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**CASE STUDIES OF THE STRUCTURE, DYNAMICS, AND OUTCOMES
OF INTERDISCIPLINARY TEAM ORGANIZATION
IN OREGON MIDDLE SCHOOLS**

**by
GAIL LYON**

**A dissertation submitted in partial fulfillment of the
requirements for the degree of**

**DOCTOR OF EDUCATION
in
EDUCATIONAL LEADERSHIP:
ADMINISTRATION AND SUPERVISION**

**Portland State University
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DISSERTATION APPROVAL

The abstract and dissertation of Gail Lyon for the Doctor of Education in Educational Leadership: Administration and Supervision were presented December 8, 1993, and accepted by the dissertation committee and the doctoral program.

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ABSTRACT

An abstract of the dissertation of Gail Lyon for the Doctor of Education in Educational Leadership: Administration and Supervision presented December 8, 1993.

Title: Case Studies of the Structure, Dynamics, and Outcomes of Interdisciplinary Team Organization in Oregon Middle Schools

Middle school literature advocates interdisciplinary team organization as a structure that enhances student learning and teacher satisfaction. In an interdisciplinary team, teachers responsible for different content areas collaboratively plan the instructional program for a shared group of students. Yet, fewer than fifty percent of the nation's middle schools use an interdisciplinary team structure, and research indicates that teams are fragile and temporary. Few studies were found that described interdisciplinary team organization at the team or individual teacher level.

The purpose of this case study is to describe the structure, dynamics, and outcomes of interdisciplinary teams of teachers in middle schools. The collection, analysis, and evaluation of data focused on four areas: (a) team structure

including goals, roles, and leadership; (b) team dynamics ("teamness"), including collaboration, cohesion, and communication; (c) teacher affective outcomes of satisfaction, efficacy, and stress; and (d) teacher behavioral outcomes of curriculum and instruction and counseling and discipline.

The researcher collected data from five sources of evidence including documents, structured interviews, key informant interviews, direct observation, and questionnaires. Two middle schools that were implementing interdisciplinary team organization for the first year were selected for the study. Their differences in demographics, teaming structure, and district/school history allowed for a basis of comparison and contrast. The data were organized and presented in four case studies of interdisciplinary teams and two cross-case analyses, providing a descriptive account of the experiences of teachers involved in an interdisciplinary team structure.

The results of the study indicated that:

1. Structural variables affected team planning.
2. The level of teacher collaboration on teams was a developmental process.
3. Teachers derived professional benefits and personal satisfaction from teaming and experienced a reduction of stress.

4. Barriers of time and training impeded team effectiveness in the area of developing and implementing interdisciplinary curriculum.

Further research on effective team practices is warranted, particularly on the effects of group process training and the developmental nature of team collaboration. In addition, further research is recommended on the effects of an interdisciplinary team structure on student learning outcomes and on teachers' day-to-day instructional practices in the classroom.

ACKNOWLEDGEMENTS

To those who helped me throughout this dissertation I am very grateful.

Special thanks to my advisor, Dr. Tom Chenoweth, for his support and help throughout this study.

I am thankful to the members of my doctoral committee, Dr. Dilafruz Williams, Dr. Kenneth Peterson, Dr. James Kushman, and Dr. Robert Liebman for their advice and interest.

I wish to express my appreciation to my colleagues, Betty Shalhope and Harvey Hazen, for their continuing support and encouragement.

My appreciation is extended to the principals and teachers who willingly cooperated in conducting this study.

Finally, this dissertation is dedicated to my parents, Val and Ray Anderson, and brother, Gary, who have given me their love and encouragement throughout my entire education. I especially dedicate this dissertation to my husband, Jim Lyon, and my children, John and Sarah. I am very grateful for their love, patience, and encouragement.

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CHAPTER I

INTRODUCTION

The Carnegie Report, Turning Points: Preparing Youth for the 21st Century, has focused renewed interest on the educational needs of America's early adolescents, ages 10 to 14 (Carnegie Council on Adolescent Development [Carnegie Council], 1989). The report drew attention to the fact that at least one in four early adolescents is vulnerable to school failure. While our current middle level schools are "potentially society's most powerful force to recapture millions of youth adrift, too often these schools exacerbate the problems of young adolescents" (p. 8). Caught in the Middle, a task force report on middle level education published by the California Department of Education also voiced this concern by saying, "the success of the educational reform movement depends on meeting the needs of middle grade students--both academically and socially" (Fenwick, 1987, p. v). The Middle Level Task Force Report on Oregon's Educational Act for the 21st Century drew heavily on these reports in outlining structural changes needed in Oregon middle level schooling (Oregon Department of Education [ODE], 1993).

One answer to the question of how to reform middle schools to be more responsive to the developmental needs of early adolescents lies in an organizational structure called interdisciplinary team organization (ITO). This structural plan has been described and reiterated in middle school literature since the 1960s (Alexander & George, 1981; Alexander & Williams, 1965; Bondi, 1972; Fenwick, 1987; George, Stevenson, Thomason, & Beane, 1992; Pray, 1969; Wiles & Bondi, 1981). Interdisciplinary team organization recommends that middle schools be organized into interdisciplinary teams of teachers and students working together to achieve academic and personal goals and create small communities for learning. Advocates of interdisciplinary team organization feel that this structure enhances learning by reducing student anonymity and isolation, by setting consistent expectations for students, and by encouraging students to make cognitive connections among separate disciplines (Carnegie Council, 1989; Erb & Doda, 1989; Wiles & Bondi, 1981). Furthermore, interdisciplinary team organization is felt to offer advantages for teachers by providing "a much needed support group for teachers, eliminating the isolation teachers experience in departmentalized settings" (Carnegie Council, 1989, p. 40) and by increasing teacher satisfaction through participatory decision making and expanded leadership opportunities (Erb, 1987).

Although middle school literature recommends that interdisciplinary teams of teachers work together to plan curriculum, instruction, and provide counseling for their shared students (Carnegie Council, 1989; Fenwick, 1987), there is evidence that ITO structures are fragile and difficult to maintain (Binko & Lawlor, 1986; Bredo, 1977; Cohen, 1981; Little, 1986; Valentine, 1984).

The literature contains no information about the day-to-day workings of ITO teams and how teams develop that special quality of "teamness" that results in higher teacher satisfaction and improved programs for students. An ITO structure may facilitate teacher cooperative planning, and this, in turn, could affect students' learning in the classroom through curricular changes and teacher satisfaction. Therefore, the possible effects of an interdisciplinary team organizational structure on teachers' attitudes and on curriculum and program planning deserve further study.

BACKGROUND

Theoretical Basis for the Study

At the broadest level, the theory that supports research on the relationship between teacher attitudes and workplace conditions lies in the human relations school of management, specifically in the work of Herzberg (1982). Herzberg posited that job satisfaction leads to increased

motivation and productivity, and among the factors that create satisfaction are achievement, the work itself, growth, responsibility, and recognition. Sergiovanni and Elliott (1975) replicated and supported Herzberg's work among teachers. Goodlad (1984) identified teachers' job satisfaction as an important criterion of school quality. The human relations model of school organization views employee job satisfaction and morale as primary aims of participation (Conley, 1991).

Bridges and Hallinan (1978) further provided a theoretical basis for this study. They postulated that three organizational variables relate to employee absenteeism, (an indicator of employee satisfaction). The first of these factors was "subunit size" (in this case, the size of the faculty). Bridges and Hallinan proposed that large subunit size increased difficulties in communication among employees, and, thus, lower levels of communication resulted in low group cohesiveness.

A second structural property identified by Bridges and Hallinan (1978) was "work system interdependence," that is, "the extent to which the organization's primary function is arranged and carried out jointly or collaboratively by employees" (p. 25). Bridges and Hallinan theorized that higher degrees of interdependence in the work system of schools would result in higher rates of interaction.

An increase in interactions provides teachers with greater opportunities to satisfy a strong basic

human motive, the desire to be continuously associated in work with one's colleagues. (pp. 25-26)

A high level of social rewards from peer group relations was expected to increase satisfaction (and reduce absenteeism). A third characteristic in the Bridges and Hallinan framework was "total organizational size," in this case, the total number of students in the school.

One can extend the reasoning of Bridges and Hallinan (1978) to include the ITO structure. The subunit size of an ITO team is quite small (usually four to five teachers) in relation to the overall size of a faculty. This small subunit size theoretically would increase levels of communication and raise group cohesiveness. ITO structures would theoretically increase group interdependence by requiring collegial planning and joint responsibility for a common group of students, thereby increasing rates of interaction and increasing the opportunity for satisfaction from associating with one's colleagues.

Likert's (1961) causal model of organizational causes and effects supplies a framework for understanding the relationship between interdisciplinary team organization (a structural variable) and teacher attitudes. Likert described causal variables as the first link in the cause/effect chain. These variables include such things as the design of the school structure and the leadership style. These causal variables affect the intervening variables.

The intervening variables reflect the current condition of the internal state of the organization, its loyalty, skills, motivations, and capacity for effective interaction, communication and decision making. (p. 61)

Finally, the end result variables, or teacher outcomes, are the last link of the chain.

School Structure and Workplace Conditions

The way schools are structured may make a difference in the quality of school programs and the satisfaction of teachers. Current writing on school restructuring suggests that efforts should be focused on student outcomes and ways to transform schools to produce those outcomes (David, 1991). However, Goodlad (1984) reminded us that

schools are first for students. But to ignore that students are influenced by teachers, who in turn are influenced by their workplace, would be to once again lead us to simplistic diagnoses and inadequate proposals for school improvement. (p. 30)

Studies of the school as a workplace have focused on the effects of school organizational structure on teacher behaviors and attitudes (Anglin, 1979; Olszewski & Doyle, 1976; Rosenholtz, 1985b, 1989a). Anglin (1979) suggested that "until recently the instructional role of the classroom teacher has ignored the organizational structure of the school within which the teacher functions" (p. 439). Interdisciplinary team organization in middle schools is a specific organizational strategy designed to create a collaborative structure which has potential benefits for

students and teachers. After a review of the literature on teaming, Arhar, Johnston, and Markle (1988) concluded that while "teaming arrangements are not sufficient to cause collaboration, they are a necessary prerequisite for such cooperation among teachers" (p. 25).

Collaboration

Collaboration among teachers is one dimension of the workplace character of schools that has received considerable attention in the research literature. Studies indicate that students benefit from collaborative schools (Cohen, 1981; Little, 1982; Purkey & Smith, 1983; Rosenholtz, 1989a, 1989b; Rutter, Maughan, Mortimore, Ouston, & Smith, 1979). Teachers in effective schools are "further encouraged by a supportive collegial group that lends ideas and assistance where needed" (Rosenholtz, 1985a, p. 352).

The literature on effective schools mentions collaboration and teacher participation in decision making as elements of effective schools. Shared teacher planning was among the characteristics that distinguished more successful schools from less successful schools (Rutter et al., 1979). Little's (1982) case study found that successful schools were characterized by teachers who talked with one another about teaching practice, who received useful feedback about their teaching, who planned, prepared,

and evaluated teaching materials together, and who taught each other about teaching.

Collaborative Structures in Business and Industry

The idea of interdisciplinary team organization has also been receiving substantial attention in the literature of business organizations (Dumaine, 1990; Larson & LaFasto, 1989; Lawler, 1986; Parker, 1990; Senge, 1990; Wellins, Byham, & Wilson, 1991). Variouslly called "self-managed teams," "cross functional teams" or "superteams," these multidisciplinary teams are leading their companies to greatly increased productivity because

teams composed of peopled with different skills, from different parts of the company, can swoop around bureaucratic obstacles and break through walls separating different functions to get a job done. (Dumaine, 1990, p. 54)

Senge (1990) described a learning organization as essential to success in competitive global markets. One of the five components of a learning organization described by Senge is team learning.

We know that teams can learn: in sports, in the performing arts, in science, and even occasionally in business. There are striking examples where the intelligence of the team exceeds the intelligence of the individuals in the team and where teams develop extraordinary capacities for coordinated action. Team learning is vital because teams, not individuals, are the fundamental learning units in modern organizations--unless teams can learn, the organization cannot learn. (p. 10)

The SCANS Report for America 2000 described production in the high performance workplace as the responsibility of integrated work teams (Secretary's Commission on Achieving Necessary Skills [Secretary's Commission], 1991). The SCANS Report asserted that effective team collaboration necessary in the high performance workplace should be one of the major student outcomes in restructured schools for the 21st century. This model of teaming discussed in the literature of business organizations is similar to the model of ITO in the literature of middle schools. Both share a common research and theory base in the area of participatory decision making.

Participatory Decision Making

American business has shown an intense interest in participatory decision making as one area which may provide answers to problems of productivity and quality (Levine & Tyson, 1990). "Additionally there has been a growing concern for participation as a means of utilizing the potential of a more sophisticated workforce" (Margulies & Black, 1987, p. 385). There is considerable evidence that worker participation is correlated with increased productivity and worker satisfaction in many industries and countries (Brown & Reich, 1989; Cotton, Vollrath, Froggatt, Lengnick-Hall, & Jennings, 1988; Levin, 1991; Levine & Tyson, 1990; Lincoln, 1989; Margulies & Black, 1987; Miller

& Monge, 1986). Team production techniques and quality circles are two types of participation most likely to have beneficial effects on organizational efficiency (Levine & Tyson, 1990). Experiments with interdisciplinary structures in business and industry indicate that ITO in middle schools is supported by a corresponding interest in the advantages of a participatory team structure in business.

The research base on participatory decision making in schools suggests that participation is a key determinant of such individual outcomes as teacher job satisfaction, stress, loyalty, role ambiguity, and collaboration (Conley, 1991). Teachers, who have been surveyed about several traditional decision-making forms in schools, listed a number of benefits in participation, including self-efficacy, higher quality joint decisions, and closer relationships with other teachers. However, the data also showed some costs of participation, including lack of time and loss of autonomy (Conley, 1991). Interdisciplinary team organization in the middle school movement has been examined as one new form of participatory decision making in schools. Conley (1991) suggested that more research is needed to "clarify the advantages of these new structures over more traditional teacher teams" (p. 250).

Collaboration and Teacher Affective Outcomes

One of the primary goals of interdisciplinary team organization is to provide a collegial structure for teacher planning. One expectation is that collaboration will result in beneficial changes in student programs. Another expectation is that the collegial environment of an ITO structure will raise teacher satisfaction, increase teacher self-efficacy, and reduce teacher stress. Therefore, the relationship of interdisciplinary team organization to satisfaction, efficacy, and stress calls for further investigation.

Satisfaction. Collaboration relates to teacher satisfaction (Arhar, Johnston, & Markle, 1988; Little, 1987; Rosenholtz, 1989b). Little (1987) noted that in those schools that stand out for their collegueship rather than isolation, "recognition and satisfaction stem not only from being a masterful teacher but also from being a member of a masterful group" (p. 491). Goodlad (1984) found that the degree of staff cohesiveness and the nature of the problem solving and decision-making climates at schools were factors also highly related to teachers' satisfaction. Interdisciplinary team organization in middle schools is a vision and an attempt to create a collaborative structure that results in greater teacher satisfaction.

Efficacy. Collaborative school structures may also be related to teachers' attitudes about efficacy--the extent to

which teachers believe they can affect student learning (Ashton, Webb, & Doda, 1983; Kushman, 1990; McLaughlin & Marsh, 1978; Smylie, 1988). Rosenholtz (1989a) found that

the degree of teacher collaboration strongly and independently predicts teacher certainty (efficacy). Teachers who share their ideas, who unabashedly offer and solicit advice and assistance and who interact substantively with a greater number of colleagues, expand their pedagogical options and minimize their uncertainty. (p. 1)

Stress. In the literature of teacher stress, there is mixed evidence about the relationship between collaboration and stress. Some studies suggest that inordinate time demands--lack of time for work and preparation for teaching--are key factors in causing stress in teachers (Blase, 1986; Needle, Griffin, Svendsen, & Berney, 1980; Openshaw, Olander & Farrell, 1970). The literature on team structures frequently mentions that collaboration causes stress by placing strong demands on already-limited teacher time (Alexander & George, 1981; Ashton, Doda, Webb, Olejnik, & McAuliffe, 1981; Blomquist, 1986; Little, 1986; Pook, 1981; Valentine, 1984; Vars, 1966). However, other studies conclude that collaborative structures alleviate stress by creating a supportive environment (Erb, 1987; Farber & Miller, 1981; House, 1981; Matteson, 1987; Pines, Aronson, & Kafry, 1981).

Another factor in the area of teacher stress and burnout is role-related stress; that is, the discrepancy between the expected experiences in a role and the actual

work situation (Hoover-Dempsey & Kendall, 1982; Litt & Turk, 1985; Phillips & Lee, 1980; Read, 1987). Role overload (too much to do in too little time) was described as the third most frequently cited reason for thinking about leaving teaching (Litt & Turk, 1985). In terms of ITO and the present study, teachers may feel stress when their role in a traditional, isolated classroom conflicts with a new role of expected collegiality and team planning. Stress may lower job satisfaction and reduce capacity to cope with the environment, cause negative attitudes toward students, and reduce effectiveness of instruction (Johnston & Markle, 1986).

PROBLEM STATEMENT

Despite the recommendations of middle school philosophy, less than 50% of the nation's middle schools utilize an interdisciplinary team organizational structure. Evidence of this gap is found in recent surveys (Alexander & McEwin, 1989; Binko & Lawlor, 1986; Cawelti, 1988; Mac Iver, 1990; Valentine, 1984). These surveys show that only about 60% of middle schools (grades five through eight or six through eight) and 75% of middle-level schools with other grade combinations do not utilize an interdisciplinary team organization (Mac Iver, 1990), although the literature on the middle school has claimed that ITO has been a critical ingredient of the exemplary middle school for the last 30

years. The literature also suggests that teaming arrangements are fragile, informal, and temporary (Binko & Lawlor, 1986; Bredo, 1977; Cohen, 1981; Little, 1986; Valentine, 1984).

The literature assumes that ITO is the preferred structure for middle schools because teachers (and consequently students) will derive personal and professional rewards from implementing ITO. This assumption needs further examination. Because of recent interest in work teams in business and manufacturing, additional research about work teams in a school setting is a timely and important topic.

PURPOSE OF THE STUDY

The purpose of this study is to describe and explore the dynamic workings of interdisciplinary teams of teachers in two Oregon middle schools. The focus is on the teachers who are attempting to make an interdisciplinary team organizational (ITO) structure work--what they know and do, the processes of their interrelationships, their perceptions of themselves working in new cooperative roles, and the curricular and student outcomes of this teaming process. An additional purpose is to add to the body of research about ITO teams in order to provide useful information to schools currently using an ITO structure or considering adopting one.

DESIGN

Case Study

A multiple descriptive case study design was used. A case study of three teams within one building, allowed for a basis of comparison. An additional case study of ITO teaming in another school allowed for a comparison of ITO development between teams in two different schools.

Causal Model Framework

Likert's (1961) causal model provided a guiding framework for this study. The guiding questions for the study were taken from the three segments of the framework: Causal Variable: "Structure," Intervening Variable: "Teamness," and End-Result Variables: "Outcomes" (see Table I).

RESEARCH QUESTIONS

The questions for the study were formulated after a review of the relevant literatures on: (a) school structures that support collaboration; (b) participatory decision making in business and industry; (c) collaborative structures related to teacher attitudes on satisfaction, efficacy, and stress; and (d) middle schools and interdisciplinary team organization in the middle school. The following questions served to guide the data collection at each selected site and provided the organizing framework for data analysis.

TABLE I
CAUSAL MODEL FRAMEWORK

Causal Variable: Structure	Intervening Variable: Teamness	End-Result Variables: Outcomes
<u>All School Structure</u> history/policy membership school goals linkages leadership schedule	<u>Collaboration</u> creativity problem solving <u>Cohesion/Commitment</u> trust shared goals participation	<u>Teacher Affective Outcomes</u> satisfaction stress efficacy <u>Teacher Behavioral Outcomes</u> curriculum and instruction counseling and discipline
<u>Individual Team Structure</u> organization members roles goals procedures leadership	<u>Communication</u>	

1. How do teachers describe the structure of their team?
2. How do team members define "teamness" as it operates in their team and what elements contribute to teamness?
3. How do ITO teams affect teachers' attitudes about their levels of satisfaction, efficacy and stress as they relate to teaching?
4. How does an ITO team structure affect teachers' behaviors (outcomes) in planning and carrying out curriculum/instruction and counseling/discipline?

5. Are there differences in how teachers from different teams in the same school and teams in two different schools describe their experiences and attitudes about teaming?

NEED FOR THE STUDY

The literature suggests that additional research on interdisciplinary team organization in middle schools is needed (Arhar, Johnston, & Markle, 1988; Cotton, 1982; Little & Shulman, 1984). As Arhar, Johnston, and Markle (1988) note, "middle school research on the teacher outcomes associated with interdisciplinary teaming is in its infancy" (p. 22).

Several sources give credence to the importance of additional case study research on interdisciplinary teams in the middle school. Little and Shulman (1984) noted that few studies of middle schools analyze the work relationships among faculty. Furthermore, Little (1990) stated that:

We have little in the way of close-up description of the work people do together versus what they attempt alone. Teachers, administrators, school boards, and other policy makers, teacher educators, all will require a clearer picture of what the gains and sacrifices are when teachers work together and arrive at decisions collectively. (p. 522)

Cohen (1981), who did a great deal of research on team teaching in the 1970s as part of the Stanford study on team teaching and open schools, suggested that future research should concentrate on two areas: (a) to focus on whether or

not teaming resulted in "significant change in what teachers do" (p. 167), and (b) "to study the implementation of complex methods of teaching in relationship to the way the school staff works together" (p. 189).

Further support for this study comes from DeVirgilio (1972) who suggested that little constructive research had been done concerning how to organize and conduct teams and that research is needed to study what dynamics occur when people of different disciplines sit down to plan together. Also, in a study conducted of 400 members of the National Middle School Association, the top priority for research in the area of organization of the middle school was "evaluating the interdisciplinary approaches currently used in the middle school" (Johnston & Markle, 1986, p. 99). Conley (1991) suggested that more research in ITO is needed to clarify the advantage of this new structure. This research is needed especially considering the relative recency of middle school approaches and the transitory history of teacher teams in middle schools (Binko & Lawlor, 1986).

A case study approach seemed appropriate to investigate such areas of meaning. Interpretive research, a term used by Erickson (1987) to refer to ethnography, case study, and qualitative research, has as its key feature a "central research interest in human meaning in social life, and in its elucidation and exposition by the researcher" (p. 119).

