_____	_____
29. The principal helps teachers solve personal problems.	_____	_____	_____	_____
30. Teachers at this school stay by themselves.	_____	_____	_____	_____
31. The teachers accomplish their work with great vim, vigor, and pleasure.	_____	_____	_____	_____
32. The principal sets an example by working hard himself.	_____	_____	_____	_____

	Rarely Occurs	Sometimes Occurs	Often Occurs	Very Frequently Occurs
33. The principal does personal favors for teachers.	_____	_____	_____	_____
34. Teachers eat lunch by themselves in their own classrooms.	_____	_____	_____	_____
35. The morale of the teacher is high.	_____	_____	_____	_____
36. The principal uses constructive criticism.	_____	_____	_____	_____
37. The principal stays after school to help teachers finish their work.	_____	_____	_____	_____
38. Teachers socialize together in small select groups.	_____	_____	_____	_____
39. The principal makes all class-scheduling decisions.	_____	_____	_____	_____
40. Teachers are contacted by the principal each day.	_____	_____	_____	_____
41. The principal is well prepared when he speaks at school functions.	_____	_____	_____	_____
42. The pricipal helps staff members settle minor differences.	_____	_____	_____	_____
43. The principal schedules the work for the teachers.	_____	_____	_____	_____
44. Teachers leave the grounds during the school day.	_____	_____	_____	_____
45. Teachers help select which courses will be taught.	_____	_____	_____	_____
46. The principal corrects teachers' mistakes.	_____	_____	_____	_____
47. The principal talks a great deal.	_____	_____	_____	_____
48. The principal explains his reasons for criticism to teachers.	_____	_____	_____	_____
49. The principal tries to get better salaries for teachers.	_____	_____	_____	_____

	Rarely Occurs	Sometimes Occurs	Often Occurs	Very Frequently Occurs
50. Extra duty for teachers is posted conspicuously.	____	____	____	____
51. The rules set by the principal are never questioned.	____	____	____	____
52. The principal looks out for the personal welfare of teachers.	____	____	____	____
53. School secretarial service is available for teachers' use.	____	____	____	____
54. The principal runs the faculty meeting like a business conference.	____	____	____	____
55. The principal is in the building before teachers arrive.	____	____	____	____
56. Teachers work together preparing administrative reports.	____	____	____	____
57. Faculty meetings are organized according to a tight agenda.	____	____	____	____
58. Faculty meetings are mainly principal-report meetings.	____	____	____	____
59. The principal tells teachers of new ideas he has run across.	____	____	____	____
60. Teachers talk about leaving the school system.	____	____	____	____
61. The principal checks the subject-matter ability of teachers.	____	____	____	____
62. The principal is easy to understand.	____	____	____	____
63. Teachers are informed of the results of a supervisor's visit.	____	____	____	____
64. The principal insures that teachers work to their full capacity.	____	____	____	____

PART II

Please complete the following questions about yourself:

65. Your sex . . . . . Male _____ Female _____

66. Your age group . . . . . 25 and less _____
26-35 _____
36-45 _____
46-55 _____
56-65 _____

67. Total years of experience in teaching . . . . . _____

68. Total years serving in this school . . . . . _____

69. Total years of participation in team teaching . . _____

70. Total hours of formal training in team teaching . _____

THANK YOU for your time, effort, and cooperation!

APPENDIX C

SCORING FOR THE OCDQ - FORM IV

Subscales

(I. Behavior of the Teachers)	
Disengagement (10 items)	2, 6, 10, 14, 18, 22, 26, 30 38, 60
Hindrance (6 items)	4*, 8*, 12, 16, 20, 24
Esprit (10 items)	3, 7, 11, 15, 19, 21, 23, 27, 31, 35
Intimacy (7 ite s)	1, 5, 9, 13, 17, 25*, 56
(II. Behavior of the of the Principal)	
Aloofness (9 items)	34, 40, 44, 51, 53*, 54, 57, 58, 63*
Production Emphasis (7 items)	39, 43, 46, 47, 50, 61, 64
Thrust (9 items)	28, 32, 36, 41, 48, 52, 55, 59, 62
Consideration (6 items)	29, 33, 37, 42, 45, 49

Response	Score
Rarely Occurs	1
Sometimes Occurs	2
O Occurs	3
Very Frequently Occurs	4