DEFINITION OF TERMS

Interdisciplinary Team
Organization

Interdisciplinary team organization (ITO) is an organizational framework used to schedule students and faculty for instruction. "The aim of interdisciplinary teaming is to promote communication and coordination among subject matter specialists" (Wiles & Bondi, 1981, p. 131). Alexander and George (1981) suggested some criteria for an ITO structure. The term interdisciplinary team organization is used to describe a way of organizing faculty so that a group of teachers share:

1. the responsibility for planning, teaching and evaluating curriculum in more than one academic area
2. the same group of students
3. the same schedule
4. the same area of the building.

Interdisciplinary team organization is not synonymous with team teaching described in the literature of the 1960s and 1970s, which was based on shared instruction of a common group of students in one classroom at one time. Team teaching then was frequently associated with differentiated staffing, separating master teachers from less experienced colleagues (Alexander & George, 1981).

Collaboration

Collaboration is defined as cooperative work in which teachers work together to share, plan, and solve problems of mutual concern. Collaboration involves interaction among colleagues and is opposed to the norms of isolation and self-reliance described by Lortie (1975). Rosenholtz (1989a) further described collaboration as "rendering mutual advice and assistance" (p. 73) and collaborative settings assume "that improvement in teaching is a collective rather than an individual enterprise" (p. 73). Little (1990) stressed that collaboration implies ties among colleagues and these ties produce mutual influence. In her study on the norms of collegiality, Little (1982) stated that collaboration is interdependent rather than independent and is characterized by four types of interactions: (a) teachers engaging in precise talk about teaching; (b) teachers receiving feedback that assumes a shared technical knowledge; (c) teachers planning, designing, researching, evaluating, and preparing teaching materials together; and (d) teachers teaching each other the craft of their profession.

Satisfaction

The term "satisfaction" refers to peoples' feelings about the rewards they have received from their work (Lawler, 1986). Maslow's Hierarchy of Needs Theory states

that people are driven to satisfy, or fulfill, the basic drives of human existence (Owens, 1987).

Herzberg's Two Factor Theory is that people tend to see job satisfaction as being related to such intrinsic factors as success, the challenge of the work, achievement, and recognition. (Owens, 1987, p. 106)

Job satisfaction is often linked to worker participation in workplace decisions. Theorists from the human relations school of management (Blake and Mouton, Likert, and McGregor cited in Miller & Monge, 1986)

propose that participation will lead to greater attainment of high-order needs, such as self-expression, respect, independence, and equality, which will in turn increase morale and satisfaction. (p. 730)

In this study, the term "satisfaction" refers to teachers' general positive feelings and attitudes about their teaching roles. Satisfaction assumes that teachers receive personal and professional psychic rewards from their jobs. "Psychic rewards consist entirely of subjective valuations made in the course of work engagement" (Lortie, 1975, p. 101), and these valuations may include feelings of enjoyment, success and appreciation.

Efficacy

The term "efficacy" refers to "a belief that the teacher can help even the most difficult or unmotivated student" (McLaughlin & Marsh, 1978, p. 95). Efficacy refers to teachers' assessments of their ability to bring about student learning. The term was introduced into educational

research by Rand Corporation evaluation studies that reported a significant relationship between teacher efficacy and student achievement (Ashton, Webb, & Doda, 1983; Berman & McLaughlin, 1976, 1978). Efficacy was determined by the scores from two Likert-scale questions which were:

1. When it comes right down to it, a teacher really cannot do much because most of a student's motivation and performance depends on his or her home environment, and
2. If I really try hard, I can get through to even the most difficult or unmotivated student (Dembo & Gibson, 1985).

One aspect of teaching efficacy is teachers' certainty about their practice. This source of efficacy encompasses teachers' beliefs in their technical competence, their certainty about the strategies and practices that will yield high learning levels (Smylie, 1988). Rosenholtz's (1989b) research showed that student progress was an important indicator of teachers' sense of certainty. Teachers with a high sense of certainty felt good about their teaching style and strategies, thought that they were successful teachers, and felt that they could learn to be even better.

Stress

The term "stress" in this study refers to unpleasant feelings and reactions that teachers may have to job-related circumstances. These reactions may result in dysfunctional

physical and emotional symptoms. Litt and Turk (1985)

further define stress as

the experience by teachers of unpleasant negative emotions and distress that exist when the problems confronting teachers threaten their well-being and surpass their ability to resolve these problems. (p. 178)

Stress results when teachers feel "prolonged, increasing, or new pressures" to perform at a level for which they feel they have inadequate resources to cope successfully (Dunham, 1984). Furthermore,

stress arises from the discrepancy between the teacher's needs, values, and expectations on the one hand and occupational rewards and job demands and capacity of the worker to meet those requirements on the other. (Needle et al., 1980, p. 96)

Teamness

Teamness is defined as that glue that holds a team together, that element that transforms a collection of individuals into a cohesive unit that develops a team identity, a sense of belonging and community, and a spirit of collaboration, cohesion, and cooperation.

SUMMARY

Turning Points: Preparing American Youth for the 21st Century urgently focuses attention on the needs of the young adolescent of middle school age (Carnegie Council, 1989). The task force that compiled this report and other middle school literature recommends that middle schools meet the

needs of early adolescents by restructuring into interdisciplinary teams. In these teams "teachers share responsibility for the same students and can solve problems together, often before they reach the crisis stage" (p. 38), and "can nurture bonds between teacher and student that are the building blocks of the education of the young adolescent" (p. 38).

Although quite an extensive literature exists on collaboration and on participatory decision making in general, there is a less extensive research base on how an interdisciplinary team organizational structure affects middle school teachers' attitudes and program outcomes. Fewer than 50% of the nation's middle schools use an ITO structure. Dozens of Oregon middle level schools are attempting to implement interdisciplinary teams in their schools without the benefit of an adequate research base on the effects of this structure on teachers to guide them in the process. Case Studies of the Structure, Dynamics, and Outcomes of Interdisciplinary Team Organization in Oregon Middle Schools adds to this research base.

CHAPTER II

REVIEW OF THE LITERATURE

INTRODUCTION

Purpose

The purpose of this case study is to describe and explore the dynamic workings of interdisciplinary teams in two Oregon middle schools. The focus is on the teachers who are attempting to make an interdisciplinary team organizational structure work--what they know and do, the processes of their interrelationships, their perceptions of themselves working in new cooperative roles, and the curricular and student outcomes of this teaming process.

Chapter Contents

The background literature for this study falls into four sections. The first section focuses on research related to school structures that support collaboration. The second section of the literature review looks at research on participatory decision-making in business/industry and education. A third area of the review covers the research which links collaborative structures to the three teacher affective outcomes of satisfaction, efficacy, and stress. Finally, the fourth section reviews the

literature of the middle school and interdisciplinary team organization in the middle school.

STRUCTURES THAT SUPPORT COLLABORATION

Collaboration among teaching staffs has been a recurring and prominent theme in the literature of change, in the effective schools literature, in the open school/team teaching literature, and in the literature of workplace conditions that affect teacher attitudes and performance.

Change Agent Studies

The literature on school change has cited collaboration as a critical characteristic that affects change at the school-building level (Fullan, 1982; Little, 1982; Rosenholtz, 1989a, 1989b). Fullan (1982) stressed that implementation of innovations is a "process of resocialization, and interaction is the basis for social learning" (p. 72). In other words, the implementation of change requires the social energy generated by people working together.

Two large studies of the 1970s appear to bear this out, the Rand Study (Berman & McLaughlin, 1976, 1978) and the IDEA Study (Bentzen, 1974). The first one, the Change Agent Study conducted by the Rand Corporation for the U.S. Office of Education found that successful implementation was the result of mutual adaptation (Berman & McLaughlin, 1976,

1978; McLaughlin & Marsh, 1978). Mutual adaptation was defined as a process in which teachers modified the requirements of an innovative project to fit the day-to-day realities of their own classrooms. Mutual adaptation resulted when teachers collaborated, planned, solved problems, participated in project decisions, and locally developed materials at regular project meetings (Berman & McLaughlin, 1976, 1978). Mutual adaptation occurred during the process of implementation as teachers wrestled with new meanings, tried new ideas and strategies, and discussed them (Fullan, 1982).

The Rand Study found that a school's organizational climate affected a project's implementation and continuation, particularly the working relations among teachers (Berman & McLaughlin, 1976, 1978). Good working relationships and teacher participation in decision making were correlated: the development of one helped the development of the other (McLaughlin & Marsh, 1978). When teachers worked well together, they formed a "critical mass" that could overcome problems. When they shared individual solutions, they learned from each other. Good project relations developed in schools in which teachers participated in decisions about mutual adaptation. The fieldwork and survey analyses from the Rand Study suggested that teacher commitment was affected by project planning strategies. A collaborative planning strategy in which all

participants at all levels were treated as equal partners was necessary to generate and sustain the support needed to plan, implement, and continue the project (McLaughlin & Marsh, 1978).

The second study of the 1970s that supported collaboration as important in the change process was a five-year study (1967-1972) researched by the Institute for the Development of Educational Activities (IDEA) for the Kettering Foundation and directed by John Goodlad (Bentzen, 1974). This study analyzed the processes by which a staff copes with change, and at the center of that process was teacher-to-teacher interaction (Bentzen, 1974).

In this study, each school was involved in self-directed change and the project staff structured activities to promote teacher interactions and participation; a League of Cooperating Schools, consisting of 18 elementary schools in Southern California, was formed. League activities, interschool visitations, area meetings, special topical sessions, an all-league conference, and a project newsletter were implemented to foster teacher interaction. The model developed from this study consisted of four recursive states and developed new collaborative roles between principal and teachers:

1. Dialogue: All staff were involved in continuous substantive discussions, both formal and informal.

2. Decision making: Staff together considered alternatives and made selections of goals, visions, and strategies.

3. Action: Staff collaboratively implemented decisions.

4. Evaluation: Staff continuously assessed the effects of its efforts, which led to a renewing cycle back to dialogue.

The research data were compiled into a composite DDAE score for each school and the schools were ranked. Also data were collected to classify schools as "cooperative," "self-contained" or mixed. The results showed a strong relationship of teaching pattern to DDAE levels; that is, more than two thirds of the schools with high levels of DDAE were organized into cooperative arrangements, and four fifths of the low level DDAE schools were in self-contained classrooms.

Benefits of Collaboration to Students

Several studies from the effective schools research point to the importance of teacher collaboration as it affects student outcomes. The first one, a review of the research on effective schools, conducted by Purkey and Smith (1983), identified process and content variables in effective schools. They found that these variables worked together to create a culture for school improvement and

higher student achievement. The four process variables were: (a) collaborative planning and collegial relationships; (b) sense of community; (c) commonly shared, clear goals and high expectations; and (d) order and discipline. Purkey and Smith cited a number of case studies that supported collaboration and joint planning as important factors in high-achieving urban elementary schools. As part of their literature review, Purkey and Smith also cited two evaluation studies that further supported the role of collaboration: Armor who found that frequent informal consultation between teachers was an important variable associated with gains in reading; Trisman, Waller, and Wilder who looked at schools with effective reading programs and found that an interchange of ideas among staff was an important variable.

In conclusion, Purkey and Smith (1983) stated that a general strategy for getting change implemented was "best characterized as one that promotes collaborative planning, collegial work, and school atmosphere conducive to experimentation and evaluation" (p. 442).

In a second effective schools study, conducted from 1970 to 1974, Rutter, Maughan, Mortimore, Ouston, and Smith (1979) examined 12 inner-city secondary schools in London. They measured student outcomes in terms of students' in-school behavior, attendance, examination success, delinquency, and employment and found that the more

successful schools were characterized by collaborative planning and intellectual sharing among teachers.

Outcomes tended to be better when both the curriculum and approaches to discipline were agreed on and supported by the staff acting together. Thus attendance was better and delinquency less frequent in schools where courses were planned jointly. (p. 192)

This collaboration encouraged continuity in teaching and encouraged teachers to support each other.

More recently, in research broadly conceived as a study of effective schools, Rosenholtz (1989a) conducted a large-scale statistical analysis of the relation of teacher collaboration and student achievement. Quantitative data collected from 78 Tennessee elementary schools showed that teacher learning opportunities strongly predicted student achievement in fourth-grade math and reading ($p < .001$). Seventy-nine percent of the variance in teachers' learning opportunities were explained by four organizational arrangements: (a) goal-setting activities that stressed basic skills mastery, (b) clear and frequent evaluation by principals, (c) shared teaching goals that created pressure to conform to norms of school renewal, and (d) collaboration that enabled and compelled teachers to request and receive instructional advice.

Schools whose scores on these variables were high (one standard deviation above the norm) were termed "learning-enriched" schools. Ninety percent of teachers who were interviewed from learning-enriched schools cited

colleagues as their major source of renewal and the main source for new teaching ideas. On the other hand, only 32% of teachers from "learning-impooverished" schools (at least one standard deviation below the norm) reported other teachers as a main source of new teaching ideas.

Effects of Collaboration on Teachers

Several studies link collaborative school practices with increased benefits to teachers. A number of studies in elementary schools in the 1970s were conducted by the Stanford Center for Research and Development in Teaching on the effects of open-space, team-teaching structures on teachers. Teachers in open-space schools operated in formal work teams to make important decisions about children, scheduling, curriculum, and learning problems (Brunetti, Cohen, Meyer, & Molnar, 1972). These teachers had visual and acoustical contact with one another as they worked. Many observations about teacher-to-teacher interaction and influence have been drawn from these Stanford studies (Little, 1987). These observations can be organized into three categories: (a) interaction, influence, and satisfaction; (b) complexity; and (c) interdependence.

Interaction, Influence, and Satisfaction. Brunetti, Cohen, Meyer, and Molnar (1972) compared 110 teachers in nine open schools, all formally teamed, with 120 teachers in eight schools characterized by self-contained classes. The

open-school/teaming group (OS) showed more teacher interaction than in self-contained schools (SC); 61% reported high interaction compared to 21% for self-contained schools. Open school/teaming schools reported that teams or teacher groups had more influence over their teaching practices (44% OS to 18% SC) and felt that school teams had more influence over school policy (39% OS to 18% SD). Yet, teachers did not experience a loss of personal teacher autonomy in teaming situations. In fact the reverse was true. Eighty-six percent felt high personal autonomy in open space/teaming schools compared to 70% in self-contained schools. Twice as many teachers reported high levels of satisfaction in open-space/teaming schools; however, there was increased satisfaction only when increased interaction was associated with increased sense of teacher influence. Increased interaction did not automatically lead to higher satisfaction.

In another study of the Stanford research, Molnar (1972) observed and classified teachers on teams as to the degree of their participation. He found that those teachers that participated more within the team structure felt they had more influence on the school and over their own work. In addition, he found that teachers on balanced participation teams were more likely to feel they had influence and autonomy. In interviews teachers indicated some morale problems when teams could not coordinate their

activities without the emergence of domineering team members. Levels of perceived influence dropped on teams of unequal participation. One conclusion of this research on open school/teaming organization was that schools had adopted an extensive organizational change utilizing teaming without adequately preparing teachers to work in new cooperative roles. When the problems became overwhelming due to lack of problem-solving skills, the teams tended to die out (Brunetti et al., 1972; Cohen, 1976, 1981).

Complexity. Cohen (1976) reported on a longitudinal study of 16 San Francisco Bay Area schools involved in teaming from 1973 to 1975. One hypothesis of the investigation was that teaming, as a more complex staffing pattern, would be able to handle more complex technology, i.e. higher materials variation. Statistical analysis showed that the complexity of reading materials was a significant predictor of an increase of complex levels of teaming. However, evidence of the reverse direction of causality was not substantiated. One phase of the study seemed to confirm that newer methods of teaching that required complex technology, such as differentiation, moved teachers into collaborative arrangements and away from isolated classrooms (Cohen, Meyer, Scott, & Deal, 1979). In another phase of this research, the Stanford group investigated if the reverse causality were true. They asked the question: do teaming arrangements expand teachers'

ability to achieve greater complexity? Questionnaire data indicated that team structures do not cause more complex, rich instruction.

In a more recent study, two core academic departments in a junior high school worked closely over five years and expanded their instructional repertoire into more complex patterns (Bird & Little, 1985). They enriched the environments of their classrooms by pooling their ideas, materials and ability to collectively solve problems creatively.

Interdependence. Teaming means increased interdependence, but a number of findings from the Stanford Studies indicated a somewhat limited nature of these interdependencies (Cohen, 1981). In a longitudinal study of team teaching studied at Stanford by Bredo in 1977, 78% of the teams in the study reported three or fewer members per team. An earlier study had found larger teams. Cohen (1976) attributed this decline in team size to the time crunch required of meeting and coordinating programs and instruction with large groups. Cohen concluded in this study that teaming was more complex and required more coordination than anticipated. Teams were temporary; teams would die out and new combinations would replace them.

In a 1975 Stanford study of 469 teachers, 56.9% could be defined as team members by at least one of four criteria (coordination of discipline, team evaluation of students,

team planning of instruction, and joint teaching) (Cohen 1981). Only 28% reported they were involved in joint teaching, the activity demanding the highest levels of coordination and communication (Cohen, 1981). Bredo (1977), in a related study of interdependence, found that teachers more frequently cross-grouped or exchanged students with other teachers than they jointly taught the same group of students. Bredo interpreted this finding to mean that teams were more likely to choose cross-grouping over joint teaching because it was a more stable division of labor requiring less coordination time. The interdependencies on teaching teams were limited, volunteeristic, and loose in nature. Bredo concluded that several factors made collaboration unrewarding or difficult. These factors were: (a) lack of external rewards for task accomplishment, (b) the pressures exerted from the immediacy of teaching, (c) the likelihood of disagreement, and (d) the complexity of coordination problems (Bredo, 1977).

Norms of Collegiality

Collegiality has continued to be a strong theme in the 1980s (Erb & Doda, 1989). Little (1982), in a study of collegiality in school settings, found that in successful schools teachers valued and participated in the norms of collegiality by interacting with each other in four ways:

1. Teachers engaged in frequent, precise, and continuous talk about teaching practice.

2. Teachers were frequently observed and given useful critiques of their teaching.

3. Teachers planned, designed, researched, evaluated, and prepared teaching materials together.

4. Teachers taught each other the practice of teaching.

Little concluded that in schools where there was a strong norm of collegiality, teachers were more likely to engage in staff development and professional growth.

In another study, which compared the implementation success of two projects, Little (1986) found that in the more successful school, staff developers and teachers discovered together how to implement ideas in practice through close and intense collegial planning which included weekly inservice and planning sessions over three years.

Rosenholtz's (1989a) investigation of specific social organizational features in schools included both quantitative data (from a 164-item questionnaire) and qualitative data from 74 teacher interviews in 23 elementary schools. Central to Rosenholtz's model of effective schools was an assumption of the importance of shared goals for achieving basic skills. Four variables were responsible for 82% of the variance in shared school goals: (a) socialization of new teachers, (b) teacher evaluation, (c) faculty isolation and cohesiveness, and (d) collectively enforced behavior standards. In "high consensus" schools

from the sample (those one standard deviation above the norm on the scale of shared goals), 54% of respondents said that they usually talked with colleagues about curriculum and instruction, while 19% from "low consensus" schools (one standard deviation below the norm on the scale of shared goals) reported they talked about instruction.

This study also explored collaboration as a variable of effective schools with the assumption that

when collaborative norms undergird achievement oriented groups, they bring fresh ways of looking at things and a stock of collective knowledge that is more fruitful than any one person's working alone. (Rosenholtz, 1989a, p. 41)

Collaboration was operationally defined as requests for and offers of collegial advice and assistance. The data identified four workplace conditions that led to collaboration: (a) teachers' certainty of a technical culture (efficacy), (b) team teaching, (c) shared goals, and (d) participation in decision making. Schools that offered the greatest impetus for mutual helping were called "collaborative" schools, and those with the lowest scores were labeled "isolated" schools. Interviews with teachers from these groups showed that in collaborative schools, 47% of the teachers shared instructional materials and ideas with their colleagues and 50% shared instructional problem solving and planning. In isolated schools, however, 30% of teachers shared instructional materials and 0% shared instructional problem solving and planning.

Finally, in regard to the variable of teacher certainty, Rosenholtz's (1989a) data showed that:

the degree of teacher collaboration strongly and independently predicts teacher certainty. Teachers who share their ideas, who unabashedly offer and solicit advice and assistance, and who interact substantively with a greater number of colleagues, expand their pedagogical options and minimize their uncertainty. (p. 111)

Little (1990), however, warned against a superficial conviviality which may be a mask for true collegiality. She described four levels of collegial planning: (a) story telling and scanning for ideas, (b) aid and assistance, (c) mutual sharing, and (d) joint work. Only the fourth type of collaboration, joint work, had any impact on the culture of the school (Little, 1990). Joint work was dependent on the structural organization of task, time, and other resources; it was tied to the larger purpose of the school (Little, 1990).

According to Rosenholtz (1985a) norms of collegiality are carefully engineered by creating deliberate workplace structures to allow for frequent opportunities for professional interaction. Schools where shared work prevails had a policy of teaming tied to shared goals and working together became "the way we do things here" (Lipsitz, 1984).

Little (1986) further warned that images of teacher collegiality, cooperation, and interactive planning are "seductive;" the level of energy, skill, and endurance to

sustain such arrangements have been underestimated and work teams among teachers have proved unstable. Joint work and rigorous collaboration also resulted in psychological costs to teachers; i.e. the loss of individual latitude, a move from individual to collective autonomy, and the possibility of criticism and conflict with colleagues (Little, 1990).

Norms of Isolation

Although research evidence indicates that collegiality exists in effective schools, the norms for teachers lean strongly toward privatism and isolation (Goodlad, 1984; Lieberman & Miller, 1984; Lortie, 1975; Rosenholtz, 1985a), and "serious collaboration by which teachers engage in the rigorous mutual examination of teaching and learning, turns out to be rare" (Little, 1987, p. 513). The history and structure of the cellular school, the "sink or swim" socialization process by which new teachers are brought into the profession, uncertain goals in schools, and a poorly defined common technical culture help cement this isolated attitude (Lortie, 1975). The individual teacher guards his/her autonomy, and does not endorse denser and more intense relationships with adults (Lortie, 1975). Teachers function in "self-imposed and professionally-sanctioned isolation" (Lieberman & Miller, 1984, p. 11).

Research by Glidwell, Tucker, Todt, and Cox (1983) looked at the help-seeking behaviors of teachers from 10 Chicago elementary schools. The study found that asking for

help of colleagues in schools characterized by isolation was perceived to lead to a loss of status. Also teachers reported there was a "moral prohibition" against offering suggestions to other teachers.

Zahorik (1987) studied information exchanged among 52 elementary school teachers. He found that teachers were engaged in daily conversation with peers an average of 63 minutes a day, in sharp contrast to Lortie (1975) who reported that only 25% of teachers had much contact with peers. However, teachers in Zahorik's study exchanged information mostly about student-centered concerns such as activities, materials, and discipline and not about teaching and teaching methods, which were considered too personal, idiosyncratic, unimportant, intuitive, or unrelated to immediate pressing problems.

However, there is another view of isolation that should be considered. Flinders (1988) claimed that teacher isolation is a strategy for getting work done, and contrived collegiality can eat away at precious time with little to show for it. Charters and Pellegrin (1973) found that one reason differentiated staffing plans failed was that the costs of participation in terms of diversion from core teaching responsibilities began to outweigh the benefits. Teachers' major source of satisfaction was the psychic (and subjective) rewards gained from working with students in the classroom (Lortie, 1975; Rosenholtz, 1985b) and any activity

that detracted from this (like time-consuming team meetings) may reduce teachers' psychic rewards (Lortie, 1975). An interesting side light to this conclusion, however, is provided in the research of Kushman (1990). He found in his case study focusing on teacher commitment that teachers at Hillsdale, a high commitment school, derived professional rewards from the work itself and from colleague relations. Teachers were not wholly dependent on students for their sense of job satisfaction.

Frequent teacher collaboration meant daily contact with other teachers as well as students. Rewards were derived from meaningful adult contacts from working together with one's colleagues to solve daily problems. (Kushman, 1990, p. 29)

Summary

There is an extensive literature on school structures that support collaboration among teachers. This literature includes the change agent studies, the effective schools research, the research on team teaching and open schools, and more recent studies on collegiality. A recurring theme is that collaborative structures enhance a number of school outcomes, including implementation of innovations, student achievement, and teacher feelings of satisfaction and self-efficacy. The research cites important variables that are necessary to promote these outcomes. In summary, these variables are: (a) an intense level of joint planning on complex technologies, (b) a feeling of community, (c)

commonly shared and clear goals, (d) shared and equal participation, and (e) a high level of interdependence.

However, the literature also suggests that this sophisticated level of collaboration is ephemeral and difficult to maintain. Teachers have been powerfully socialized in the norms of isolation. They derive their primary satisfaction from the psychic rewards of working directly with students. Sophisticated levels of joint planning are time consuming and may not be perceived by teachers to add to their primary psychic rewards with students.

PARTICIPATORY DECISION MAKING IN BUSINESS AND EDUCATION

Self-Regulating Work Teams: Business

The previous section of the literature review focused on research that has related teacher collaboration to the implementation of change, to effective schools, to higher student achievement, and to positive teacher outcomes in the areas of influence, professional growth, and use of complex materials. Collaboration, in the form of self-regulating work teams, has also been receiving increased attention in the literature of business and industry as one of several approaches to participative decision making (Dumaine, 1990; Larson & LaFasto, 1989; Lawler, 1986; Parker, 1990; Senge, 1990; Wellins, Byham, & Wilson, 1991). Many companies are

experimenting with self-managing teams and new design plants that involve employees in many decisions and that are structured on the basis of work teams (Dumaine, 1990; Lawler, 1986).

A self-directed work team is defined as:

an intact group of employees who are responsible for a whole work process that delivers a product or service to an internal or external customer. To varying degrees, work teams collaborate to improve their operations, handle day-to-day problems and plan and control their work. They are responsible for getting the job done and managing themselves. (Wellins, Byham, & Wilson, 1991, p. 3)

The characteristics of these self-directed teams include:

- sharing various management and leadership functions;
- planning, controlling and improving their own work processes;
- setting their own goals and inspecting their own work;
- creating their own schedules and reviewing their performance;
- possibly preparing budgets and coordinating with other departments;
- usually ordering materials, keeping inventories and dealing with suppliers;
- acquiring necessary new training;
- possibly hiring their own replacements and disciplining their own members;

- taking responsibility for the quality of their products or services (Wellins, Byham, & Wilson, 1991).

For decades the management literature, particularly the writings of Argyris, Likert, and McGregor (cited in Lawler, 1986), have argued for more participation of workers in decision making and more interesting, satisfying jobs. Likert (1961), in his book New Patterns of Management, identified the characteristics of the ideal, effective group. He called this System 4, participative group management. Now, due to global economic competition, business and industry are investigating and experimenting with participative models, particularly work teams, as ways to increase productivity and quality, lower labor costs, and increase worker satisfaction and motivation (Dumaine, 1990; Lawler, 1986; Levin, 1991; Margulies & Black, 1987).

Wellins, Byham, and Wilson (1991, p. 14) summarized recent research that attributes production and quality gains to work teams. For example, by using work teams, AT&T's Richmond, Virginia operator service increased service quality by 12%. General Electric Company's Salisbury, North Carolina plant increased productivity by 250% compared with other GE plants producing the same products. Corning's specialty cellular ceramic plant decreased defect rates from 1,800 parts per million to 9 parts per million. General Mills' plants that use teams are as much as 40% more productive than plants without teams. In addition to these

productivity gains, members of effective teams tended to report high satisfaction levels and decreased absenteeism. Because team members were often cross-trained and they had increased information, they had the tools to suggest improvements and solve problems.

In summary, work team design creates a very satisfying and rewarding work environment that, in turn, leads to individual behavior that tends to increase productivity and reduce costs. (Lawler, 1986, p. 112)

There are also potential problems with work teams as reported in the literature. Salary and training costs may go up and middle management positions may be eliminated, causing resistance. Conflict between participants may occur as well as frustration in time-consuming meetings and slow decisions. Finally, work teams do not last in most traditionally managed organizations (Lawler, 1986).

Self-regulating work teams are an outgrowth of socio-technical systems theory. This theory stresses that a production system must rely both on a technology and a work structure that ties people to the technology. The work structure must get the task done and meet the social and psychological needs of employees: a structure that is both productive and humanly satisfying (Cummings, 1978).

Participatory Decision Making: Background

Collaborative structures in both business/industry and education share a common research and theory base in the

literature of participatory decision making (PDM). During the last 30 years, participative management has been viewed as a means to improve employee satisfaction and productivity. Lawler (1986) and Nurick (1982) summarize the major advantages research has found to support participatory decision making: (a) improved decision quality, (b) greater acceptance of decisions and trust in management, (c) better understanding of decisions and change and greater feelings of personal control, (d) development of decision-making skills, (e) enriched and more interesting jobs, (f) facilitation of conflict management and team building, and (g) higher satisfaction and motivation. There are a number of participative programs in business and industry that rely on participation in various forms. Lawler, for instance, described quality circles, quality-of-work-life programs, employee survey feedback, enriched jobs, gainsharing, work teams and new design plants as participative structures.

Margulies and Black (1987) in their review of the participative literature, identified important conditions necessary to successfully implement participative decision making. One important factor which they identified for success was that participants needed to have the necessary skills and knowledge for collaboration. If employees had both the content knowledge and problem-solving process knowledge, their participative efforts resulted in higher satisfaction and performance. Secondly, they pointed out

that research showed that not all employees had the same need to participate in problem solving. Those with strong needs for independence responded more positively to participation. Participation was more effective if members wanted to participate. Third, Margulies and Black found that motivation and satisfaction were higher if workers believed that participation would help bring about a change and if they valued the expected outcome. Lastly, participative approaches were more successful if there was necessary time for training, meeting, and coordinating activities.

Research: Participation,
Satisfaction, and Productivity

The research in participatory decision making (PDM) usually focuses on productivity and satisfaction as the dependent variables (Brown & Reich, 1989; Cotton et al., 1988; Lincoln, 1989; Margulies & Black, 1987; Miller & Monge, 1986). The empirical evidence of participatory decision making (PDM) in corporate organizations showed that participation usually had a positive (though often small) effect on productivity (Levin, 1991; Levine & Tyson, 1990).

Miller and Monge (1986), in their meta-analysis of the effect of participation on productivity and satisfaction, found that participation had an effect on both satisfaction and productivity, and the effect on satisfaction was somewhat stronger than its effect on productivity. In a

controlled laboratory experiment, Vanderslice, Rice, and Julian (1987) found that higher participation resulted in the perception of greater individual and co-worker influence, causing increased satisfaction. In this study, participation did not increase productivity.

Levine and Tyson (1990) reviewed the empirical literature and found that participation usually had a positive, often small effect on productivity. The size and significance of the effect was contingent on the type of participation and on other aspects of the firm's climate and environment.

Participation is more likely to have a positive long-term effect on productivity when it involves decisions related to shop floor daily life, when it involves substantive decision making rights rather than purely consultative arrangements . . . (pp. 183-184)

Levine and Tyson (1990) also pointed out that team production techniques and quality circles were two types of participation most likely to benefit efficiency for two reasons: first, they promoted better communication of information; and second, they enhanced a cooperative strategy which encouraged all team members to work at a "socially optimal level" (p. 186). A related connection between participation and performance was that

that the increased commitment, trust, and good will resulting from participatory arrangements may increase worker morale and job satisfaction which may result in greater worker effort and productivity. (Levine & Tyson, 1990, p. 188)

Types of Participative Structures

Cotton et al. (1988) reviewed the empirical studies on PDM and found that effects of participation on satisfaction and productivity varied according to the type of participation. Their review disaggregated the data to show how different forms of PDM had different outcomes on satisfaction and productivity

Their classification scheme considered five factors of decision making that affected satisfaction and productivity: (a) formal/informal, (b) direct/indirect, (c) access/amount of influence, (d) content of the decisions, and (e) duration of participation. The studies were divided into six classifications of participation: (a) participation in work decisions, (b) consultative participation, (c) short-term participation, (d) informal participation, (e) employee ownership, and (f) representative participation. The category in this review closest to interdisciplinary team organization in middle schools was participation in work decisions (formal, direct, long-term with a great deal of influence, decisions focused on the work itself). The meta-analysis found a 67% positive effect on performance and a 50% (mixed) effect on satisfaction.

GM-Toyota, NUMMI. One case study of participation in decision making, which is particularly interesting because of its similarities to interdisciplinary team organization in middle schools, is the joint GM-Toyota (NUMMI,) plant in

Fremont, California (Brown & Reich, 1989). This plant has been manufacturing the Chevrolet Nova, identical to the Toyota Corolla. The GM plant in Fremont had been closed in 1982 because of low quality, low productivity and high absenteeism. The team concept was central to reopening the plant in 1984 as a joint venture. Production workers were organized into teams of five to eight workers who planned and rotated jobs, and made limited shop floor decisions. Teams could stop the line to solve production problems so as not to pass on product defects. The team arrangement resulted in higher motivation, lower absenteeism, less down time, less conflict, and higher employee involvement in the production process (Brown & Reich, 1989). By 1986 productivity had risen 50%.

Participatory Decision Making: Education

A renewed emphasis on participatory decision making in schools has come with restructuring efforts. In 1986 a Carnegie Foundation report, A Nation Prepared: Teachers for the 21st Century (Carnegie Commission on Teaching as a Profession [Carnegie Commission], 1986), and a report from the nation's governors, Time for Results: The Governor's Report on Education (National Governor's Association, 1986), both called for involving teachers more in school decision making. The Oregon Educational Act for the 21st Century (1991) mandates site-based decision making with active

teacher participation. Traditional forms of decision-making structures include departmental structures, grade-level meetings, school committees, and faculty senates. Now, new and expanded models of participatory decision making include site-based decision making models, the interdisciplinary team concept of the middle school movement, career ladders, and peer assistance (Conley, 1991).

The research base on participatory decision making in schools suggests that participation affects such individual outcomes as teacher job satisfaction, stress, loyalty, role ambiguity, and collaboration (Conley, 1991). One area of research focuses on teachers' expectations about their participation in decision making. Survey research has asked teachers to assess their need for participation based on how much influence they currently have compared with how much influence they desire. In a 20-year review of research, Conley found that teachers were in a state of "decision deprivation." That is, teachers reported a discrepancy between their current and preferred levels of participation. A discrepancy between these two levels has resulted in "decision deprivation." This deprivation was related to important outcomes such as satisfaction, stress and loyalty. When teachers reported that their expectations for participation exceeded their opportunities, they reported high dissatisfaction, stress, and less loyalty to principals (Conley, 1991).

A second dimension of teacher decision making concerns the types of decisions teachers make. Bridges (1967) distinguished decisions that fell within or without a teacher's "zone of indifference." Decisions outside the zone of indifference would relate to instructional issues, and those within the zone of indifference would be management issues such as attendance procedures. However, teachers reported feeling more decisional deprivation (a discrepancy between desired and actual participation) in decisions involving the organizational areas of budget development, student rights, and grading procedures than in the areas of classroom instruction and selection of materials. Traditionally teachers have been involved in classroom operational decisions (technical domain) and not in strategic school-wide policy decisions (managerial domain). The dividing line separating the two domains may be a myth according to Conley (1991) and is being reexamined as schools explore new organizational structures such as site-based decision making. Site-based decision making focuses on issues of vertical participation of teachers in the traditional bureaucratic structure. However, team structures, such as interdisciplinary team organization in middle schools, focuses more on horizontal, collegial decision making.

Bridges (1967) reported on several studies in schools that suggested that participation by teachers in decision

making produced positive results. Teachers who participated regularly and actively in making policy decisions were more likely to be enthusiastic and have higher satisfaction levels. Bridges also reported on his earlier study that showed that teachers preferred principals who involved their staffs in decision making regardless of whether they themselves had a high or low need for independence.

Duke, Showers, and Imber (1980) conducted a study on shared decision making in five secondary schools in the San Francisco Bay Area. In the study, the researchers defined school decisions as those extending beyond a teacher's classroom concerns. School decisions involved the areas of instructional coordination, staff development, school improvement, personnel, rules and discipline, and general administration and policy making. The beginning assumption of the researchers was that teachers were anxious to increase their involvement in school decision making; however, initial investigation revealed that many teachers were apathetic or negative about participative decision making. In additional interview research, the teachers rated the potential costs of participation low (except for time) and the potential benefits (including feelings of self-efficacy and ownership in a collective enterprise) as high. Yet, of those who did participate in school decision making during the year, the majority felt they had benefited little from participation. They believed their

participation actually made little difference. They felt that the probability of their actually realizing the potential benefits of PDM was very low (Duke, Showers, & Imber, 1980).

In other studies on PDM cited by Rosenholtz (1985a) teacher/administrative joint participation was a characteristic of successful schools. However, these decisions were focused on technical decisions such as selecting classroom materials and determining teaching methods. In the case of these shared technical decisions, "high levels of contribution were made willingly if teachers were certain the expenditure would result in demonstrable classroom benefits" (Rosenholtz, 1985a, p. 373).

Summary

The research on participatory decision making in business/industry and in education suggests positive outcomes for teachers; however, the research is as yet incomplete about the type of decisions and the amount of influence accorded to teachers in new decision-making structures such as interdisciplinary team organization. Levin (1991) observed that:

On the basis of empirical studies of worker participation, there is reason to believe the intrinsic satisfactions of school staff will rise in relation to the degree to which they have the power and supportive conditions to make important decisions about their own activities. (p. 30)

COLLABORATION AND TEACHER AFFECTIVE OUTCOMES

The third section of the literature review focuses on the relationship of collaboration to three teacher affective outcomes: (a) satisfaction, (b) self-efficacy, and (c) stress.

Satisfaction

Vroom (1964), in an extensive review of the literature on the determinants of job satisfaction, found that the factors contributing to job satisfaction were: high pay, substantial promotional opportunities, considerate and participative supervision, an opportunity to interact with one's peers, varied duties, and a high degree of control over work methods and work pace.

Although teaching as a profession has developed in a tradition of isolation and autonomy, collaboration has been found to relate to teachers' sense of satisfaction. Goodlad (1984) noted in his Study of Schooling that teachers in the most satisfying schools perceived their schools to be more gratifying workplaces. The characteristics which he found to be related to satisfaction were: participation in problem-solving processes, teachers' influence over their teaching decisions, staff cohesiveness, teachers' influence over school-wide decisions, and the principal's leadership. He also noted that the "composite satisfaction of principals, teachers, students, and parents constitutes a

significant indication of a school's quality, including achievement" (p. 278). His data further indicated that a collaborative climate enhanced teachers' satisfaction.

Our data, in fact, show that the degree of staff cohesiveness and the nature of the problem solving and decision making climates at schools were factors highly related to teachers' satisfaction. (p. 179)

Junior high school (middle level) teachers had the lowest scores on satisfaction in regard to teaching, career fulfillment, and likelihood to choose teaching again as a career (Goodlad, 1984).

However, several studies have found that teachers usually work autonomously and in isolation. Goodlad (1984) found that teachers in his study rarely joined with peers.

There was little in our data to suggest active, ongoing exchanges of ideas and practices across schools, between groups of teachers, or between individuals even in the same school. (p. 187)

Lortie's (1975) study presented data indicating that teachers consider psychic rewards to be their main source of satisfaction. These psychic (intrinsic) rewards resulted when positive things happened in the classroom with students. The teachers' core rewards and satisfaction came from the actual instruction of students. Furthermore,

relationships with other adults do not stand at the heart of the teachers' psychological world; being shaped by deeper commitments to students, they are secondary and derivative in nature. (p. 187)

Yet, Lortie reminded us, teachers considered colleagues, if not central to their psychic rewards, at least sources of help and mirrors for assessing one's own teaching practices.

Rosenholtz (1985a) reviewed the effective school literature and explored a theory that many of the achievements of more effective schools could be attributed to patterns of staff collaboration and joint problem solving. In effective schools, dissatisfaction was lower as measured by fewer teachers opting to leave, and success with students was higher as measured by achievement tests. Rosenholtz hypothesized that higher student success would increase teachers' psychic rewards, from which they gained their primary satisfaction. She pointed out that effective urban schools were characterized by collaborative planning and collegial work. Therefore, greater task-related interaction about student achievement among teachers increased staff cohesiveness. In addition, greater participatory decision making cited in the effective school literature increased a feeling of ownership in school programs and became central in staff discussions on curriculum and student achievement (Rosenholtz, 1985a).

Ashton, Webb, and Doda (1983) in a study comparing teachers in middle schools to those in junior high schools, investigated the relationships among teachers' sense of efficacy, school organization, and several other variables including job satisfaction. Teachers in middle schools were

organized in interdisciplinary teams serving multi-age students. This structure allowed them more opportunity for collaborative problem solving about curriculum and students. These middle school teachers participated in school decision making more than teachers in junior high schools, which were organized in a traditional departmentalized fashion. The middle school teachers reported being more satisfied with teaching than junior high teachers ($\chi^2 = 3.85$, $p < .05$). Ayalon (1988) however, found no significant difference between the levels of satisfaction of middle school teachers (teamed) and junior high school teachers (departmentalized).

Summary. Studies on workplace satisfaction, including those on participatory decision making, highlight the importance of collaboration as an important factor in satisfaction and workplace commitment. However, most school structures and school cultures do not foster a high degree of staff collaboration. One possible exception is interdisciplinary team organization that has been advocated by the middle school movement.

Self-Efficacy

Teachers' self-efficacy, or their beliefs about their own effectiveness, has been related to student and teacher outcomes.

Student Outcomes. Ashton, Webb, and Doda (1983) found a significant relationship between teachers' sense of efficacy and student achievement in reading and math on the

Metropolitan Achievement Test in high school basic skills. Tracz and Gibson (1986) also found a significant correlation between teacher self-efficacy and elementary students' achievement in math and reading on the California Test of Basic Skills.

Teacher Outcomes. Self-efficacy has also been related to teacher outcomes, specifically their ability to implement change. The Rand Study (Berman & McLaughlin, 1976, 1978; McLaughlin & Marsh, 1978) found three teacher characteristics that had strong and significant effects on project outcomes. The most powerful attribute found in the Rand Study was teacher sense of efficacy. This belief that a teacher can help even the most difficult student was positively related to the percentage of project goals achieved, amount of teacher change, total improved student performance, and the continuation of projects (Berman & McLaughlin, 1976; Fullan, 1982; McLaughlin & Marsh, 1978). In a study of staff development, Sparks (1988) found that perceptions of teacher self-efficacy were related to their implementation of new teaching strategies. Teachers who made the most significant teaching changes indicated a heightened sense of control or a feeling of self-efficacy over their teaching environment.

Kushman (1990) reported a positive significant relationship between personal efficacy (a belief in one's

own power to be an effective teacher) and organizational commitment.

An important finding throughout the study was that teacher organizational commitment is largely a function of how much teachers feel a sense of control over the teaching process and therefore a sense of efficacy as teachers. (p. 36)

Efficacy and Collaboration. Teacher collaboration has been an important variable in the literature of teacher self-efficacy. In the Rand Study, high efficacy teachers tended to be a part of projects that emphasized participative decision making and collaborative staff support activities (Berman & McLaughlin, 1976, 1978). These activities gave teachers opportunities for discussion and problem solving with each other as well as peer support for implementing new ideas (McLaughlin & Marsh, 1978). Sparks (1988) suggested that one way to increase teachers' self-efficacy and feelings of control over what their students learned was to provide "intimate, structured, small-group sharing and problem solving sessions for teachers" (p. 117).

Rosenholtz's (1989a, 1989b) study of the social organization of schools examined within-school variations of organizational effectiveness. One measure she used was efficacy, which she called "certainty of instructional practice." Rosenholtz found that teachers' certainty about a technical culture and instructional practice (efficacy) was one of the most powerful predictors of collaboration.

She found that efficacy was low in schools where goals were ambiguous and there was no common sense of purpose. This situation tended to reinforce isolation and norms of self-reliance because "help seeking is potentially embarrassing or stigmatizing and may prove threatening to people's sense of self worth" (Rosenholtz, 1989a, p. 43). On the other hand, teachers' collaboration around clear goals increased their feelings of confidence and efficacy.

Efficacy and Collaborative School Structures. A study by Smylie (1988) linked teachers' feelings of efficacy to a collaborative school organization. This study examined the relationship of school variables to the extent of teacher change in a staff development project. Smylie found a direct significant relationship between certainty of practice (teachers' beliefs in their own technical competence) and interaction with colleagues about instruction. Teachers relied on their colleagues to help develop a sense of technical competence. Smylie suggested that the effects of collegial interactions on teachers' certainty of practice should be examined more specifically in future research. It would seem that the interdisciplinary team organization in middle schools would be a fruitful area in which to further explore the relationship of teacher personal efficacy/certainty of practice and colleague interactions.