*Scored Negatively

APPENDIX D

[illegible]													YA84556 [illegible]
[illegible]													YA84556 [illegible]
[illegible]													YA84556 [illegible]
1031112	913	8	4	200	200	300	300	178	229	267	200		
1041112	4	4	1	3	200	167	300	286	189	200	256	183	
1071122	4	5	4	0	200	133	330	320	207	243	344	300	
1091122	4	7	4	6	230	200	310	286	289	229	239	183	
11011221111		7	4		200	267	310	320	197	229	356	350	
1011121	4	3	3	6	260	200	270	274	244	300	367	283	
1021121	2	3	1	0	170	150	310	257	211	314	289	133	
1081111	2	2	1	5	170	150	330	186	167	200	311	217	
1051124	6	7	6	0	170	217	310	274	289	243	378	300	
10611141216		7	0		210	200	290	245	233	229	300	217	
20122122	4	7	4	0	200	200	320	314	144	214	322	233	
2022122	6	6	5	0	210	233	220	314	211	171	200	133	
2032112	8	8	6	0	180	350	140	243	167	186	233	200	
20421221010		5	0		200	217	270	200	200	129	222	150	
20621121013		5	0		220	250	280	229	211	157	256	167	
2102112	7	7	4	4	200	200	300	300	167	171	267	167	
2122112	1	1	1	0	220	200	300	257	178	214	378	267	
2142112	6	8	5	3	240	217	220	200	211	214	256	167	
2152112	712		6	0	180	167	280	214	256	250	278	267	
2172122	8	8	5	0	296	367	170	214	200	171	111	100	
2052111	2	3	2	0	240	150	240	229	167	186	267	200	
2072111	1	1	1	0	190	167	200	214	167	143	289	233	
20821211	1	1	1	0	160	167	280	229	156	186	278	200	
2132111	2	2	2	0	220	250	250	243	178	157	322	217	
2162111	3	3	3	1	210	167	270	286	222	171	244	183	
2112123	2	6	2	0	180	200	320	314	189	171	300	267	
209212518	23	4	6	200	333	330	229	189	186	333	267		
3013122	5	7	2	0	200	250	310	214	233	213	244	200	
3023122	1	1	1	0	200	133	220	214	189	171	133	117	
3033122	4	4	2	0	290	333	310	329	222	243	211	167	
3043122	6	7	2	0	270	400	230	257	11	243	122	133	
3053122	9	8	2	0	230	233	270	257	178	250	256	167	
3063112	8	8	330		260	233	200	214	89	200	267	250	
3073112	5	5	2	0	210	233	300	286	111	229	256	217	
3083112	1	1	1	0	230	250	210	200	189	243	322	233	
3093112	5	5	2	0	200	233	290	286	189	229	256	233	
3113122	4	4	2	0	250	233	330	371	201	236	211	183	
3103121	2	3	130		220	200	290	214	222	243	233	167	
40341121010		7	0		190	167	330	300	211	257	367	333	
4044112	2	4	2	0	160	250	360	274	178	143	322	267	
4054112	1	5	4	0	170	217	320	286	133	186	344	350	
4064112	4	8	4	0	190	133	330	314	133	243	400	400	
40141121	4	4	199		130	117	381	300	156	157	400	300	
4084113	910		6	0	150	150	300	274	178	129	311	300	
40741111228		6	0		160	167	330	257	229	157	333	300	
4024113	5	6	6	0	170	267	350	257	178	129	322	300	
11113121313		3	0		220	233	300	286	97	243	189	183	
1131222	2	3	2	0	130	133	300	257	200	257	278	167	
1141212	2	2	1	0	150	200	300	257	229	371	333	200	
1151212	610		2	0	190	233	330	200	200	271	311	133	
1161212	5	5	0	0	190	217	350	229	278	257	289	283	
1181212	6	9	0	0	120	233	340	229	229	286	211	133	
11212131111		4	0		130	200	310	229	233	257	300	183	
1171213	712		0	0	200	167	270	229	222	229	200	217	
1191224	610		2	2	170	233	240	214	244	243	178	133	
2102212	9	8	3	0	200	150	210	143	78	157	300	150	
2192212	2	8	2	0	170	167	330	329	156	229	378	217	
2222222	4	6	4	0	140	133	300	274	200	214	389	267	
2252212	3	7	3	0	180	217	270	274	178	186	333	167	
2262212	3	4	3	0	190	233	270	286	197	186	267	283	
2272212	2	4	2	0	260	167	230	257	189	214	333	283	
2282222	5	6	5	0	300	200	290	300	211	129	178	167	
2302222	2	5	2	0	170	250	280	229	178	143	278	217	
2312222	2	4	2	0	210	300	240	229	178	171	256	233	