Middle schools provide another example of a school structure that affects teacher efficacy. Ashton, Webb, and Doda (1983) compared teacher attitudes in middle schools and junior high schools. The schools were matched by SES, race, and size. The middle schools were characterized by interdisciplinary teams, participative decision making, multi-age grouping, and adviser-advisee programs. The junior high schools used a traditional departmental structure, single age grouping, and traditional homerooms for attendance. The middle school teachers reported a greater sense of efficacy. The data showed a trend approaching statistical significance, which the researchers suggested could be significant with a larger sample. Although interdisciplinary team organization was not disaggregated as a variable in this study, the researchers suggested that collaborative structures such as interdisciplinary teaming, collaborative planning, and participative decision making could help buttress teachers' sense of self-efficacy.

Several studies indicate that school organizational structures may be related to teachers' sense of self-efficacy. Fuller, Wood, Rapoport, and Dornbusch (1982) distinguished between two types of efficacy: performance efficacy (personal teaching) and organizational efficacy. For instance, teachers may have high personal efficacy and feel very effective and successful in their classrooms but

may have low feelings of organizational efficacy and believe that working with other teachers to improve curriculum and instruction is a waste of time. These teachers would possibly resist participating in cooperative school structures such as interdisciplinary team organization.

Summary. Research indicates that a teachers' sense of self-efficacy has important effects on student learning and on teachers' ability to change and implement new teaching strategies. The opportunity to collaborate with one's peers appears to play a significant role in increasing teachers' confidence in their technical competence and ability to affect student learning. However, teachers with a low sense of self-efficacy may avoid collaboration for fear of jeopardizing their feelings of self worth.

Stress

Teacher stress and burnout have received much attention in educational literature in recent years. Several threads tie stress to teacher collaboration.

Effects of Stress. Dysfunctional work-related stress or burnout occurs when teachers feel unsuccessful or unable to meet the demands of the teaching role. A discrepancy between the desired or expected outcomes of the job and actual outcomes caused frustration, anger, exhaustion, or depression (Blase, 1986; Leach, 1984). The end result was that chronic work stress in teachers interfered with the quality of instruction and the quality of interactions

teachers had with students (Blase, 1986). Stress may lower job satisfaction and reduce capacity to cope with the environment, cause negative attitudes toward students and reduce effectiveness of instruction (Johnston & Markle, 1986). The literature suggests that teachers who are worn out or burned out expect less work from their students and distance themselves from them (Farber, 1984). Blase postulated a "performance adaptation syndrome" to describe the maladaptive behaviors of teachers responding to high stress. These behaviors may include poor instructional strategies (rote learning, using old materials over and over, giving busy work to buy time to grade papers) and restricting work time strictly to work hours, thus limiting their access to other professionals and professional growth.

Organizational Contributors to Stress. The early studies of stress focused on the emotional problems of teachers, whereas later studies have focused on the sources of stress, effects of stress, and management of stress in the schools. Although stress caused by student-related problems is often mentioned in the stress literature, equally as prominent as sources of stress are organizational factors that originate in the environment of the work place, such as excessive time demands, difficult colleague relations, and limited roles in decision making (Bacharach, Bauer, & Conley, 1986; Farber & Miller, 1981; McNeely, 1983; Schwartz & Olson, 1987). Milstein, Golaszewski, and

Duquette (1984) developed five categories to describe stress occurring in the work environment: (a) relationships at work (extent of adult interactions on the job); (b) organizational structure and climate (participative decision making, communication); (c) job factors (amount and pace of work, working conditions); (d) role in the organization (role ambiguity and role overload); and (e) career development (status, advancement, security).

Causes of Stress: Time and Role Overload. One important thread linking stress to collaboration is the category of time/role overload. A scarcity of time needed to successfully carry out the many demands of teaching causes stress. Collaborative school structures require more teacher time for planning and coordination than does teaching in isolated settings. The literature reports conflicting data. On the one hand, collaboration and collegial work may increase stress through increased time demands and strained relations with non-cooperating colleagues (Bentzen, 1974; Blase, 1986; Hoover-Dempsey, & Kendall, 1982; Schwartz, Olson, Bennett, & Ginsberg, 1983). On the other hand, some researchers suggest that collaboration and collegial work serve as an antidote to stress by supplying peer support, creative co-planning, and shared problem-solving (Hoover-Dempsey & Kendall, 1982; House, 1981; Leach, 1984; Matteson, 1987; Numerof, 1987;

Pines, Aronson, & Kafry, 1981; Rathbone & Benedict, 1980; Schwartz et al., 1983).

The varied and excessive demands often placed on teachers' time causes stress by detracting from their primary teaching responsibilities. Blase (1986) collected qualitative data in an open-ended questionnaire from 392 teachers on sources of work stress. The results of this study showed that the theme causing the most stress was "interfering with teacher control over time." The next three most stressful themes in Blase's study were: "activities interfering with instruction," "quantitative overload" (too many demands), and "qualitative overload" (too difficult demands). Further analysis of the data revealed 10 major stressors (stress categories). The most frequent stressor was "organizationally based stressors." This category included the subcategories of time, paperwork, lack of materials, extra duties, physical plant, meetings, class size, poor scheduling, interruptions, travel, conflicting demands and athletics. Lack of time and role overload are listed as among the most frequent causes of teacher stress in a number of other teacher stress survey studies (Albertson & Kagan, 1987; Byrne & Hall, 1989; Dedrick, Hawkes, & Smith, 1981; Dunham, 1984; Friesen & Richards, 1984; Needle et al., 1980). Litt and Turk (1985) found that role overload was the third most important reason for leaving teaching.

Causes of Stress: Colleague Relations. Teachers' relationships with their colleagues also appeared as a stress-causing factor in the literature (Needle et al., 1980; Schwartz & Olson, 1987). Blase (1986) found that teacher-related factors were the fourth-highest source of stress. This category included the subcategories of conflict or lack of cooperation, incompetence or irresponsibility, negative attitude, and lack of communication. Teachers who imposed their philosophy on others may have created stress for colleagues (Hoover-Dempsey & Kendall, 1982). Schwartz et al. (1983) found that three of the six schools in their case study identified stressors due to staff relations; that is, feelings of hostility, uncooperation, competition or limited professional and social interaction. "Colleagues seemed unwilling or unable to pool resources and collectively resolve common problems" (Schwartz et al., 1983, p. 17). In these schools, there were no reported school groups, teams, or committees to pull staff together. Bentzen (1974), in earlier studies of team teaching, reported that collaboration led to stress.

Causes of Stress: Lack of Participation in Decision Making. Teachers who had little input or influence in school decision-making reported higher stress levels (Litt & Turk, 1985; Schwartz & Olson, 1987; Schwartz et al., 1983). Needle et al. (1980) reported that a major stressor was

having little decision-making opportunity in the organization. Phillips and Lee (1980) reported that teachers had little access to decision making channels by which they could influence policies that could help control the stress caused by unmanageable workloads. Recent studies in the health professions suggested that increasing participation can reduce stress and burnout in several ways: (a) by giving individuals an opportunity to influence how others define their roles, thus reducing role conflict; (b) by providing information about formal and informal policies, thus reducing role ambiguity; and (c) by facilitating a supportive social network (Matteson, 1987).

Collaboration as an Antidote to Stress. Collaboration and collegial interactions are frequently mentioned as strategies to alleviate stress in the workplace. Farber and Miller (1981) hypothesized that a lack of a sense of community in schools caused teacher burnout, producing feelings of isolation and inconsequence. They used the empirical work of Bridges and Hallinan (1978) to support this hypothesis. Bridges and Hallinan found a significant correlation between subunit size, interdependence and absenteeism. Absenteeism (a consequence of stress) was lowest in schools where there was a great deal of contact among small numbers of people. Farber (1984), in another study of teacher stress, found that 60.8% of respondents (693, K-12 public school teachers in New York) rarely or

never felt a sense of community among faculty and administration:

When social support of any kind is not forthcoming--and according to teachers it has not been--the sense of isolation increases, resentment develops and the stresses of teaching, now left relatively unbuffered, more frequently lead to burnout. (p. 332)

The feeling of a psychological community of professionals working together toward a common goal is an important antistress factor (Schwartz & Olson, 1987). Farber and Miller (1981) suggested that schools should build organizational structures that encourage consistent collaboration, such as on-going case conferences and team teaching. Schwartz et al. (1983) also recommended that teaching staff should be given regularly scheduled time for collegial interactions which enhance professional skills, promote the sharing of ideas, and minimize isolation and stress.

Increasing personal support systems for colleagues to break through loneliness and isolation is often cited as a coping strategy for stress (Hoover-Dempsey & Kendall, 1982; Kyriacou, 1980; Needle et al., 1980; Phillips & Lee, 1980). Although self-management strategies have been effective to some extent to alleviate stress, schools as organizations can establish practices to control dysfunctional stress. A healthy school (as opposed to a stressful one) is characterized by people who can influence significant aspects of their work situations, feel engaged in meaningful

activities, have a strong sense of belonging to one or more groups, and are satisfying their needs for self-esteem (Leach, 1984). A social support system in the workplace can be seen as a buffer to reduce the effects of a stressful environment. The support provides social ties to other individuals and groups in the work organization. The functions of such a support system would be listening, providing technical support and technical challenge, providing emotional support and emotional challenge and providing social reality (House, 1981; Pines, Aronson, & Kafry, 1981).

Teams and Stress. Numerof (1987) described teams or work groups as a buffer to organizational stress. However, these teams must function as responsive, goal-directed, flexible bodies rather than ones characterized by lack of cohesion, role ambiguity, and lack of identification. Building effective teams into the culture of an organization is not necessarily easy and requires commitment from management, and articulated goals and plans. Team building is a process of building trust, participation in decision making, communication, and a commitment to collaboration. Numerof suggested that teams have the capacity of reducing stress in organizations in the long run, but the process of team building creates stress in the short run. This is because effective teams require openness that people may

find threatening, and conflict is dealt with openly and may cause temporary stress.

Summary

The literature draws relationships between teacher feelings of satisfaction, self-efficacy, and collaboration. Collaborative structures appear to provide teachers with professional and emotional support and feelings of competence of their technical culture. The relationship between collaboration and stress appears to be more complex. Teacher self-report surveys indicate that collaborative structures can help alleviate stress as well as increase it, depending on a variety of factors. Research suggests that effective collaborative structures need to provide teachers with adequate time, a strong focus on shared goals, and a feeling of trust nurtured through conscious efforts of team building to avoid adding to stress.

THE MIDDLE SCHOOL AND INTERDISCIPLINARY TEAM ORGANIZATION

The fourth section of the literature review focuses on the middle school. First, the evolution of the middle school is reviewed to provide background for interdisciplinary team organization as it has emerged in current middle school philosophy and practice. Second, the literature on the research of interdisciplinary team organization in middle schools is presented.

Middle Level Schools

The Junior High School. The middle school is the latest in a series of school organizational reforms that began with the creation of the junior high school in the late 1800s and the early 1900s. By 1910 junior high schools had been established in Berkeley, California and Columbus, Ohio and the number had grown to 7,750 junior high schools, grades seven through nine, by 1970 (Cuban, 1992).

The new junior high school had a variety of aims when first introduced. First, restructuring the last two years of elementary school was seen as a way to reduce dropouts and meet the needs for training semi-skilled workers through increased vocational training. The social pressures of urbanization and immigration had resulted in large numbers of 12- and 13-year-old dropouts. Second, the new junior high school was intended to provide more developmentally appropriate instruction for early adolescents. Writers in the field of psychology had been stressing the need for schools to be sensitive to the developmental needs of early adolescents. Third, the academic community was exerting pressure for restructuring in the form of more rigorous academic content for the junior high school. Several national educational commissions advocated a change from the traditional 8-4 structure. The Committee of Ten on Secondary School Studies chaired by Harvard's president, Charles W. Elliot, recommended in 1893 that secondary

education begin two years earlier, and be organized into six years of secondary and six years of elementary education (George et al., 1992). In 1913 The Committee on Economy of Time in Education mentioned a separate junior division of secondary education and many junior high schools introduced traditional high school subjects like algebra, Latin, and science into the seventh- and eighth-grade curriculum (Cuban, 1992; George et al., 1992).

By 1920 the purposes for the junior high school were diverse and lacked coherence. A summary of the reasons for the junior high school given at that time were: retaining students in the educational system; recognizing of individual differences; promoting higher scholarship; recognizing developmental needs; exploring student interests; providing guidance and vocational education; and providing for better teaching (Cuban, 1992).

Yet, due to this ambiguity of purpose, fundamental reform failed to materialize and the junior high school became more and more like a little high school. Teachers were organized into academic departments rather than into interdisciplinary core curriculum groups; elective programs were limited largely to shop and home economics; grouping patterns were based on perceived ability; and instruction was based on a high school plan of 50-minute periods, a lecture format and textbooks (Cuban, 1992; George et al., 1992).

Evidence collected on 12 junior high schools by Kenneth Tye for Goodlad's (1984) A Place Called School reinforced these criticisms. He found little integration, tracking that caused widely differing curriculum for different groups, little classroom guidance and a heavy emphasis on teacher-centered lessons, rote memory and seatwork. This conflict between the ideal and real spurred a return to earlier discussions to reform early adolescent schooling, and in the early 1960s the middle school movement took form.

The Middle School Movement. Besides the belief that many of the hopes for the junior high school had been unfulfilled, two other factors also contributed to the emergence of the middle school movement: (a) earlier maturation of boys and girls, and (b) local problems of buildings, enrollment, and desegregation (Alexander, 1984). Between 1960 and 1985, a clear consensus emerged about the characteristics of effective middle level schools as iterated in the National Middle School Association's (NMSA) Resolutions adopted in 1989. These resolutions reconfirmed the unique developmental needs of early adolescents and the necessity for a program designed to meet those needs. The resolutions called for interdisciplinary team organization, the continuance of exploratory classes in the curriculum as well as a core curriculum, guidance provided by teachers, a discontinuation of ability tracking, strong articulation between the elementary and secondary levels, and

developmentally appropriate instructional practices (Cuban, 1992; George et al., 1992).

This vision continues to be stressed in recent national and state reports on middle level education. The Carnegie Council on Adolescent Development (1989), in Turning Points: Preparing American Youth for the 21st Century, rejected the traditional secondary approach to middle level education and recommended practices in line with the middle school philosophy. The Carnegie Report urged schools to provide early adolescents with: (a) small communities for learning, (b) a core academic program for all learners, (c) success for all students, (d) empowerment for teachers and administrators in decision making, (e) teachers who are expert in teaching early adolescents, (f) improved health and fitness, (g) re-engaging families, and (h) schools connected to the community. The Middle Level Task Force Report for the Oregon Educational Act for the 21st Century relies heavily on these precepts as a model for 21st century middle schools in Oregon (ODE, 1993).

Yet, after 30 years, survey research indicates that this middle school vision is far from being universally implemented. One reason for this may be that early middle schools were organized for expedience rather than for philosophical reasons (Alexander, 1984; Calhoun, 1983). Although the current rationale for middle schools focuses on meeting the special needs of the young adolescent, middle

school organization was initially influenced by four other factors which were: (a) a call to strengthen secondary school instruction, (b) a need to eliminate segregation especially in city schools, (c) a need to alleviate building problems in student enrollment, and (d) the presence of the bandwagon effect (Wiles & Bondi, 1981).

A study done by Alexander in 1968 (cited in Alexander & McEwin, 1989), and repeated by Alexander and McEwin (1989), showed this trend toward organizational expedience has been diminishing. For instance, "to eliminate crowded conditions" was the most frequent reason checked in 1968 for establishing middle schools, but it was in third place by 1988. Those which cited that their reason for establishing middle schools was to provide a unique program for a special age group increased from 45% in 1968 to 65% in 1988 (Alexander & McEwin, 1989). A noticeable observation, however, is the continued variety of reasons for establishing middle schools and the ambiguity of purpose that has plagued middle level educational reform.

The number of middle schools, however, has continued to grow from less than 11 before 1960 to 5,466 (grades five to eight and grades six to eight) in 1988 (Alexander & McEwin, 1989). A series of three surveys of Oregon middle schools (1985, 1989, 1992) conducted by COSA (Confederation of Oregon School Administrators) (1992) showed an increasing prevalence of middle schools in Oregon with grades six

through eight or seven through eight, the predominant middle level grade patterns. In 1985, 53% of Oregon middle level schools responding to the survey had reorganized into middle schools, as compared to 74% in the 1992 survey. According to trends reported in this Oregon survey, the use of interdisciplinary teams and integrated units have increased; however, guide or homeroom programs have lost ground.

Although the number of middle schools continues to grow nation-wide as well as in Oregon, a number of research studies indicate "that the majority of schools in the middle remain, programmatically, far from achieving the goals of the Carnegie recommendations" (George et al., 1992, p. 14). A NASSP survey of 570 middle level leaders in 1992 said that many instructional practices associated with the middle school philosophy have not replaced old junior high practices (Richardson, 1993). For instance, 82% of the principals and team leaders said that ability grouping was still in place. Fifty-five percent said that their schools had exploratory programs, 30% had counseling and co-curricular programs and 36% used interdisciplinary team teaching. Another national study in 1988 of middle schools conducted by the Johns Hopkins Center for Research on Elementary and Middle School (CREMS) reported that the school day for middle schools was still organized around a six-period day of classes focused on traditional departmental disciplines (Epstein & Mac Iver, 1989).

A study by American Association of Supervision and Curriculum Development (ASCD) in 1988 suggested that middle schools, although not completely in line with recommended practices for early adolescents, did a better job of providing essential features of education to 10-14 year olds than did junior high schools (Cawelti, 1988). For instance, 38% of middle schools with grades six to eight, as compared to 15% of junior high schools, grades seven to nine, used teacher-advisor guidance plans devoting significantly more time per day to the guidance program. Middle schools (grades five to eight or six to eight) were also far more likely to provide a combination of block time and equal-length periods than junior high schools (Cawelti, 1988).

Yet despite difficulties in implementing ideal middle school practices, research of exemplary middle schools supports the benefit of these practices for students. In a study by George and Oldaker (1986), over 90% of the 130 exemplary middle schools in the study reported using interdisciplinary teams rather than departmentalized instruction, flexible and block scheduling, and advisor/advisee programs, focusing on developmental needs of early adolescents, and a wide range of exploratory activities. These schools reported positive effects of these practices. Sixty-two percent described consistent academic improvement, and a decrease of discipline problems. Over 80% of the

respondents reported that students' emotional health, creativity, social development, and self-directed learning behaviors were positively affected by the reorganization to a middle school concept. In addition, 94% of the staff described improved staff morale, increased rapport and greater job satisfaction as they worked more closely with one another (George & Oldaker, 1986). Nevertheless, the gulf that separates the practices in these exemplary middle schools from the programs in most middle/junior high schools is wide. Cuban (1992) suggested an hypothesis to explain the failure of the junior high school/middle school to bring about fundamental change in early adolescent schooling. He contended that first the junior high and now the middle school has been unable to escape the shadow of the high school which has traditionally been regarded as more legitimate and more prestigious and therefore more worthy of emulation than the elementary school.

Interdisciplinary Team Organization

Interdisciplinary team organization has become almost synonymous with the definition of the exemplary middle school (Little & Shulman, 1984). While teams of teachers are present in all levels of schooling, the interdisciplinary team organization is becoming a central characteristic of middle schools (Alexander & George, 1981). The Carnegie Report (Carnegie Council, 1989), along with

other literature on middle school organization (Buan & Olson, 1988; Fenwick, 1987; George, 1984; Vars, 1984; Wiles & Bondi, 1981), recommends that middle schools be organized into interdisciplinary teams of teachers and students who work together to achieve academic and personal goals and create small communities for learning. "Teaming provides an environment conducive to learning by reducing the stress of anonymity and isolation on students" (Carnegie Council, 1989, p. 38). Students organized in interdisciplinary teams theoretically find a secure, caring base for social, emotional, and academic growth with teachers who plan and oversee their core academic program and provide for necessary individual adjustments. Teachers in this organization ideally work together to plan and implement a consistent, integrated core program of studies with a schedule that allows them to meet and plan strategies to solve student problems.

Definition. The term "interdisciplinary team organization" (ITO) is not synonymous with the team teaching practices described in the literature of the 1960s and 1970s, which was based on shared instruction of a common group of students in one classroom at one time. Team teaching then was frequently associated with differentiated staffing separating master teachers from less experienced colleagues. ITO, on the other hand, is based on the cooperative planning of instruction for a commonly shared

group of students. The team also collaborates on scheduling of students, grouping for various instructional goals, planning of time and resources, and creating interdisciplinary thematic units. There are four elements of interdisciplinary team organization described in the literature. They are: (a) common planning or team meeting time, (b) shared students, (c) a common block time teaching schedule, and (d) common team space (Alexander & George, 1981; Erb & Doda, 1989; Wiles & Bondi, 1981). One aim is to promote communication, coordination, and cooperation among subject matter specialists and escape from the fragmentation of departmentalized instruction. The essence of team organization is sharing--teachers who share the same students, schedule, and responsibility for teaching the core subjects (George, 1984).

Implementation of Interdisciplinary Team Organization.

Again, national surveys indicate that universal implementation of the interdisciplinary team organization concept is lacking. In 1967-1968 a survey showed that less than 10% of middle and junior high schools used an interdisciplinary approach (Alexander & McEwin, 1989). By 1988, the team approach in basic subjects rose to 31% in fifth grade, 38% in sixth grade, 28% in seventh grade, and 24% in eighth grade (Alexander & McEwin, 1989). A 1988 ASCD survey (Cawelti) showed that 36% of middle schools (grades six to eight) used interdisciplinary teams as compared to

16% for all schools grades five to nine. These data are congruent with a national survey of middle grade principals conducted by the Effective Middle Grades Program at the Johns Hopkins University Center for Research on Elementary and Middle Schools (CREMS) (Epstein & Mac Iver, 1989) which showed that 43% of early adolescents receive instruction in interdisciplinary teams some time in grades five to nine (Mac Iver, 1990). Yet, this data showed that almost 60% of middle schools (grades five to eight and six to eight) and about 75% of the schools with other grade configurations do not use an ITO structure. In order to make teaming viable, teachers need common planning time; yet, according to the CREMS survey, only 10% of the middle schools showed a strong enough commitment to the teaming concept to provide adequate common planning time and to ensure that teachers actually used it for collaboration (Mac Iver, 1990).

Interdisciplinary teaming and teaching was one focus of a study of sixth graders by Lounsbury and Johnston (1988). In 132 schools in 45 states, sixth graders were shadowed for a day and the data analyzed by 23 analysts. In 60 of the schools, the sixth grade was the entry grade in a six to eight or a sixth and seventh grade school, a typical middle school structure. Of these, 46% were organized into ITO teams. However, a teaming structure did not ensure implementation of interdisciplinary teaching and planning. In fact an "ample" fusion or correlation of separate

subjects occurred in only 15% of the teamed schools. This percentage was the lowest of any of the organizational patterns, falling below the curriculum correlation reported in self-contained classrooms, departmentalized schools, or partially-teamed schools. These data led the authors to conclude:

It can be argued that the teamed schools fail to achieve one of their major goals: the integration of subject matter. The most alarming dimension of the sixth grade curriculum is the low incidence of efforts to correlate and integrate the different subjects. Most distressing perhaps is that ITO team teaching arrangements actually provided less evidence of curriculum correlation than any other instructional organization. One of the most compelling opportunities of teaming is being missed. (pp. 40-41)

Two other studies on middle schools indicate that interdisciplinary team organization (ITO) is not being implemented to the extent that the literature recommends. According to Valentine (1984), instructional organization in the middle school tended toward the traditional with subject area (departmentalization) being the preferred system of organization. Valentine found that in grades five to nine ITO was the least preferred method of organization reported in a survey of principals. This appeared to indicate that many middle schools did not believe ITO to be an integral part of a middle school structure, contrary to middle school philosophy (Alexander, 1984).

Binko and Lawlor (1986) reported that ITO was one of the least used middle school practices in the 237 schools

surveyed. Another finding was that the age of a middle school was negatively related to the use of ITO; that is, the longer a middle school had been in existence, the less likely that it would utilize ITO, suggesting a halo effect that diminished with time.

Advantages of ITO. The literature on middle schools describes a number of advantages to be derived from an ITO structure (Alexander & George, 1981; George & Oldaker, 1986; Erb & Doda, 1989; Lewis, 1981; Wiles & Bondi, 1981). In summary, the main advantages cited by proponents are:

1. The team has a comprehensive knowledge of student needs because its structure of four to five teachers who share approximately 125 students creates a smaller and more intimate environment. The team structure and schedule also allow the team to meet student needs and provide a greater opportunity for individualized instruction, cross-grading, flexible scheduling, and sub-grouping.

2. ITO leads to improved student behavior and a consensus among staff of acceptable behavior and improved communication with parents.

3. The superiority of group problem solving among ITO teachers and a greater integration of the curriculum allows students to see more relationships in their fields of study. ITO allows the coordination of the curriculum while still taking advantage of the expertise of subject matter

specialists while providing a greater stimulus to creative instruction.

4. ITO leads to the development of a sense of community among students and teachers. ITO develops an "esprit de corps" among teachers.

5. Teachers have the opportunity for autonomous decision-making in areas that affect their teams, including scheduling of students, use of time, and budgeting.

Research on Interdisciplinary Team Organization

The bulk of the research literature on teaming arrangements in middle schools has documented the effects on student outcomes, described the day to day life in middle schools, and summarized some of the problems in implementation (Little & Shulman, 1984) rather than focusing on teacher concerns (Arhar, Johnston, & Markle, 1988; Cotton, 1982; Little & Shulman, 1984).

Student Outcomes. Cotton (1982), in a review of the research on the student effects of interdisciplinary teaching, found inconclusive evidence linking ITO with higher student achievement. However, affective student outcomes, such as self-esteem and school attitudes, were higher in schools utilizing interdisciplinary team teaching. Bradley (1988) compared the effectiveness of an interdisciplinary team pattern with a departmentalized pattern in selected middle schools and found

interdisciplinary team organization to be more effective in math, equally effective in reading, no different in attendance, and more positive in parental perceptions than in departmentalized schools.

Three studies comparing student outcomes in traditional junior high school classes (single subject classes) and interdisciplinary core classes showed mixed results. In a study of 14 classes, 10 traditional and 4 core classes, Erb (1980) found no significant differences with respect to student-to-student interaction, control of student behavior, student directed vs. teacher directed activities, teacher talk, or amount of time in small group or independent activities. Opportunities for students to demonstrate thinking, discuss preferences and consequences, make value judgments and express feelings, make decisions and establish independence were no more present in core classrooms than in departmentalized classrooms. However, Sinclair and Zigarmi (1980) found in comparing traditional and core classrooms that students in interdisciplinary teams had significant gains in academic achievement as measured by the California Achievement Test ($p < .05$) and students perceptions of school climate were enhanced in ITO, core classes ($p < .5$).

The purpose of Meichtry's (1990) case study research was to inspect how an ITO arrangement has the potential to influence teacher interactions and the impact of these interactions on the classroom. He concluded that regular

daily teacher interaction among ITO teachers caused teachers to reflect about alternative methods of instructing, evaluating, disciplining or helping students. Two or more teachers teaching the same content collaborated on content, teaching approaches, and instructional activities as well as jointly planned interdisciplinary thematic units.

School Organizational Outcomes. Research on interdisciplinary team organization indicates that an ITO structure results in changes in patterns of school decision making, governance, and commitment. George (1982) described four phases through which ITO teams typically developed, either simultaneously when a new middle school is first created, or in successive phases in newly restructured middle schools:

- Phase 1, Organization: Teachers and students are organized into teams which develop common student expectations and plan team conferences with parents and some joint activities.

- Phase II, Community: A sense of belonging, community and commitment emerges as evidence by team mottoes, logos, activities, and interdisciplinary units.

- Phase III, Team Teaching: Collaboration in the classroom develops as joint work leads to planning and implementation of an integrated curriculum.

- Phase IV, Governance: Teachers take part in shared school governance, such as site councils, and are involved

in decision making in the areas of scheduling, budget, and staff development.

Case study and interview research indicated that an ITO structure enhances staff interaction. Two case studies of middle school teams found that an ITO arrangement strongly influenced teacher interactions (Meichtry, 1990; Whitford & Kyle, 1984). Teachers were observed in continual interactions during lunch and individual and team planning times. During these times they talked about student concerns, instruction, evaluation and management of their shared group of students. They sought advice from each other and jointly planned activities. The researchers and teachers attributed the nature and frequency of their interactions to ITO.

Teaming was one important variable in Lipsitz's (1984) study of four middle schools. The schools had been selected for study on the basis of their reputations for excellence in providing developmentally appropriate instruction responsive to the needs of early adolescents. All four schools used a multi-discipline teaming structure with common planning periods. There was evidence of staff cooperation and shared discussion and an absence of teacher isolation in all the schools, but each school evidenced different degrees of team interdependence. One of the four schools, Noe Middle School, identified teaming as the one most representative feature of their school. "The best

thing about teaching in this school is the team. I was in a junior high school and I was completely isolated" (Lipsitz, 1984, p. 99), reported a teacher from Noe Middle School.

Teacher Outcomes--Positive. Middle school research linked to teacher outcomes is very limited and research on the teacher outcomes associated with interdisciplinary team organization is in its infancy (Arhar, Johnston, & Markle, 1988). Chissom (1986) found that faculty cooperation (consisting of cooperation among teachers, interaction with colleagues, utilization of team concepts) was the highest rated category associated with professional satisfaction in middle schools. Team organization which fostered team planning and student personal growth was cited as essential to the improvement process of effective inner city middle schools by Levine, Levine, and Eubanks (1984).

Blomquist (1986) reported on teacher attitude changes within one school which changed its organization design to a middle school concept. One innovation was interdisciplinary teaming, and teachers felt "teaming is beneficial to teachers; they like to be a part of a team and prefer to work on a team rather than individually" (Blomquist, 1986, p. 41)

Bryan and Erickson (1970) compared teacher perceptions and opinions in a middle school interdisciplinary organization structure and a junior high school, departmentalized structure and found few significant

differences. They found middle school teachers slightly more satisfied with their schools. In a similar study, Ayalon (1988) found ITO (interdisciplinary team organization) teachers felt more positive than DEP (departmental) teachers on faculty cohesiveness, socialization of new teachers, goal setting, teacher evaluation, instructional coordination, shared values, and instructional rewards and no significant differences in job satisfaction, efficacy and decision-making participation. In a related study, Pook (1981) measured the relationship of teacher satisfaction to the degree of implementation of recommended middle school practices in Colorado middle schools. There was a significant positive relation between the implementation of middle school practices and satisfaction with the curriculum ($p < .01$).

As part of their study of the relationship between teachers' sense of efficacy and student achievement, Ashton and Webb (1986) studied two organizationally different middle-level schools, one ITO and one DEP. Although the focus of the study was not collaboration, the researchers hypothesized that school organization that encourages collegiality may enhance teacher efficacy by creating an atmosphere of support. In this study, middle school teachers evidenced significant differences from junior high teachers on several factors: greater satisfaction ($\chi^2 = 3.38, p \leq .05$); higher belief in the importance of teaching

($\chi^2 = 6.14$, $p < .05$); greater likelihood to choose teaching again as a career ($\chi^2 = 7.69$, $p < .01$) and a higher expectancy of student success ($F = 6.18$, $p < .05$). Results indicated that teams produced a sense of community, a common sense of accomplishment, and a source of professional and emotional support.

The middle school teachers spoke of sharing frustrations with team members and supporting one another in difficult times. The organizational structure of teaming appeared to contribute to the development of community in the middle school.
(p. 170)

Ashton and Webb concluded that teaching teams, guidance programs, multi-aged grouping, and clear and shared educational aims appeared to lessen teachers' self doubts.

Teacher Outcomes--Disadvantages. There appear to be strong advantages to ITO as reported in the research literature on middle schools, but disadvantages are cited also. Teachers involved in ITO felt they did not have time to share ideas and materials with colleagues. Several studies reported that the fine arts and related arts teachers and specialists were not included in core teams (Blomquist, 1986; Lipsitz, 1984; Whitford & Kyle, 1984). This caused them to feel dissatisfied and left out and caused scheduling problems (Blomquist, 1986). Ashton, Doda, Webb, Olejnik, and McAuliffe (1981) reported that ITO teachers experienced greater stress in middle schools than did teachers in junior high schools. They also reported

lower satisfaction in colleague relations, suggesting that interpersonal problems arose when people worked together.

Time and workload are frequently mentioned as disadvantages in ITO schools (Ashton & Webb, 1986; Clark & Clark, 1987; Whitford & Kyle, 1984; Valentine, 1984). Pook's (1981) study showed that teachers in schools with high implementation of middle school practices reported greater dissatisfaction with their teaching load than did teachers in schools with low implementation of middle school practices. In the Middle School Efficacy Study 31% of middle school teachers but only 5% of junior high teachers mentioned "working hard" as part of their teaching role profile (Ashton & Webb, 1986). Researchers also reported that shared decision making also took time. "Though teams were sources of energy and inspiration, they were also taxing" (Ashton & Webb, 1986, p. 114). Finally, there is the possibility for teams to become isolated from one another, although group cohesion and intra-team support is often reported as an advantage. To counteract this, one middle school in Lipsitz's (1984) study reported that the school used such practices as all staff social functions, a staff newsletter, a curriculum center for shared units, and all-school faculty meetings to build school unity.

Effective Interdisciplinary Teams

Problems in Implementation. The literature on team teaching and the middle school literature detail some problems in implementing and maintaining effective ITO teams. In summary these are:

- imbalanced team participation causing dissatisfaction (Brunetti et al., 1972).

- instability of teams caused by:

- high time demands and requirements for complex coordination (Bentzen, 1974; Bredo, 1977; Burke, 1988; Cohen, 1976);

- informality and lack of explicit team policies (Bredo, 1977; Cohen, Meyer, Scott, & Deal, 1979);

- failure of support from the principal (Cohen, 1981; Little & Bird, 1984);

- turnover in team membership (Cohen, 1981; Little & Bird, 1984);

- turnover in principals resulting in less supportive leadership to teams (Little & Bird, 1984).

- requirements for high teacher commitment, a clear policy on teaming, and monetary commitment (Valentine, 1984).

- equal status of team members causing ambiguity about team leadership (Little, 1987).

- clashing of team personalities (Burke, 1988).

- difficulties in scheduling (Burke, 1988).

- lack of inservice on group process (Alexander & George, 1981; Burke, 1988).
- absence of regular team planning time (Alexander & George, 1981; Mac Iver, 1990).
- traditional departmental attitudes creating a barrier to developing interdisciplinary curriculum (Binko & Lawlor, 1986; Lounsbury & Johnston, 1988; Valentine, 1984).

Effective ITO Teams. In a study of highly effective ITO teams in exemplary middle schools, George and Stevenson (1988) identified attributes common to effective teams.

Briefly these attributes were:

- the regular presence of two types of planning periods, individual teacher planning and team planning.
- the selection by the administration of compatible team members with high input from teachers; willingness of teachers to work together while respecting differences.
- an effective and official team leader, either selected by the team or rotating among team members.
- implementation of effective team practices:
 - spirit of help and advocacy for every child;
 - support and recognition for student success; care monitoring of student achievement;
 - effective communication and excellent relations with parents;
 - clear, shared behavioral expectations for students;
 - use of cooperative learning;

- strong team climate of belonging and team identity;
- substantial use of interdisciplinary units;
- characteristics of team members:
 - optimistic about students and the program;
 - impressive work ethic;
 - commitment to student success;
 - spirit of cooperation with teammates; an attitude of give-and-take.

Summary

A vision for middle level education has been evolving in America for the last century. Since the middle school movement began in 1960, a strong component of this vision has been interdisciplinary team organization. Although implementation of ITO seems to be slow, the vision of middle school teachers working cooperatively for the benefit of young adolescents continues to receive enthusiastic endorsement from middle school reformers on a national level and from a vision of 21st century school legislation in Oregon. This vision is in congruence with a corresponding movement in business and industry toward cooperative work groups and in education toward site-based decision making and 21st century school councils.

CHAPTER III

METHODOLOGY

INTRODUCTION

Study Purpose

The purpose of this case study is to describe and explore the dynamic workings of interdisciplinary teams of teachers in two Oregon middle schools. The focus is on the teachers who are attempting to make an interdisciplinary team organizational (ITO) structure work--what they know and do, the processes of their interrelationships, their perceptions of themselves working in new cooperative roles, and the curricular and student outcomes of this teaming process. An additional purpose is to add to the body of research about ITO teams in order to provide useful information to schools currently using an ITO structure or considering adopting one.

The interdisciplinary teams in this study are examined on the basis of self-reports by teachers, team leaders, and principals. The teams are described within the context of their school histories and school district demographics.

Chapter Contents

This chapter presents the methodology for this study. It begins with a description and rationale of the case study design. It continues with a description of the selected case-study sites and a consideration of reliability and validity. Following is a detailed description of the sources of evidence used in the study and the data collection procedures. Finally, data analysis procedures are described.

CASE STUDY DESIGN

Rationale

A descriptive multiple case study design was used as the research methodology. The case study design followed the guidelines established by Yin (1989). According to Yin:

In general, case studies are the preferred strategy when "how" or "why" questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context. Such explanatory case studies can be complimented by two other types--exploratory and descriptive case studies. (p. 13)

A case study design was selected because it allowed the researcher to formulate an in-depth description of teacher perceptions about their participation in an ITO structure. Erickson (1987) suggested that interpretive research (by which he means ethnography, case study, and other qualitative methods) is an appropriate approach when "the central research interest [is] in human meaning in social

life and in its elucidation and exposition by the research" (p. 119). A descriptive case study enabled the researcher "to describe the real-life context in which an intervention (ITO) has occurred" (Yin, 1989, p. 25) and to describe "the immediate and local meanings of actions as defined from the actors' point of view" (Erickson, 1987, p. 119).

In arguing the preference of a case study or an historical study, Yin (1989) states:

The case study is preferred in examining contemporary events when the relevant behaviors can't be manipulated. Thus, the case study relies on many of the same techniques as a history, but it adds two sources of evidence not usually included in the historian's repertoire: direct observation and systematic interviewing. (p. 19)

Yin (1989) defined a case study as an empirical inquiry that:

- investigates a contemporary phenomenon within its real life context; when
- the boundaries between phenomenon and context are not clearly evident; and in which
- multiple sources of evidence are used.

A case study investigates a contemporary phenomenon within its real life context: A study on interdisciplinary team structure matches this tenet because it involves teachers' planning and relationships with students and staff on a day-to-day basis. The planning and interactions on an ITO team are at the heart of teachers' school experiences.

The boundaries between phenomenon and context are not clearly evident: The relationships and decisions teams make in an ITO organization are part of the fabric of their complex school life. They involve other contextual and organizational factors which overlap and affect one another.

Multiple sources of evidence are used: There were five sources of evidence used in this study. They were: documentation and demographics, structured interviews, key informant interviews, direct observation, and questionnaires.

Case Study Framework

Likert's (1961) causal model provided a framework for this study. The guiding questions of the study were taken from the three segments of the framework: Causal Variable: "Structure," Intervening Variable: "Teamness," and End-Result Variables: "Outcomes" (see Table II).

Case Study Questions

The questions of the study were formulated after a review of the relevant literatures on: (a) school structures that support collaboration; (b) participatory decision making in business and industry; (c) collaborative structures related to teacher attitudes on satisfaction, efficacy, and stress; and (d) middle schools and interdisciplinary team organization in the middle school. The following questions served to guide the data collection

at each selected site and provided the organizing framework for data analysis.

TABLE II
CASE STUDY FRAMEWORK

Causal Variable: Structure	Intervening Variable: Teamness	End-Result Variables: Outcomes
<u>All School Structure</u> history/policy membership school goals linkages leadership schedule	<u>Collaboration</u> creativity problem solving <u>Cohesion/Commitment</u> trust shared goals participation	<u>Teacher Affective Outcomes</u> satisfaction stress efficacy <u>Teacher Behavioral Outcomes</u> curriculum and instruction counseling and discipline
<u>Individual Team Structure</u> organization members roles goals procedures leadership	<u>Communication</u>	

1. How do teachers describe the structure of their team?
2. How do team members define "teamness" as it operates in their team and what elements contribute to teamness?
3. How do ITO teams affect teachers' attitudes about their levels of satisfaction, efficacy and stress as they relate to their teaching?

4. How does an ITO team structure affect teachers' behaviors (outcomes) in planning and carrying out curriculum/instruction and counseling/discipline?

5. Are there differences in how teachers from different teams in the same school and teams in two different schools describe their experiences and attitudes about teaming?

CONTEXT OF THE STUDY

Selection of Case Study Sites

Two Oregon middle schools were selected for this study. Both sites were selected because they were in a first year implementation of an interdisciplinary team organizational structure. The structure utilized by both schools matched the criteria defined by Alexander and George (1981) which stipulated that an ITO structure was present when a group of teachers shared:

- the responsibility for planning, teaching and evaluating curriculum and instruction in more than one academic area;
- the same group of students;
- the same schedule;
- the same area of the building.

Although these two sites were both implementing an interdisciplinary team organization for the first year, they were selected because their differences in demographics,

teaming structure, and district/school history allowed a basis for comparison and contrast.

Riverview Middle School. The first middle school in the study, named Riverview Middle School for the purpose of the study, is located in an Oregon rural-farm community with an approximate district population of 16,400 people. Total school enrollment in 1992-1993 was 3,884. Riverview is one of two middle schools in the district and serves sixth, seventh, and eighth-grade students. Riverview Middle School was built in 1950 as a high school, was converted into a junior high school in 1970, and finally restructured into a middle school in 1984. In 1992-1993, the year of this study, it had an enrollment of approximately 375 students. Its staff consisted of one principal, one counselor and 22 certified teachers. According to a ranking of Oregon middle schools on the basis of SES by the Oregon Department of Education (ODE, 1993) Riverview ranked 72 out of 340 middle level schools in Oregon (a rank of one would be the school with the lowest SES standing and a rank of 340 would be the school with the highest SES standing).

Units of Analysis--Riverview. The primary units of analysis were three interdisciplinary teams at Riverview: a sixth-grade team, a seventh-grade team, and an eighth-grade team. Each team was composed of four teachers who were responsible for teaching language arts, reading, social studies, math, and science. However, since teams were made

up of individual teachers who were interviewed as part of this study, these individuals were considered as secondary units of analysis. Thirdly, school-wide descriptive data was collected to help formulate an overall view of school organization and teachers' attitudes, and this constituted a third unit of analysis. The data on the three teams at Riverview are presented in three embedded case studies. A cross-case analysis of the three Riverview teams is also presented.

Green Valley Middle School. The second site selected for this study, called Green Valley Middle School for the purpose of the study, was a large suburban district adjacent to a major Oregon metropolitan area. Green Valley Middle School is one of three middle schools in the district and serves sixth, seventh, and eighth-grade students. It was opened as a new facility in September 1992. The district population was approximately 50,000 people with a total school enrollment of 9,294 in 1992-1993. Green Valley Middle School had a school enrollment in 1992-1993 of approximately 750 students. Its staff consisted on one principal, one vice-principal two counselors and 46 certified teachers. According to figures provided by the Oregon Department of Education (ODE, 1993), it had a SES ranking of 325 out of 340 middle level schools (a rank of one would be the school with the lowest SES standing and a

rank of 340 would be the school with the highest SES standing).

Units of Analysis--Green Valley. The primary units of analysis at Green Valley Middle School were two interdisciplinary teams of teachers (one seventh-grade team and one eighth-grade team) and two subject-matter teams (one seventh-grade team and one eighth-grade team) within one of Green Valley's three schools-within-a-school. The interdisciplinary teams were composed of three teachers: a block teacher (language arts/social studies), a math teacher, and a science teacher, who shared a common group of students. Each subject-matter team was composed of three or four block teachers. However, since teams were made up of individual teachers who were interviewed as part of this study, these individuals were considered as secondary units of analysis. Thirdly, school-wide descriptive data was collected to help formulate an overall view of school organization and teachers' attitudes, and this constituted a third unit of analysis. The data on Green Valley Middle School are presented in a separate case study. The data collection focused on one interdisciplinary team and two subject-matter teams. Since teachers crossed team lines, the data are presented as one case study for Green Valley. A cross-case analysis of Riverview Middle School and Green Valley Middle School is also presented.

Table III presents a summary comparing key factors of the Riverview and Green Valley sites.

TABLE III
COMPARISON OF CASE STUDY SITES

Riverview	Green Valley
Rural	Suburban
No board policy; teaming is a result of a site decision	Board policy on teaming; three year study
6th, 7th, and 8th grades	6th, 7th, and 8th grades
3,884 students in district	9,294 students in district
375 students in school	750 students in school
Facility built in 1950	New facility
Team leader--1 period a day	Full-time team leader
SES--72 out of 340	SES--325 out of 340
Site council representatives elected from teams	Site council not related to teams

VALIDITY AND RELIABILITY

Four tests for validity and reliability have been cited for use in judging the quality of case studies: construct validity, internal validity, external validity, and reliability (Yin, 1989).