2322222	3	5	3	0	130	173	330	300	156	157	367	217
2332212	3	4	3	0	240	200	250	271	200	186	267	217
2212213	616	5	0		140	250	240	286	156	129	322	250
2242213	514	9	0		170	183	290	243	167	186	300	200
2342223	717	7	3		170	200	250	257	197	157	222	183
2292223	711	0	0		170	233	300	314	189	186	289	233
2202224	815	6	0		240	263	260	186	211	200	300	133
3133222	6	6	2	0	200	150	330	200	240	214	267	250
3136212	3	3	1	0	190	150	250	243	211	186	289	233
3146212	8	8	2	4	310	167	260	243	211	171	322	233
3156212	4	5	2	0	250	250	270	200	225	225	278	200
3173212	2	5	2	0	260	200	210	229	156	186	189	200
3136222	3	3	1	0	220	250	300	257	197	214	222	167
3206212	7	7	0	0	190	253	340	300	167	229	278	217
3223222	4	5	2	0	240	283	250	252	197	186	222	167
3236212	5	5	2	0	240	283	230	314	140	200	211	183
3233222	5	5	0	0	210	217	250	257	178	186	300	150
3216211	1	1	0	0	200	217	290	244	249	200	322	217
3253211	2	2	2	0	150	250	240	200	197	200	244	167
3193211321222			2	0	200	217	250	243	144	143	233	200
3163224	714		2	0	250	217	250	300	208	271	244	200
4114212	810		0	0	180	183	310	21	178	200	289	283
4154222212			0	0	170	200	400	271	222	171	311	200
4104212	913		2	0	180	200	310	257	197	243	356	233
4124212	4	6	0	0	160	233	240	243	211	144	133	133
4264222	3	8	0	0	300	267	340	157	156	157	200	250
4214212	5	5	499		120	167	280	243	197	229	322	200
4264222	1	7	1	0	130	183	350	257	156	143	356	217
4256212	5	6	130		130	253	260	229	242	214	289	200
4104213131		5	0	0	210	233	320	271	140	143	311	200
4144213	7	8	1	0	160	233	280	214	197	200	333	233
4164223	512		0	0	200	167	250	243	211	143	300	250
4224223	3	8	3	0	150	210	330	300	243	214	333	183
4244213	7	7	3	3	130	210	310	286	144	200	322	317
4194223415		26	2	0	170	217	320	286	197	200	344	283
4124224	913		0	0	220	233	300	300	243	171	256	183
4134224	6	9	0	0	190	217	330	286	197	129	300	233
4174224	715		4	0	150	167	290	343	200	214	300	233
5025212	3	3	0	0	130	150	310	214	200	186	322	183
5036222	3	8	425		220	167	330	320	211	243	289	283
5055212	4	9	420		170	250	360	343	144	257	278	333
5065212	2	4	1	0	170	217	310	329	211	300	400	317
5076212	2	2	0	0	150	117	340	214	200	171	344	233
5085212	511	9	1		190	133	310	186	200	214	367	283
5095222	4	5	4	3	120	150	390	243	200	186	400	217
5105212	7	7	2	0	130	130	320	257	189	271	344	350
5115222	5	6	510		140	133	370	336	178	157	333	233
5135222	1	5	1	0	140	183	320	229	249	257	278	233
5145212	2	2	130		190	167	300	214	211	200	278	200
5155212	710		2	0	170	100	300	357	200	229	322	283
5175212	8	9	2	0	250	133	360	386	211	214	278	333
5015211	1	1	0	0	130	100	340	300	233	214	400	300
5195221	2	2	230		150	133	350	271	200	257	378	267
5155221	2	2	1	0	180	200	310	286	200	186	289	217
5195221	2	2	2	6	130	133	360	371	178	214	400	300
5175221	3	3	1	0	220	167	290	343	156	157	278	183
5215213	915		3	0	140	217	330	229	240	229	333	217
5045214	92813		0		170	117	270	200	178	286	322	267
5205221	720		5	8	190	167	280	286	189	143	222	167
6016232121212			2	0	200	233	310	300	207	214	289	200
6026212	5	7	0	0	250	200	310	320	189	286	267	167
6046222	7	7	0	0	140	167	260	186	178	214	267	267
6056212	3	3	0	0	170	183	320	414	273	214	300	267
6126212	1	6	3	0	130	217	260	257	244	258	278	183