Construct Validity

Construct validity is concerned with establishing correct operational measures for the concepts being studied. The case study protocol operationally defined the constructs of structure, teamness, affective outcomes, and teacher behavior outcomes. To establish construct validity the researcher:

1. Collected multiple sources of data.
2. Created a case study database of organized, retrievable information consisting of notes, documents, tabular materials, and narratives.
3. Created a chain of evidence by developing a detailed case study protocol and keeping accurate records of data collection, and by citing evidence in the data analysis.
4. Consulted with key informants about the accuracy of information and the validity of inferences in the draft document.

Internal Validity

"Internal validity is a concern only for causal or explanatory studies where an investigator is trying to determine whether event x led to event y" (Yin, 1989, p. 43). This study was descriptive in nature and did not focus on causality. However, since some inferences were drawn during the analysis of the data, the researcher sought

convergent evidence and consulted with key informants to validate inferences.

External Validity

External validity is concerned with establishing the generalizability of the findings of the study. This was a multiple case study design. Replication logic and analytic generalization were used in identifying converging patterns and themes in the individual case studies and in the cross-case analyses. Because the study was descriptive, its generalizability is limited.

Reliability

The goal of reliability is to minimize errors and bias and to ensure that the study could be replicated with the same results. Reliability was sought through careful documentation and procedures, a precise case study protocol, multiple sources of evidence, and establishment of a case study database.

CASE STUDY DATA COLLECTION PROCEDURES

Sources of Evidence

According to Yin (1989), "the case study's unique strength is its ability to deal with a full variety of evidence--documents, artifacts, interviews, and observations" (p. 20). Multiple sources of evidence were used in this case study to collect the data relevant to the

questions of the study. An advantage of multiple sources of evidence is that similar themes emerging from the data can be triangulated. Therefore, multiple measures of the same phenomena add to the construct validity of the study. Five sources of evidence provided data for this study: documents, structured interviews, key informant interviews, direct observation, and questionnaires.

Documentation and Demographic Collection

Contextual data were collected from published school and district documents and from demographic statistics published by the Oregon Department of Education. Additional documents providing contextual data were agendas, program descriptions, faculty meeting minutes, team guidelines, and grant proposals. This collection of documentary evidence was used to corroborate and extend evidence gathered from other sources.

Interviews

Structured interviews were the primary method of data collection for this study. A total of 24 structured interviews were conducted from the two case study sites. Interviews were taped, transcribed, and analyzed for patterns and similar themes.

Key Informant Interviews

Four team leaders served as key informants for this study. They provided information during informal interviews and provided direction for further data collection. The key informants reviewed drafts of the data analyses. This reviewal process provided feedback on the accuracy and the validity of inferences, adding to the reliability of the study.

Direct Observation

The researcher collected evidence of team structure and team functioning through numerous observations of team meetings at both sites from August 1992 to May 1993. The field notes of these observations were used to corroborate and extend evidence from other sources.

Questionnaire

A team effectiveness survey was developed by the researcher and administered to team participants either in June or September 1993. The data was aggregated at the team level and was used to corroborate and extend evidence gathered from other sources.

DATA ANALYSIS PROCEDURES

The data for each of the four case studies and for the two cross-case analyses were analyzed and organized according to the guiding questions of the study. At the

first level of analysis, data was organized in matrices according to themes that emerged in the four areas of the study. Data included in the matrices were drawn from multiple sources of evidence. Participant wording was frequently used in the matrices to validate patterns of responses. The four themes emerging from the guiding questions of the study were:

- Team Structure
 - Organization
 - Members
 - Roles
 - Goals
 - Procedures
 - Leadership
- Teamness
 - Collaboration
 - Cohesion
 - Communication
- Teacher Affective Outcomes
 - Satisfaction
 - Efficacy
 - Stress
- Teacher Behavioral Outcomes:
 - Curriculum/instruction
 - Counseling/discipline

The data analysis of this study is presented in four individual case studies: three case studies of Riverview teams and one case study of Green Valley teams.

At the second level of analysis, data were reduced and organized into a second set of matrices that allowed the researcher to identify themes for the cross-case analysis of the three Riverview teams.

A third level of analysis reduced data and identified themes for a cross-case analysis of the two school sites.

LIMITATIONS

This study is subject to several limitations.

1. The study focuses on only one year in the development cycle of the interdisciplinary teams at the school sites.
2. Participant perceptions and self-reports are a major source of data.
3. The researcher was personally known by the participants at one site, which may have biased their responses.
4. Generalizability is limited by the descriptive nature of the study.

SUMMARY

The purpose of this descriptive multiple case study is to describe the structure, team member relationships, and

outcomes of interdisciplinary teams at two Oregon middle schools. A case study methodology was selected to enable the researcher to collect a rich array of contextual, procedural, and teacher self-report data to build a picture of the day-to-day meaning of a teaming structure in teachers' lives.

Multiple sources of evidence contributed to data analyses and were reduced to identify converging themes in the individual case studies and in the cross-case analyses. These multiple sources provided a basis for triangulation, which was intended to increase the reliability of the study.

This chapter details the data collection and data analysis procedures. In addition, this chapter includes a discussion of the reliability and validity of the study as well as its limitations.

CHAPTER IV

FINDINGS

INTRODUCTION

Purpose

The purpose of this case study is to describe and explore the dynamic workings of interdisciplinary teams in two Oregon middle schools. The focus is on the teachers who are attempting to make an interdisciplinary team organizational structure work--what they know and do, the processes of their interrelationships, their perceptions of themselves working in new cooperative roles, and the curricular and student outcomes of this teaming process.

Assumptions

Based on the literature of collaborative teaming and specifically of interdisciplinary team organization in middle schools, this case study is based on the following assumptions.

1. A structure of interdisciplinary team organization enhances collaborative planning among teachers. Collaborative planning is beneficial to teachers and students because it results in more creative and better-informed decisions that affect student learning.

2. Teaming produces small work groups that increase work system interdependence; higher levels of interdependence result in higher interaction; increased interaction results in greater satisfaction by satisfying a strong human motive to be associated with one's colleagues (Bridges & Hallinan, 1978).

3. A formal team structure is essential to effective ITO teams (common planning time, shared students, clear goals, well-defined roles) but structure alone is not sufficient to create teams that develop a high sense of community and extensive joint planning in the areas of curriculum and instruction.

4. Effective ITO teams typically move through several stages of growth, though not necessarily in linear fashion. These stages have been described by George (1982) as:

- Organization: developing focus through common team procedures and policies.

- Community: developing a spirit of belonging, community and commitment.

- Joint planning/team teaching: collaborating on curriculum and instruction and implementing an integrated curriculum.

- Governance: sharing in school-wide decision making for the teams: scheduling, budget, staff development.

5. Collaborative planning is desirable because it increases teacher satisfaction, raises feelings of teaching efficacy, and reduces teacher stress.

6. Interdisciplinary curriculum planned by teams of teachers is beneficial to students by allowing them to make meaningful connections among disciplines.

Data Collection

Data were collected over a one year period of time at two middle schools. Data collection methods are summarized in Table IV.

TABLE IV
METHODS OF INVESTIGATION, 1992-1993

Method of Investigation	Number
<u>Riverview Middle School</u>	
Documents and Archives	varied
Grant and waiver applications	
Memoranda to staff	
Team agenda and minutes	
Observation Notes of Team Meetings	8
Key Informant Interviews	6
Structured Interviews, teachers	12
Structured Interviews, principals	3
Core team evaluation surveys	12
<u>Green Valley Middle School</u>	
Documents and archives	varied
Planning notes, organizational documents	
Board policy	
Curriculum	
Observation notes of team meetings	4
Key Informant Interviews	6
Structured interviews, teachers/counselor	6
Team evaluation surveys	3

Chapter Contents

Organization of the Data. The presentation of data in this chapter are organized into two school case studies, one on Riverview Middle School and one on Green Valley Middle School. The case study of Riverview is introduced with a presentation of the background and historical information about teaming at that school. This is followed by individual embedded case studies of each of the three ITO teams at Riverview: the sixth-grade team, the seventh-grade team, and the eighth-grade team. Finally, there is a cross-case analysis which compares and contrasts the three teams at Riverview.

Second, the case study of Green Valley Middle School begins with a history and background of teaming in the district followed by a case study of teaming in one school-within-a-school at Green Valley. This case study is followed by a cross-case analysis which compares and contrasts the ITO experiences at Riverview Middle School and at Green Valley Middle School.

Guiding Questions. Data for each case study are organized around the following guiding questions of the study:

1. How do teachers describe the structure of the teams?

2. How do team members define "teamness" as it operates in their team and what elements contribute to teamness?

3. How do ITO teams affect teachers' attitudes about their levels of satisfaction, efficacy, and stress as they relate to their teaching?

4. How does an ITO team structure affect teacher behaviors (outcomes) in the areas of planning and carrying out curriculum/instruction and counseling/discipline?

5. Are there differences in how teachers from different teams in the same school and teams in two different schools describe their experiences and attitudes about teaming.

CASE STUDY OF RIVERVIEW MIDDLE SCHOOL

Data Collection

Multiple sources of evidence were used in this case study to collect the data relevant to the questions of the study. Five sources of evidence provided data for this study: documents, structured interviews, key informant interviews, direct observation, and questionnaires. After a presentation of school background information, this section presents separate case studies of the three Riverview interdisciplinary teams.

Background

Riverview Middle School, located in a rural farm community, converted from a traditional junior high school (grades seven, eight, and nine) to a middle school (grades six, seven, and eight) in 1984. The district's elementary schools had become overcrowded but there was room for additional students at the three-year high school. Therefore, the decision was made to create two sixth/seventh/eighth middle schools in the district and move the ninth grade into a four-year high school. Although concerns to adopt a middle school philosophy based on the developmental needs of early adolescents were considered, this philosophy was secondary in importance to pressing student population realities. After a year of discussion, visitations to existing middle schools, reading research literature, and planning, Riverview began operating as a middle school. Although some elements of middle school philosophy were instituted, such as a sixth-grade block, sixth-grade intramural program, advisor/advisee period, and an exploratory activity period, some elements of the traditional junior high remained in place, including departmentalization, a seven-period schedule, interscholastic sports in grades seven and eight, and ability grouping. Teachers and students were not organized into interdisciplinary or grade-level teams; rather, it was common for teachers to teach several grade levels and as

many as four different subjects to separate groups of students.

As a result of a parent/student/teacher surveys during their first year as a middle school, Riverview identified a need to improve higher order thinking skills in its students. This need was translated into a goal which stated: "All Riverview teachers will collaborate, develop, integrate, and implement reasoning skills and strategies across the curriculum." A school improvement plan, which relied heavily on teacher sharing and planning in team structures, was written and initiated in the fall of 1987. Teachers were divided into three cross-curricular, cross-grade teams to share and plan for teaching thinking skills.

In the spring of 1988, Riverview wrote and received a 2020 School Improvement and Professional Development Grant from the Oregon Department of Education to extend its work in developing and implementing a thinking skills curriculum and in training teachers in teaching thinking processes. One of the goals was aimed at teacher collaboration and teaming: "To use (teacher) peers for refining teaching skills, strategies and models of teaching in a mutually supportive environment." When Riverview received a renewal 2020 grant in 1989, again teaming and collaboration were among the goals: "By providing adequate planning and collaboration time for teachers to plan, develop, practice,

and assimilate new strategies." By faculty request, teacher teams were reorganized along subject matter lines. During the four years that Riverview participated in the 2020 grant project, new norms for faculty teamwork, principal/teacher collaboration, and participatory decision making developed.

When a new principal, Joe Hales, came on board in 1989, his immediate concern was to eliminate what he considered to be a very restrictive ability grouping schedule. As a result of his leadership, the staff also began examining middle school literature and effective middle school practices. Initial discussions of grade-level teaming grew out of a concern that sixth-graders needed more stability. The sixth grade had been like a junior high school. The faculty felt sixth graders needed to be more self-contained or teachers needed to communicate more about students and their needs as individuals and as a group. In looking for a structure for the sixth grade, a formal teaming concept was very appealing. It provided a situation where students would still move between teachers, but teachers would better be able to communicate and work with students throughout the whole day rather just in discrete discipline areas.

Collaboration and teaming emerged as the focus and vision for structural and instructional changes. Teachers brainstormed an extensive list of advantages to teaming. This list of the advantages of teaming became the foundation

for a teaming philosophy. Items from that list can be grouped under three headings:

1. Student well-being: Improvements in

- student security;
- viewing students as "whole children";
- collaborative problem solving for at-risk

students;

- monitoring individual student progress;
- providing a stable environment;

2. Curriculum/Instruction: Improvements in

- continuity of program;
- sharing of ideas and techniques;
- expanded teacher knowledge of the total school

instructional program;

- accountability for instruction;
 - sharing ideas for cross-curricular and thematic
- approach; providing interdisciplinary links;
- fostering creativity and exchange of new

perspectives;

- providing continuous feedback and peer evaluation

in a non-threatening climate;

- promoting whole-school activities and field

trips;

- making better use of teacher talents and

strengths;

3. School climate and working conditions:

Improvements in

- dividing the workload;
- providing positive support;
- building trust and enthusiasm;
- providing models of teamwork for students;
- initiating positive climate changes as the result of team building;
- enhancing interpersonal relations;
- providing connections between teachers and administrators;

Riverview adopted a goal to create a structure to facilitate collaboration and enhanced teamwork. Beginning in the fall of 1990, teachers were organized into sixth, seventh, and eighth-grade teams. The first year the sixth-grade team began implementation with a common planning period. The seventh- and eighth-grade teams were conceived as planning teams, but teachers in those grades did not have common planning periods. Some inservice on team building was provided to staff that first year as well as team building at an all-school, two-day retreat.

The principal, Joe Hales, was committed to the idea of teaming. He said:

I think there is a lot of power in teachers cooperating with each other. I think teachers tend to get very isolated and teams of any kind can begin to break that down and get professionals talking to each other.

Joe Hales also felt that teaming was essential in a middle school because of the formative nature of these students. "We need to deal with their lives holistically. There is a critical need for kids to synthesize." He felt strongly that teaming must focus on integrating subject matter for students: "There is too much isolation in subject matter. It isn't working in American education. We need to take a holistic view of the world." Joe Hales observed that during his three-year tenure as principal at Riverview:

Teachers developed a sense that they could trust the process of teaming--that it wasn't phony and that someone was going to honor their decisions as teams. I think teachers started out with a lot of skepticism thinking "I don't want to deal with that--just let me alone to teach in my room." I think in three years we overcame a lot of that.

However, he also commented on the frustration of slow change.

The principal needs to look for hooks to get people involved a little at a time in teaming--like integrating study skills and making decisions on budget. My sense is that once you get the process started then the process carries itself forward, but initially you have to baby it.

Upon leaving Riverview for another district at the end of 1992, Joe expressed his biggest concern about teaming: "One person gets something started then another person comes. Somewhere we must get to the point where it doesn't depend on one person. It must be embedded in the culture."

For two years, 1990 to 1992, the sixth-grade team functioned with common students and a common planning period, but the seventh- and eighth-grade teams existed

more-or-less in name only. Then, at a middle school conference in the winter of 1992, a group of sixth-, seventh-, and eighth-grade Riverview teachers formulated a plan to strengthen the school's teaming structure. The basis of this plan was a part-time teacher-in-charge position to coordinate team activities and team planning, provide continuity and follow through, and coordinate school-wide activities, projects and assemblies. The plan also outlined team leader positions. Team leaders would be elected by their team and would also serve as the team's representative on the 21st Century School Council (site committee).

Although scheduling and funding did not allow for a teacher-in-charge position, several structural changes were made to strengthen the team concept at Riverview beginning with the 1992-1993 school year, the year of this study. Formal team leaders were elected for the sixth-, seventh-, and eighth-grade core teams (language arts, reading, social studies, math, and science) and for the electives team. These individuals also served on the site committee. They received one additional planning period in which to fulfill their extra duties as team leaders. A new schedule gave all teams a common planning period. Core teachers were given the responsibility to plan and instruct a BASICS period for all students on their team with an emphasis on reading instruction. A two-period language arts/social studies

block was formed. Because of a shortage of teachers, all core teachers except for team leaders had to teach one class outside of their team.

A new principal, Kevin Pine, came to Riverview in the fall of 1992 when this study of interdisciplinary teaming at Riverview began. He communicated that he was sold on the teaming concept.

My experience has been that groups perform better than individuals and that's how you get individuals to perform. The team concept offers a whole lot of positives that can help us do a better job for everyone, not just for kids but this is a home for teachers too.

As a new principal, his primary attention the first year was on the site committee, which had representatives from each of the core teams, the elective team, and parent, student, and classified representatives. With regard to the core teams, he defined his role during his first year as "watch and learn," and he did not take an active role in the core teams.

School Goals for Teaming

Perhaps the clearest statement of school goals for teaming was contained in a 21st Century Schools Waiver which Joe Hales applied for and received in the spring of 1991. This waiver requested that the Oregon Teacher Standards and Practices Commission waive certification requirements so that teachers in core teams could teach out of their areas of certified endorsements. The rationale, goals, and

activities of the written waiver request provided a clear vision of teaming at Riverview. It stressed cross-curricular planning, integration in core teams, and developing a "networked approach to addressing the educational, behavioral, and emotional needs of each student in the team." This waiver document was not widely distributed to staff. It may have been a missed opportunity to provide a strong foundation for a shared vision of teaming, especially since Joe Hales soon left Riverview.

When this study began in the fall of 1992, Riverview had a new principal who was unfamiliar with the history of teaming in the building. It had been two years since the staff had brainstormed ideas for the advantages of teaming and had begun implementing its school goal of moving to an interdisciplinary teaming structure. In those two years, there had also been five new staff members and the loss of several key staff members who had been influential in the early teaming efforts. Since the goals and rationale for teaming had not been articulated or refined in some time, there was a great deal of variety to the question asked of the core team members, "What are the school's goals for teaming?" Almost every individual had a different answer. Responses included: working on cross-curricular themes, providing consistency for students (curriculum and behavioral expectations), sharing ideas, building a more familial climate and feeling of belonging for students and

staff, and developing common strategies for helping students. In terms of curriculum and instruction, the goals mentioned by the staff were somewhat vague and aimed at improved teacher planning rather than in terms of improved student learning.

RIVERVIEW: SIXTH-GRADE TEAM

After background information is presented on the sixth-grade team, data are organized according to the guiding questions, summarized in Table V.

TABLE V
CASE STUDY FRAMEWORK: RIVERVIEW
SIXTH-GRADE TEAM

TEAM STRUCTURE	TEAMNESS	TEACHER AFFECTIVE OUTCOMES	TEACHER BEHAVIORAL OUTCOMES
●organization	●collaboration	●satisfaction	●curriculum and instruction
●members	●cohesion	●efficacy	
●goals	●communication	●stress	●counseling and discipline
●procedures			
●roles			
●leadership			

Background

A sixth-grade interdisciplinary team structure was implemented in 1990-1991, two years before this study.

There were five teachers on the team the first year who taught language arts, reading, math, and science. Sixth-grade social studies was assigned to several different teachers who could not be scheduled with the common planning period. Although the five teachers taught primarily sixth grade, all had additional teaching assignments in the seventh or eighth grades. The elective teachers and support staff were included in extended grade level teams but did not share a common planning period with them and played a peripheral role in team planning.

The team met weekly and established organizational procedures and roles that first year. They established five specific goals. These goals were published and were central to team planning. These goals were:

1. Use a common planning time for sharing materials and techniques
2. Meet weekly to share individual curricular focuses so teachers could reinforce mutual teaching concepts and activities.
3. Create consistency for students through common expectations
4. Use the team as a forum for problem solving and intervention for troubled students
5. Coordinate across the curriculum by teaching and reinforcing agreed upon skills and developing and teaching one interdisciplinary unit.

Although teachers shared a common planning period, most team meetings occurred before school because the science and math teachers did not feel they could use their individual planning time for team planning. A norm developed for two teams within a team. The science and math teachers worked closely together during their planning time to develop and teach a common curriculum. They developed a close personal and professional relationship that relied heavily on joint planning. The language arts and reading teachers also did some shared planning and regrouping within their subject areas. One interdisciplinary unit was developed and taught.

The work of the sixth-grade team the first year was actively supported by the leadership of the principal, Joe Hales. Meetings took place in his office and he attended most meetings. Although the team rotated team leader and team secretary roles, the principal's presence and encouragement gave symbolic leadership which provided support to the importance of this collaborative effort. During the year the team bonded into a close, supportive group to such an extent that they enthusiastically shared their positive feelings and experiences of teaming at the winter OASCD (Oregon Association for Supervision and Curriculum Development) conference in January 1991. Joe Hales felt that teaming this first year was an antidote to burn out. "We saw some examples of teachers who said they

had been burned out who had some marvelous re-energizing experiences by dealing with the team."

The second year of the team, 1991-1992, the principal was actively pursuing a job in another district. He felt the sixth-grade team could function independently, and he stopped meeting with them. The team maintained its original goals, but due to some unstated and undiscussed interpersonal communication problems and the inactive involvement of the principal, team meetings fell off in the early part of the year. However, The team began to meet more regularly during the second semester and jointly planned some student activities. Joe Hales began more actively to support team planning projects and quietly assisted with personality issues. The team did not, however expand their repertoire of interdisciplinary units.

Sixth-Grade Team--Third Year. This study focuses on the team during its third year and the first year with Kevin Pine as principal. The teachers all had adjacent classrooms in one wing of the school. For the first time the sixth graders had their lockers in their team area. Teachers said this helped build team cohesion and reduced sixth graders' constant travel throughout the school. The team consisted of two women who each taught two language arts/social studies blocks and two men who taught sixth-grade math and science. Three of the team members had been on the sixth-grade team for three years, since its inception. One

member, Sara, was new to the team and was a first year teacher. The other three team members had assisted the principal in Sara's hiring. She explained the value of the team to her as a first year teacher:

They've been very supportive. I get materials all the time from Mary (the other language arts/social studies block teacher) and any time I ask her what she is doing she is really helpful and she asks if we want to work together. We're very different teachers but it's great. We check with each other at least once a day, usually more than that. Jason, has been very supportive--he is my mentor. And John has been very supportive. (Sara)

The principal stated that teaming:

is especially good for a new teacher. It's been a godsend to team. It gives them an opportunity to learn from more experienced teachers. Our new teachers really grew because of their groups.

The team cited their diverse nature as one of their strengths. Mary and John were veteran teachers, each with 24 years of teaching experience, Jason was a fourth-year teacher, and Sara just graduated from college and was new to teaching.

I think we're balanced. We have people from the old school trained in the old ways and we have people with very new ideas. We feed off each other and I think that makes for a much healthier situation rather than having four teachers working together trained in the old way and thinking that is the only way to do it or four new teachers not having the experience to rely on for help. (Mary)

John described how collaboration with new young teachers affected him: "It has rejuvenated me and showed me other ways to approach things. It has encouraged me to try

new things." In fact, John felt that diversity was an important criteria in placing individuals together on teams.

I wouldn't set up a team with just friends. If I had picked our team on how well I felt people get along I wouldn't have picked this combination. In our case it was just luck. For example, Jason is very spontaneous and so working with him in science I need to be ready to go with his ideas. I'm the sort of person that likes everything planned out, and I've learned to take a lot of jumps. He relies on me the other way." Jason's advice to teams just stating out is "Don't pick someone just like you. We are so different but we really enhance each other."

The team respected and relied on the different strengths each brought to the team. "Mary is the organizer, John is immediately outspoken, the devil's advocate, Sara is curious and flexible and Jason a more quiet philosopher." Jason saw himself as adding creativity and humor to the group. The team relied on Mary, the team leader, for her organizational skills and ability. "Mary's role is to organize; she keeps us on track; she's great" (Sara). "Mary does a good job of picking up the loose ends" (John). Jason appreciated Mary dealing with the organizational details which he hated to do himself. Mary herself said of her team leader role, "I try to use my extra period as team leader to the team's advantage. Sometimes I felt I was the glue that held the team together." During team meetings Mary was clearly the facilitator and leader. She developed the agenda with input from the others, circulated team minutes, and shared school-wide information. She was the conduit of

information and feedback between the team and the site committee.

Structure

Question 1: How do teachers describe the structure of their team?

Goals. All four team members felt that a primary goal for their team was to provide for students' emotional needs: "to give sixth graders a sense of security and safety," "as a group to understand how sixth graders operate and what we can do to help particular kids," and "to provide consistency for kids, requiring us to talk and work together."

The team seemed less certain about more specific objectives, particularly in the areas of curriculum and instruction. Two members reflected that they (the team) had decided on more specific goals but they could not put their finger on them. Feelings about curriculum integration were somewhat ambivalent. Providing curriculum integration was a goal mentioned by one member, and two members mentioned a common focus on organizational and study skills. However, interestingly enough, the principal, Kevin Pine, felt that curricular integration had been one of the sixth-grade team's main goals. He felt somewhat disappointed in the level of integrated instruction for all teams but did recognize integration was beginning to happen in the blocks and in sixth-grade science. He felt that the sixth-grade team had a specific goal to plan and teach two integrated units across all curricular areas, but that had not

happened. However, none of the four sixth-grade team members mentioned this as a team goal. Jason said that every once in a while the topic of thematic teaching came up in team meetings, but not everyone felt that [integration] was appropriate, "which I feel is O.K."

Team members cited a variety of team goals which they identified as most important to them personally. Although each team member described a different priority, personal and professional growth and satisfaction were common themes. Goal priorities ranged from "having time to bounce things off others when I need it" (Jason) and "access to each other's teaching styles" (John) and "integrating curriculum" (Mary) to "not being isolated" (John). Sara's highest priority goal for the team was centered on the student outcome of facilitating student interaction with each other in cooperative group work.

Team Meetings and Agendas. In describing their perceptions and recollections of what the team discussed during team meetings, several common areas emerged. Most often mentioned was that the team planned sixth-grade activities such as recognition assemblies and field trips. Site committee and school-wide concerns were other prominent areas of discussion. The new principal and site committee had spent a great deal of time during the year working through defining goals for the site committee and developing the process of decision making. The teams were frequently asked to provide feedback on the role of site committee in

school-wide decision making. Coordination of school-wide concerns such as team planning of an all-school Halloween party, testing schedules, options for scheduling changes and planning for open house also figured prominently in team meetings. The team also spent considerable team planning time sharing concerns about students with behavioral and academic problems and developing action plans for consistently helping students achieve greater success.

At the beginning of the year, particularly during a day of paid team planning, two curriculum concerns were addressed by the team. They planned a coordinated sixth-grade reading program to take place during their BASICS period and developed a sixth-grade talented and gifted plan. Curriculum and instruction concerns were not a major focus of the agenda for the total core team meetings throughout the year.

However, the two language arts/social studies block teachers and the two math/science teachers reported more extensive curriculum and instruction planning and coordination of teaching units within the partnerships of their shared subject areas. In fact, working with partners on subject-matter curriculum and instruction was stressed as a plus by all team members. Sara and Mary both reported on the success of their "travel agency" Canada unit.

Sara and I are working closely. We're exchanging students during social studies. One day they're with me working on one aspect of the unit then they work with Sara. The kids are having fun working in new cross-class groups.

The same close working relationship developed between the two science teachers.

We do the same science units at the same time. We sit down and determine what it is we are going to do--what we did in the past and what we want to do this year. Very seldom is it the same as before and it will change from day to day and sometimes it will change in the middle of the period. We are so close we go over and talk to each other. Jason is more flexible than I am but I've learned a lot about being flexible and I am more organized than he is; he has learned a lot about organization from me. Neither one of us has egos that need to be satisfied and we do real well together. It's one of those working situations you don't always find. (John)

Team Procedures. The team began the year meeting formally once a week before school. A fairly strong norm had developed over their three years as a team that their individual planning period, although scheduled at the same time, would not be used for team meetings. By the end of the year, however, this norm had altered to allow for short, rather spontaneous, meetings during planning periods. The team leader said:

The nice thing about the group this last year, if something came up and I had to see them, I didn't feel badly about seeing them in the hall and saying I needed to five minutes of planning time--that planning time is precious.

Formal team meetings by the end of the year had dropped to every two weeks or less frequently. Two team members expressed the feeling that meeting more regularly would be desirable goal for the next year to help the team function more effectively. The principal also expressed a concern over this drop in regular team meetings and felt that their

meetings had become "perfunctory." The team followed a specific and pre-planned agenda for team meetings.

Role Responsibilities. Sixth-grade team members felt their major responsibilities to each other as team members lay in team maintenance functions rather than in curriculum: "to communicate effectively and support each other" (Sara); "to share responsibility and do my part" (John); to give a different perspective and find a common ground even though differences exist" (Jason). They saw their team roles and responsibilities in very individual ways, which is illustrative of the diversity they felt as a team strength. The team leader felt a responsibility to aid and assist team members in acquiring appropriate materials for them, providing school-wide information, doing the organizational work required for team activities, and to generally keeping people on track.

Teamness

Question 2: How do team members define teamness as it operates and what elements contribute to teamness?

Definition. Teamness here is defined as that glue that holds a team together, that element that transforms a collection of individuals into a cohesive unit that develops a team identity, a sense of belonging and community, and a spirit of collaboration, cohesion, and cooperation.

Collaboration. Interdisciplinary team organization supplies a structure for joint decision making and a forum

for making better decisions than could be accomplished by teachers individually.

I see teaming as a logical process of four minds put together are better than one. It happens in just about any other business setting in the world and its about time it happens here. It makes a lot of sense. (Jason)

The team applied a number of adjectives to itself when describing their working relationships: "positive," "friendly," "challenging," "cordial, not tense," and "learning from each other." "We strive to learn to do different things;" "we can be businesslike." "We work through things even if there is a misunderstanding;" when we disagree we all speak up."

Team meetings were a relaxed give and take of ideas. Although the team leader moved through the agenda in a business-like fashion, items were introduced with such phrases as, "what do you think about . . . what shall we do if . . . and are there other concerns? . . ." Discussions were lively with all members participating by asking questions of each other, clarifying information for each other, taking the initiative to raise concerns about their students or classes, and contributing ideas to solve problems or decide on a course of action. Team members described each other as supportive, caring and thoughtful. Team members complimented each other during meetings ("you did a good job on that" and showed appreciation for each other's efforts ("thank you for doing that extra work").

Team members did not always agree. In a discussion about an up-coming field trip for sixth graders, two members wanted to deny the trip to a few students who were failing a class. One member gently but insistently reminded the team they may not have that option and to check with the principal. "When we disagree, we all speak up. There's no back stabbing." Decisions are reached by consensus through informal discussion.

The person who has the most ownership of that particular item gives their spiel and hears opposing points of view; then a decision is made. But quite often it is not a "thou shalt do." I've never felt I have to do or enforce something set upon by the team. It is more of a guideline, which I think is good. So decisions are made by consensus or you just sort of walk away with an impression of what is to happen or someone says "O.K. this is what we understand what is going on." (Jason)

Yet this team member feels a strong commitment to act responsibly toward other team members:

I have freedom to do things but within a boundary of responsibility I have to other teachers. The boundary is that I am answerable to other people who are also responsible for sixth graders and that needs to be considered in plans I have. Although there is not always agreement, there is a respect for contrasting points of view and a willingness to listen. We're pretty open about thinking, "well, that's where you're coming from." If there is a misunderstanding it is taken care of; there are no big egos and we function well together. You can tell there is a lot of respect for each other. There are some people who don't care so much what you care about--not that either side is right but that there may be some common ground here. I have benefited as much by moving closer to another person as someone moving closer to me. (Jason)

"We work through things and not complain too loudly. When we disagree we speak up" (John).

Cohesion. A collaborative spirit of mutual respect for differences and a supportive, caring attitude has forged a cohesive sixth-grade team.

You're definitely not isolated. You've got four people working toward a common goal for the kids. You can share information which is definitely beneficial for the kids. We have access to one another's style of teaching--of other ways of looking at things which has been tremendous and beneficial--it opens up whole new worlds. (John)

A shared belief in their purpose as a team has built cohesion. "We have a common belief in the kids--everything we do is pointed to what is good for them" (John). Our shared philosophy is "what we want kids to be--productive citizens, trained for the job force, and kids who are thinking;" (Sara); "We care about kids--what happens to them outside the classroom affects them" (Mary).

The team felt that a high level of participation and energy from all team members had made them effective: "Everyone participates equally and no one slough off" (Sara); The young members have breathed life into us" (John). Jason felt that the amount of energy members put into the team depended on what needs were being met. For him, a primary need was receiving creative input. When he received creative stimulation from his teammates he felt energized: "If I get creativity from people, that's when I

get really involved. If its something on methodology or a point of organization, I tune out."

One example of team cohesion was illustrated when John had a concern over the decision making process of the site committee. Rather than letting him confront the principal alone, the rest of the team all went to support him. They felt that his was a concern for all of them and they did not want him to be singled out for his differing point of view. Although they disagreed with John's point of view, they felt he had a valid point which should be heard.

Communication. The team felt that one of its goals was communicating with each other.

You're all on the same tract and all aware of any student that needs special attention. I think that's the main goal for teaming. No one can tell you how to teach but you can get better in the school how to communicate with each other. (Sara)

The team leader was "good at communicating information from and to the site committee on school issues." She provided written agendas, team notes, and took responsibility for seeking clarification and help for the team from the principal and support staff.

Although communication was mostly "positive and open" two concerns emerged that had not been aired and solved by the total group. One was a need to be honest with each other about expectations team members had of each other. This seemed to be directed particularly to the area of team planning for integrated interdisciplinary thematic units.

The other concern was a level of frustration with what this team member called the "bitch factor" and a feeling that the team needed to establish ground rules for venting negative feelings (about school-wide issues and frustrations) during team meetings.

Teacher Affective Outcomes

Question 3: How do ITO teams affect teachers' attitudes about their levels of satisfaction, efficacy, and stress as they relate to teaching?

Satisfaction. In a quantitative question, "On a scale of one to five (one being low and five being high) how would you rate your overall satisfaction with teaming," three members said "five" and one said "four," indicating a high degree of satisfaction with teaming. Receiving psychological, emotional and professional support from teammates was an important factor in creating satisfaction. Team members appreciated "sharing the work load and sharing the responsibility and being able to tap the diverse strengths of each other. "If you have a bad day there is someone to listen to you and understand. You have the group to share those frustrations and those high times" (Mary). "A very important function of the team is to say 'hey I'm having problems. Am I crazy or what' or 'hey this is really neat'" (Jason). Teaming supplied an emotional connection. "I enjoy not being by myself in the classroom. We go into

each others' classrooms during the day. I enjoy being with people that have a positive classroom" (John).

Team members also received professional satisfaction from teaming: "I think it's primarily an emotional, intellectual connection with another adult who is involved in the same line of work you are" (Jason); "Teaming keeps me positive and keeps me realizing that there is so much to learn about teaching--the different perspectives" (Sara).

Teaming also provided creative energy to the sixth-grade teachers: "It's exciting to have someone to bounce ideas off;" "I've garnered quite a few creative ideas hearing what other people are doing." Teachers felt teaming made their jobs easier because they were able to share the work load and the responsibility for their commonly shared group of students.

Efficacy. Efficacy is the extent to which teachers believe they can affect student learning. All members of the team felt that teaming helped them to be better teachers for a variety of reasons which included:

- seeing kids in new ways and dealing with them differently as a result of shared information and mutual problem solving about troubled students.

- being encouraged to try new things, see different perspectives, and learn different teaching styles.

- receiving and generating creative teaching ideas within the team.

- building more positive classroom climates as a result of positive peer support that allow for better teaching.

- co-planning units within shared subject matter areas that tap each other's strengths, experiences and creative ideas.

Stress. All team members agreed that teaming reduced overall stress, but this accolade was not without qualification. "Teaming takes more time, but it's worth it" (Mary). "There is stress in working together and thinking of others--in some ways it's easier to be accountable only to yourself" (John). "Sometimes it increases my stress because the team brings my attention to a problem I hadn't been aware of" (Sara).

One issue of teaming that concerned the sixth-grade team was the problem of isolation from the rest of the school. Since they had their planning period only with their own teammates, they felt it was a problem to connect with other staff members. This problem was alleviated somewhat when the principal began having bi-monthly faculty meetings rather than once a month. However, there was the perception that all the teams were going in their own direction and there does not seem to be building cohesion on such issues as BASICS and discipline. One team member felt this was very negative and used the terms "teamy" and "teaminess."

One negative impact that I'm seeing is we have a sixth-grade team, a seventh-grade team, and an

eighth-grade team and it's getting a little competitive and weird. The move is to meet with your team and not the whole staff. I'm feeling a whole lot of connection with people at my grade level and a whole lot less with the staff.

By the end of the year the principal, Kevin Pine, also realized this had developed into a problem.

We have to connect with the whole school. The whole thing has to come together. It can't be just the sixth-grade and the seventh-grade and the eighth-grade teams. But we're working toward some common theme.

Teacher Behavioral Outcomes

Question 4: How does an ITO team structure affect teacher behaviors in the areas of planning and carrying out curriculum/instruction and counseling/discipline?

Curriculum and Instruction. Collaborating on an interdisciplinary team resulted in some curriculum and instruction that would not necessarily have occurred had teachers been working in isolation. These areas are summarized below:

- regrouping students across classes to achieve greater cooperative flexibility for students and greater individual student success.
- developing and teaching a common set of high expectations for student work; reinforcing study and organizational skills across all core classes.
- developing a cohesive sixth-grade reading program (BASICS) and capitalizing on teacher strengths by moving

groups of students through different units offered by the different teachers.

- infusing individual teaching strategies with greater creativity due to ideas garnered from team sharing
- strengthening content area curriculum and instruction by collaborating on teaching units with content-area partners

In language arts-social studies:

- sharing materials
- co-planning team teaching units that resulted in a more project approach, greater student self evaluation of projects, greater student ownership of their own learning and level of self-confidence fostered through more independent work

In math and science:

- co-planning and team teaching science units, drawing on the strengths of individual teachers
- generating and sharing creative approaches to hands-on, concept science
- serving as resources to one another in the teaching of math, resulting in more successful student performance

Counseling and Discipline. Team collaboration and shared problem solving for students resulted in activities and plans of action for students which were consistent and mutually reinforced across Core subject areas. Some examples are:

- discussing and planning modifications for student IEPs.

- identifying students in need of further help; i.e. testing for IEPs, counseling and working with students receiving grades of D and F; working out behavioral modification plans with parents and students; coordinating with specialists.

- implementing a student recognition program for academic success and improvement, citizenship, and individual growth and achievement in selected areas.

The team felt that teaming had affected their students in positive ways. In fact, the principal also felt that the sixth-grade team had done a very good job of building team identification with the sixth graders. "They (the students) know we work together and are learning to be more considerate about what they say about teachers. They know we like each other. They know that even though Mary and Jason are opposites they work well together" (Sara).

It has allowed students to be more open. When they see the four of us working together, it gives them a good model. I see them as being more free to talk about themselves and about their teachers. John)

Kids benefit from all of us being aware of the problems they are having. We (the teachers) are getting along better and it rubs off on kids. We are modeling people being friendly to each other despite philosophical differences. (Jason)

Survey

The sixth-grade core teachers participated in a self-evaluation team survey at the end of the year. The questionnaire consisted of two parts. Part I asked participants to evaluate their team on 12 dimensions of general team functioning. Part II evaluated the degree and frequency that teams engaged in activities identified in middle school literature on effective interdisciplinary teams. Items are rank ordered. Functions and activities at the top of the lists indicate areas in which teams felt they frequently demonstrated these behaviors. The results are tabulated in Table VI.

Team Functioning. Rank order scores of the sixth-grade team indicated that the team felt they were functioning most effectively in the areas of civilized disagreement, trust, clear purpose, participation, and clear roles and open communication. Least effective areas of functioning were listening, creativity, informality, shared leadership, problem solving, and self-assessment.

TABLE VI
RIVERVIEW MIDDLE SCHOOL: SIXTH-GRADE
TEAM EFFECTIVENESS SURVEY

	POINTS	AVERAGE
<u>TEAM FUNCTIONING QUESTIONS</u>		
Civilized Disagreement	28	7.00
Trust	28	7.00
Clear purpose	27	6.75
Clear Roles	26	6.50
Participation	26	6.50
Open Communication	25	6.25
Experimentation;creativity	24	6.00
Listening	24	6.00
Informality	23	5.75
Problem Solving; Decision Making	23	5.75
Shared Leadership	23	5.75
Self-assessment	19	4.75
<u>TEAM ACTIVITIES QUESTIONS</u>		
Conduct team activities, field trips	27	6.75
Give student awards/recognition	27	6.75
Main a strong team identity	26	6.50
Meet regularly 1-3 times/wk.	25	6.25
Monitor academic & personal progress	25	6.25
Coord. with counselor & specialists	23	5.75
Conduct joint parent conferences	22	5.50
Keep team notebook with team info.	22	5.50
Coordinate homework, tests	21	5.25
Common expectations for work, grades	19	4.75
Have common discipline procedures	19	4.75
Have written team policies for students	19	4.75
Group students for specific purposes	18	4.50
Coordinate instructional objectives	17	4.25
Plan and use interdisc. units	17	4.25
Share & discuss teaching strategies	17	4.25
Conduct joint student conferences	15	3.75
Plan activities for professional growth	15	3.75
Conduct team help sessions for students	9	2.25
Use flexible time	na	0.00

Note: Range, 1-8; 1 = seldom; 8 = frequently; 4 participants

Team Activities. The team rated the frequency and degree to which they participated in a variety of team activities identified by the literature on effective middle school teams. The most frequent activities were giving student awards, conducting team activities and field trips, maintaining strong team identity, meeting regularly, and monitoring student academic and personal progress. The least frequent activities were grouping for specific purposes, coordinating instructional objectives, sharing teaching strategies, and conducting interdisciplinary units.

The team effectiveness survey indicated that the team most strongly provided for student needs and coordinating sixth-grade activities/field trips and student recognition. They were less likely to share and coordinate curriculum and instruction that impinged directly on their classroom teaching and their day to day instructional program.

Summary of Sixth-Grade Team

Structure. The sixth-grade team occupied a wing of Riverview which provided them a separate space to build a sixth-grade team identity. The team stressed its diversity in personality and teaching style. A strong belief in meeting the needs of their students united them behind a common philosophy. The team met regularly but their team meetings generally concentrated on routine matters of team activities, team field trips and student concerns. The team

leader took responsibility for organizational matters and represented the team on the site committee.

Teamness. The sixth-grade team had developed a high level of trust and support for one another and provided an environment of aid and assistance to a young, new teacher.

The team as a whole did not collaborate on interdisciplinary instruction, but strong partnerships along subject matter lines developed and these partnerships collaborated on a deeper level to plan curriculum and instruction.

Teacher Affective Outcomes. Teachers experienced a high level of satisfaction from working on this team. They derived emotional support from their teammates and professional support by working within partnerships in the team. Teachers also derived professional satisfaction from exchanging creative ideas and new practices with each other. The main stressor for the team came from their frustration in having to discuss site committee business during team meetings and the perception that teams were dividing the staff into little "teamy" compartments.

Teacher Behavioral Outcomes. Teachers developed close working relations with their subject-matter partner (science/math and language arts/social studies). As a partnership they shared materials, ideas, and resources to strengthen their overall program. Good communication and a high concern for student welfare enabled the sixth-grade

team to effectively collaborate to intervene on the behalf of troubled students.

RIVERVIEW SEVENTH-GRADE TEAM

After background information is presented on the seventh-grade team, data are organized according the guiding questions, summarized in Table VII.

TABLE VII
CASE STUDY FRAMEWORK: RIVERVIEW
SEVENTH-GRADE TEAM

TEAM STRUCTURE	TEAMNESS	TEACHER AFFECTIVE OUTCOMES	TEACHER BEHAVIORAL OUTCOMES
●organization	●collaboration	●satisfaction	●curriculum and instruction
●members	●cohesion	●efficacy	
●goals	●communication	●stress	●counseling and discipline
●procedures			
●roles			
●leadership			

Background

Although some of the teachers on the seventh-grade team had been loosely related on a seventh-grade planning team prior 1992-1993, the year of this study, they considered this to be their first year as a core team. For the first time they had a common planning period, they shared the same

wing in the building, and they shared a common group of students for language arts, reading, social studies, math, and science. The team consisted of three women and one man. The one male teacher, who taught language arts/social studies block, had initially wanted to be on the sixth-grade team and not the seventh-grade team. At the team's first meeting in July before school opened in September 1992, he was somewhat provoked that he had not officially been informed of his team assignment, possibly due to a misunderstanding generated by a change in principals that summer. However, by April, after having been on the seventh-grade team for a year, he said, "I really wanted to teach sixth grade, but teaching seventh-grade is all right. It's a little different than I expected but it's not that bad--it's all right." At the end of the year he had assumed team leader responsibilities when the team leader was on pregnancy leave. He saw his male status as somewhat of an issue on a team of three females. He tended to be the more quiet person on the team and saw himself as balancing and temporizing other points of view. "I think it does help to have a different sex outlook."

All four teachers on the seventh-grade team were veteran teachers; three had taught for over 15 years and the team leader had taught for 11. All four teachers had been at Riverview for over five years. The word that team members used most often to describe themselves was

"different." "We are different personalities and have different interests" (Liz). "We have balance with different strengths and weaknesses" (George). The team members also said they were "fun," "funny," "a little weird," "energetic, and positive."