[illegible]	1	4	0	0	[illegible]	[illegible]	[illegible]	220	[illegible]	[illegible]	[illegible]	167
6100222	6	6	0	0	240	217	180	429	200	229	167	150
6116222	7	8	5	0	160	233	250	171	189	186	211	133
6126212	5	6	0	0	370	150	200	157	222	200	256	167
61462221010			0	0	230	167	250	243	233	200	211	183
6166222	7	7	0	0	220	200	210	229	189	171	167	150
6186222	7	8	0	0	210	217	250	314	243	243	233	133
6196212	6	6	0	0	220	217	310	243	211	271	256	250
6216222	3	7	0	0	240	267	240	229	211	157	178	133
6226212	4	4	0	0	250	267	290	271	197	243	222	150
6209221	1	1	0	0	190	200	260	214	156	157	256	150
6246221	4	5	0	0	190	217	220	243	222	200	233	150
60352131717			0	0	150	117	360	243	211	257	270	183
60662231113			0	0	150	200	190	186	156	200	222	167
6096223	3	4	0	0	130	267	210	243	244	200	222	133
6235223	3	4	0	0	200	217	260	214	200	186	222	250
62662131213			1	0	220	183	290	286	243	286	222	200
6136224	8	8	0	0	180	200	290	257	211	243	244	183
61562152937			0	0	200	167	330	171	156	257	267	200
61762152530			0	0	120	167	240	229	197	186	278	167
6256225	1	6	0	0	120	200	310	214	222	357	367	183
7027212	5	5	2	0	240	117	290	286	189	271	244	150
7037222	3	3	1	3	220	200	290	229	189	214	311	183
7047222	4	6	2	0	200	217	220	229	244	214	211	167
70572121111			0	0	270	233	290	286	175	186	233	150
7117212	7	7	0	0	230	167	230	214	178	186	211	217
7127212	7	8	0	0	230	200	270	200	167	214	244	183
7137212	3	5	0	0	220	217	290	257	211	214	389	217
7157212	4	5	0	0	130	183	240	257	156	143	244	233
71472121212			0	0	190	217	280	257	156	171	256	133
7197212	3	6	0	0	260	233	250	243	200	186	156	167
7207212	3	4	0	4	160	117	320	243	233	257	289	150
7217222	2	7	0	0	190	217	250	214	167	186	211	167
7237222	7	8	2	0	180	233	290	286	156	200	267	167
7237222	6	6	2	0	140	233	300	314	178	200	267	217
7247212	7	7	0	0	180	233	230	300	222	257	222	133
7097221	5	5	020		200	200	331	329	133	229	244	133
7017213	8	11	012		170	133	333	343	156	171	356	333
7177223	8	10	0	0	170	150	361	300	200	243	322	200
7067221	8	16	0	6	130	167	350	286	167	171	322	233
70772211719			0	0	190	300	320	314	211	229	233	150
70372241920			6	0	120	183	300	257	167	200	233	117
71472241327			0	0	210	233	250	200	233	229	233	233
71672212030			2	0	150	233	290	143	167	129	200	133
71072251122			0	0	140	233	290	243	257	186	278	183
8010212	6	6	0	0	240	133	240	200	189	229	211	183
8023212	3	7	0	0	180	267	210	286	211	200	244	250
8043212	5	5	0	0	170	167	220	220	189	214	244	167
8053212	7	7	0	0	311	233	240	220	211	200	211	217
8098212	3	5	0	0	250	350	220	257	197	143	300	217
8118222	5	5	0	0	310	217	210	220	244	171	167	183
8129222	3	10	0	0	220	267	250	214	189	186	211	167
8138212	1	6	0	0	220	200	240	220	189	214	222	183
8149212	3	9	2	0	240	250	200	286	211	157	178	167
81582121212			0	0	230	183	260	243	200	186	256	217
8176222	7	8	0	0	210	200	220	186	200	186	244	200
8079221	1	3	0	0	250	250	230	214	200	200	233	200
8088221	1	1	0	0	200	267	270	257	200	229	211	167
8169221	1	1	0	0	180	167	240	271	156	129	289	233
80382241915			0	0	170	267	200	214	211	171	300	333
8068224	2	31	0	0	150	217	260	186	244	157	267	183
8108214	5	6	3	0	300	250	200	200	222	214	233	233

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