Mabel was the designated team leader and represented the seventh-grade team on the site committee. She had one extra non-teaching period for serve as team leader and to perform additional school tasks as assigned by the principal. Mabel defined the duties of her team leader role as

providing liaison with the site committee,
planning for team trips and activities, setting up
parent conferences, and being a available to help
the team plan anything they wanted to do.

She had been planning to assist with curriculum and materials for team members, but the other team members had not requested her to do this. The other team members relied on and expected Mabel to take care of many of the organizational details--the legwork and the paperwork--associated with their team. Because she was also designated as activity director for the whole school, she felt under considerable time pressure to fulfill her non-teaching duties and felt that two additional jobs (school activities and team leader) were probably too demanding. However, Mabel accepted the team leader jobs as part of her role as team leader and would "feel guilty" if she did not do them. She felt that her role created a certain dependence of the

other team members on her. "I have a free period and I feel I should do more. If I didn't have a free period, they would have to pitch in more."

The team leader found her role as site committee representative to be a frustrating one at times:

We don't know what our job is. One member of the seventh-grade core team had a lot of animosity about the site committee. It wasn't animosity toward me, but it was driving me crazy. We had to get over that hostility. I finally had to say, "I have to be on this because no one else wanted to, so get off my back."

Structure

Question 1: How do teachers describe the structure of their team?

Goals. All seventh-grade team members mentioned that doing an interdisciplinary unit was their main goal for this year. A number of tentative starts had been made in this direction, but nothing came to fruition. Early in the year the team had become excited about doing an interdisciplinary unit centered on marine biology, culminating in a field trip to the Newport Aquarium. The team felt real enthusiasm while planning for this unit. Particularly while working with a consultant on an inservice day, they experienced joint planning on a very creative level. "We did serious decision-making when we were planning the coast trip" (Alice). When the principal and site committee would not authorize release time for the team to go to the coast to arrange a field trip, there was some resentment and the

project got "put on the back burner." "Since we got shot down on the coast trip, we let it slide and it's on the back burner" (George). The team leader felt that this project might have been too ambitious as a beginning project. In the spring, the team did preliminary planning on a smaller scale for an interdisciplinary unit on proportion. However, this plan did not get implemented either. "We haven't given up on it but everyone was at different places. I went ahead and did it in my room anyway" (Mabel).

By the end of the year the team recognized they had not done an interdisciplinary project. Various reasons were offered. "We don't carry through as we should. It takes a lot of planning time" (Liz). "In a 45 minute meeting time, it's pretty tough to put this together because we have the site committee feedback, schedule changes, and all these other things that get in the way" (George). The team leader felt that the proportion unit would have happened if she had been more forceful and directive, and had been firmer about getting commitment on deadlines. "If I don't do it because I am the team leader this year, it won't get done because everyone is in the mode of 'tell me what to do and I will do it'" (Mabel).

The science teacher on the team had put considerable creative energy into developing a plan for an interdisciplinary unit centered on a native gardening project for the school. Yet, she did this on her own. "I

really don't talk about this during team meetings. I'm not ready yet, I guess, but I assume it will be more a part of the meetings next year." A prevalent theme that emerged as reason for their inability to act on their plans was that this year was a preparation for next year.

I expect more out of the team, but this is our first year. We didn't do a lot I think we could do a whole lot better next year. This year we're just discussing possibilities; next year we'll get them done. (Mabel)

George felt that a team goal was to figure out:

how we function as a team--are we a group of people with a common planning and do our separate things or do we team teach?" How are we going to put this thing together that acts like a team.

George's comment appears to pinpoint a difficulty that the team was having; that is, that they were in the process of figuring how they were going to function as a team.

The team leader mentioned that student recognition and parent communication were two important goals for the team this year. The team had put considerable planning time and effort into seventh-grade recognition assemblies and awards, but one of their main ideas, to build a fun recognition program focused around a costumed school mascot, "Tuffy," never happened. According to her the problem with implementing this idea was that one team member did not agree this was appropriate and had quietly sabotaged the plans. "Next year Tuffy will come out of the closet. I thought it was a wonderful idea. That's where I will be more assertive next year--we're going to have Tuffy"

(Mabel). Although they made some progress toward the goals of recognition and parent communication, again there was a feeling of frustration in reaching the vision of the goal: "I think we could do a whole lot better next year" (Mabel).

In response to a question about what goals were most important to them personally, team members expressed a common desire to strengthen team ties that lead to collective action: "that we buy in and commit together" (Mabel); "that we work together well, making some group decisions" (Liz); "that we try team strategies and debrief them about the art of teaching" (Alice). George's concern was that the team had time to plan for team teaching without all of the team planning time being directed to site committee business.

Team Meetings and Agendas. Team agendas, researcher observations, and team member perceptions revealed that the team spent a majority of its meeting time on site committee business and discussing administrative concerns that had been directed to them. The team leader noted that site committee and administration-directed business did get done (i.e. providing feedback to the site committee, giving input on new scheduling options, making decisions about honor roll, and implementing a team recognition program) but at the expense of joint planning for instructional issues involving the team.

Interdisciplinary planning, though discussed, did not get implemented. At a planning meeting during the summer prior to the beginning of the 1992-1993 school year, most of the team meeting focused on planning a reading curriculum for BASICS--sharing ideas, giving each other direction from past experience, and proposing areas for coordination and thematic connection. However, during the year, teachers taught their BASICS classes individually rather than cooperatively. Agendas focused mostly on goals of the site committee, budgeting decisions, use of the computer lab, planning field trips and assemblies, and attendance and student concerns. Alice summarized by observing:

Quite a bit of our time is social--just sharing. It feels like a transition between the work day and meeting time. We probably spend one-fourth to one-half of our time working on different students we teach in common. Then there's one-fourth to one-half of the time spent discussing site committee where they're requesting information from us and we discuss and reach a team decision.

Team Procedures. The seventh-grade team established a weekly team meeting time in the faculty room during their common planning period. One norm of these meetings was the social aspect, a weekly ritual of bringing food and treats, of sharing both food, mutual concerns and of having a fun time in a relaxed atmosphere. By the end of the year these weekly meetings had grown to three to four times weekly when the team would make a habit to meet in "quasi-team meetings" to take care of "piddly things." The counselor began meeting regularly with the team, and his input from a

counseling point of view became valued by the team. For regular weekly meetings, the team leader established and worked through an agenda and provided an information flow to and from the site committee.

Role Responsibilities. Team members defined their team roles conservatively in terms of "doing their part." "I do what I'm supposed to do, holding up my end, being a responsible contributor and volunteering if they need help" (Liz). George defined his role as a balancing one, giving a different point of view and "not doing more or less than the others." Alice ascribed more definitive group task and maintenance roles to herself,

to give background information on new ideas and research I've picked up and to hear it from other people. I have chosen to summarize what we talk about and get the idea jelled to try to help us move along to the next stage.

The team leader felt responsible to get the jobs of the team done, to do the organizing for assemblies, field trips, and parent conferences, and to fulfill her responsibilities on the site committee. She had tried to get the team to implement an interdisciplinary unit on proportion and the Tuffy recognition program, but this did not happen. She felt that the team leader needed to be more directive, more assertive in setting deadlines to get these ideas implemented. "People seem to be saying, "I'll do it; just tell me what to do."

Teamness

Question 2: How do team members define teamness and what elements contribute to teamness?

Definition. Teamness here is defined as that glue that holds a team together, that element that transforms a collection of individuals into a cohesive unit that develops a team identity, a sense of belonging and community, and a spirit of collaboration, cohesion, and cooperation.

Collaboration. Team meetings were informal with a lot of lively, sometimes random conversation. "We get off the track a lot. We're all pretty bad that way. If nothing else, they're funny" (Mabel). Members observed that the meetings are "congenial" and "we get along well," but "sometimes there's a feeling we're not getting anywhere--that people aren't staying on the subject or are interrupting with personal stories" (Alice). George, as the only male, felt that "the women get to talking;" sometimes he would buy in and other times, "I'm out there saying, 'well, I don't know . . .'"

Team members reported some sharing between curriculum related partnerships. The two language arts/social studies block teachers agreed they were experimenting with different approaches and exchanging ideas and comparing notes. Eventually they hope to meld their ideas into a basic seventh-grade social studies/language arts program. They attended a conference together on curriculum integration.

The math and science teachers both mentioned that since they knew what the other was teaching, they had been able to support each other's instruction and extend students' learning across subject areas.

However, there was a feeling that much team growth still needed to occur. During this first year of the seventh-grade core team, team collaboration had not made much of a difference in each person's daily teaching and subject matter curriculum, reported team members. In response to the question, "Does teaming make a difference in your daily classroom teaching," Mabel said, "No, not yet. We're still not incorporated into each other's plans so we don't affect each other. George responded, "To be honest, no, not so far because we haven't done it yet. We've just met as a group but we haven't done anything as a group."

Although team members felt that they have not had a big conflict on the team, they reported several dysfunctional strategies for dealing with disagreements. If a disagreement had to do with site committee business, the team leader would write it down to take back to the site committee for discussion. All four seventh-grade team members reported incidents where they had openly expressed discontent or disagreement with one of the others in a team meeting. This appeared to have affected team cohesion. Another strategy one member in particular used to deal with team disagreement was to withdraw and be quiet about it.

Another strategy was to table the idea, "Sometimes we just have to go on. Sometimes you are never going to agree" (Liz).

Outwardly, there was an expressed willingness to accept a difference of opinion and styles. "We think, well, that's just the way he wants to do it" (Liz).

I respect her and even if she doesn't agree with some of this middle school stuff, she will go along. We are cooperative. It doesn't mean that everyone will jump and volunteer, but if they understand what needs to be done, they will do it. (Mabel)

However, unstated assumptions and unshared feelings appeared to interfere with open team communication and the team's ability to carry through with their plans.

Cohesion. The team expressed that they had a set of shared goals. "Our mission statement would say academics come first. We are strict as disciplinarians for learning and have the same high expectations for kids" (Mabel). "There are some philosophical differences" observed George, "but in large part we agree on discipline, curriculum and sports." However, these shared goals did not appear to energize them.

This team appears to be at an early developmental stage of building team cohesion. They have an emerging sense of commitment to each other and their team; they are still working on how to mesh their different strengths and interests to translate them into cooperative team action

that affects the everyday teaching and learning in their classrooms.

Communication. On one level the seventh-grade team operated as a "congenial group that gets along well." However, they expressed some communication concerns. Whereas two members felt everyone was a good listener, one member disagreed and felt that sometimes it was not comfortable to voice a difference of opinion. "There are not good skills of listening and paraphrasing, and judgments are made hurriedly." Members may also have lacked communication tools to move them from brainstorming into action. Alice commented, "I spend more time thinking about interdisciplinary projects, but I'm not sure how to go to the team and say, 'Here is an idea, and you do that and you do that . . .'" On the other hand, both Alice and Liz mentioned they feel comfortable sharing with other teammates student and classroom problems they might be having, checking to see if the problem was being experienced by their teammates. Such admissions require a certain degree of trust.

There was frustration that there was not an equal level of participation and energy expended by team members. In part, this was attributed to the fact that two team members had reduced class loads and they were expected (and accepted) greater team responsibility. On the other hand,

the lack of equal participation appeared to be more extensive. One team member expressed it by saying:

I think it would be good to get every team member involved; not everyone is involved. They don't seem to bring energy or willingness to an idea. I'm not in a position to say, 'Hey you're not bringing help here so you're outa here. (Alice)

But this lack of participation may be due to a misperception and a lack of communication about the norms of team expectations. Two members said they felt no pressure from the team to get a lot done this year. One person expressed it this way:

I think we pretty much figured it out that we can't do it all or solve it all so there's no point in trying. It's one of those unspoken things. We only have 45 minutes. It takes the sharpness out. We're not worried about a lot of things. (George)

Teacher Affective Outcomes

Question 3: How do ITO teams affect teachers' attitudes about their levels of satisfaction, efficacy and stress?

Satisfaction. In a quantitative question, "On a scale of one to five (one being low and five being high), how would you rate your overall satisfaction with teaming?," three seventh-grade team members said "three" and one said "four," for an average rating of 3.3. Two team members, both who had come from elementary school backgrounds, expressed appreciation for the camaraderie and feeling of connectedness supplied by the team. They both mentioned how

isolated and lonely they had felt when they first came to Riverview.

It [the team] is fun--you don't feel like you're out there by yourself. It's neat to talk to other people and find out what they're thinking and they all volunteer something. When I first came here I was in my own room doing my own thing. I never felt a part of any other sixth grade. It was a shock and I didn't like it. (George)

"Teaming makes a big difference in my attitude; it helps knowing there is someone to talk to if there are problems or to get ideas on things I can do" (Liz). Alice appreciated touching base with the other teachers about how kids were doing in their classes as a measure to evaluate her own classes, and Mabel found satisfaction in getting to know people (her teammates) in a different light. Liz and Mabel mentioned two professional areas of satisfaction. Mabel felt she had grown in her ability to work with three other people and conduct a group setting; Alice said, "In a team we are working on putting something together that works for kids so communicating about how kids are working in the classroom is a professional reward."

Efficacy. There was only limited evidence that teaming affected seventh-grade teachers' sense of efficacy, or belief that they could affect student learning. One teacher felt that sharing information about the background of student problems with her teammates helped her understand students' needs better. Another team member commented:

I think more about what I might do in an interdisciplinary project. I see students as more

than 40 minute learners. For example, because I knew what students were doing in math I could talk about math concepts in a graphing unit in science. It made the lesson richer. (Alice)

She continued to say that seeing what other teachers did served as a mirror to help her fine tune her own teaching. George admitted that teaming "has given me some things to think about. I finally tried to openly listen and see how I could work it my own way."

Stress. Three of the team members felt that teaming helped with stress by providing an opportunity to talk over problems and knowing other people were there to help: "I don't feel its all on my own shoulders." One team member, however, felt her views were not always heard or valued and she found that trying to get her views heard was at times stressful.

The site committee aspect of the team caused stress and frustration. There was a general feeling that site committee and school-wide concerns took up the major part of the team planning time. One person said she felt the school viewed the teams as more of an administrative tool than a vehicle for teaching and learning.

The separateness of the three core teams (sixth-grade team, seventh-grade team, and eighth-grade team) caused some stress. "We don't really have communication with the other teams. We hear from them at faculty meetings but I don't think we have a lot of contact" (Liz). "We can't discuss as a whole and hear the whole thing. We are separated as teams

and get different information. The fact that we're separate staffs is stressful" (Alice). George felt that there was a sense of team territoriality developing, that teams needed to be sensitive to:

stealing some other team's idea or activity. You have to watch yourself and keep your ear to the ground and see what other people are doing because you could run some things into the ground real fast. No one wants to get their thunder taken all the time. (George)

Teacher Behavioral Outcomes

Question 4: How does an ITO team structure affect teacher behaviors in the areas of planning and carrying out curriculum/instruction and counseling/discipline?

Curriculum and Instruction. The team had aspirations to move in the direction of co-planning interdisciplinary units, but after one year as a core team, these plans had not evolved far enough to evaluate them in terms of student outcomes.

However, teachers mentioned that sharing (but not joint planning) had resulted in the following effects on their teaching:

- enriched lessons resulting from reinforcing curriculum from other classes;
- creative ideas from the team to use in class;
- experimentation and comparison of teaching approaches with the goal of eventually developing a basic social studies program.

Counseling and Discipline. There were two areas of collaborative team planning that affected students in the areas of counseling and discipline. First, the team did implement a seventh-grade recognition program and planned award assemblies to build on and encourage student success. Second, team meeting time was used to share student concerns and discuss plans of action with the frequent input from the counselor and supported education teacher.

There was not a consensus among the seventh-grade team that students felt they were affected by a teaming structure. Opinions ranged from, "I don't think kids are aware we have a team," to "I think it is good that the kids see us together and we are a core and that we like each other. We tell kids we are a core and plan for them."

Survey

The seventh-grade core teachers participated in a self-evaluation team effectiveness survey in September 1993. The questionnaire consisted of two parts. Part I asked participants to evaluate their team on 12 dimensions of general team functioning. Part II evaluated the degree and frequency that teams engaged in activities identified in middle school literature on effective interdisciplinary teams. Items are rank ordered. Functions and activities at the top of the lists indicate areas in which teams felt they frequently demonstrated these behaviors. The results are tabulated in Table VIII.

TABLE VIII
RIVERVIEW MIDDLE SCHOOL: SEVENTH-GRADE TEAM
EFFECTIVENESS SURVEY

	POINTS	AVERAGE
<u>TEAM FUNCTIONING QUESTIONS</u>		
Informality	28	7.00
Participation	28	7.00
Open communication	26	6.50
Civilized disagreement	24	6.00
Trust	23	5.75
Shared leadership	20	5.00
Listening	19	4.75
Clear roles	19	4.75
Problem-solving/decision-making	16	4.00
Clear purpose	15	3.75
Experimentation/creativity	15	3.75
Self-assessment	13	3.25
<u>TEAM ACTIVITIES</u>		
Meet regularly 1-3 times/wk.	26	6.50
Conduct joint parent conferences	23	5.75
Keep team notebook with team info.	23	5.75
Share & discuss teaching strategies	20	5.00
Common expectations for work, grades	19	4.75
Have common discipline procedures	19	4.75
Plan activities for professional growth	19	4.75
Coord. with counselor & specialists	18	4.50
Give student awards/recognition	17	4.25
Monitor academic & personal progress	17	4.25
Conduct team activities, field trips	16	4.00
Main a strong team identity	15	3.75
Group students for specific purposes	14	3.50
Coordinate instructional objectives	11	2.75
Conduct team help sessions for students	11	2.75
Conduct joint student conferences	10	2.50
Have written team policies for students	9	2.25
Plan and use interdisc. units	9	2.25
Use flexible time	8	2.00
Coordinate homework, tests	7	1.75

Note: Range, 1-8; 1 = Seldom; 8 = Frequently; 4
Participants

Team Functioning. Rank ordered scores indicate that the seventh-grade team felt their strongest team behaviors were informality, participation, open communication, and civilized disagreement. In the survey, the seventh-grade team identified participation as their second strongest characteristic. In earlier interviews, however, team members had defined their participation role as "doing my part." According to the survey, they apparently felt that their team was upholding this standard of participation. However, according to interview and observation evidence, there seemed to be a reluctance to invest more than minimal energy and commitment toward working to implement team goals. Three team members had indicated that there was not equal participation.

In the survey the team rated open communication as their third strongest characteristic. Again a discrepancy seems to exist. In earlier interviews, two out of four team members stated a reluctance to express their honest views because they felt unsupported by the other members.

There was also an apparent discrepancy between the survey and earlier interviews in regard to the team's perception of civilized disagreement which they ranked as their fourth strongest behavior. Interview and observation evidence indicate that team members used several avoidance behaviors when confronting disagreements.

The discrepancy between perceptions expressed in the interviews and those expressed in the survey may be attributed to the passage of time. Team members responded to the survey three months after the interviews. The intervening summer vacation may have modulated earlier negative perceptions about participation, open communication, and civilized disagreement.

The seventh-grade team gave six categories a combined score of 20 points or less. In contrast, the sixth-grade team scored only one area with a combined score of less than 20 points, and the eighth-grade team scored no areas below a combined score of 20 points. The seventh-grade team perceived their weakest areas to be self-assessment, experimentation/creativity, and having a clear purpose.

Team Activities. The team rated the frequency and degree to which they participated in a variety of team activities identified by the literature on effective middle school teams. The highest ranking activities noted by the seventh-grade team in the survey were meeting regularly, conducting joint parent conferences, and keeping a team notebook. The lowest ranking activities were coordinating homework and tests, using flexible time, and planning interdisciplinary units. A general conclusion is that the team felt more successful dealing with routine activities and less effective in joint planning and coordinating curriculum and instruction. The teachers' classroom

activities, the day-to-day instruction, and curriculum issues were still in the domain of the individual teacher. Teaming, as yet, had not affected the classroom level of the teacher's work day. Interview and observation evidence also support this conclusion.

Summary of the Seventh-Grade Team

Structure. In team structure, team organization, and team leadership, the seventh-grade team was similar to the sixth-grade team. In contrast to the sixth-grade team, they expressed a team goal to plan and implement interdisciplinary units. However, they were unable to follow through with their ideas for interdisciplinary teaching. Their meetings were fun but not very productive. They spent a majority of meeting time discussing site committee business.

Teamness. At the end of the year, several members of the seventh-grade team expressed a need for a consultant in team building and team process. They had trouble coming up with a team process that resulted in action. Interview data revealed that team members had several concerns about the level of their team functioning; namely, listening skills, presenting and building support for an idea, equal participation, and communication of expectations and assumptions. Dealing with personality differences was an issue for the seventh-grade team.

Teacher Affective Outcomes. Despite concerns about the functioning of their team, the seventh grade teachers appreciated the camaraderie and feeling of connectedness supplied by the team. Interdisciplinary team organization also created stress for the seventh-grade team. There were several sources of this stress; namely, communication difficulties, the usurping of team planning time by site committee business, and a growing feeling of separation from teachers on the other teams.

Teacher Behavioral Outcomes. Teachers on the seventh-grade team had spent much of the year trying to figure out what and who they were as a team. They seemed to lack the resources to move toward their goal of planning and implementing interdisciplinary instruction. They, as yet, had not developed a program that affected the day-to-day, classroom level of instruction.

RIVERVIEW: EIGHTH-GRADE TEAM

Table IX serves as an organizer for the data on the eighth-grade team. The data are presented following background information on the eighth-grade team.

TABLE IX
CASE STUDY FRAMEWORK: RIVERVIEW
EIGHTH-GRADE TEAM

TEAM STRUCTURE	TEAMNESS	TEACHER AFFECTIVE OUTCOMES	TEACHER BEHAVIORAL OUTCOMES
●organization	●collaboration	●satisfaction	●curriculum and instruction
●members	●cohesion	●efficacy	
●goals	●communication	●stress	●counseling and discipline
●procedures			
●roles			
●leadership			

Background

This was the first year that the eighth-grade teachers were organized into an interdisciplinary core team, although a majority of them had formerly been primarily eighth-grade teachers at Riverview. The eighth-grade teachers' classrooms were more spread out in the building than those on the sixth- and seventh-grade teams. Although the team members frequently sought out each other during their planning periods, the science teacher was in a different part of the building, making team unity a little more difficult to attain. The team consisted of three men and one woman. All team members shared the responsibility for BASICS/reading for the eighth grade.

The eighth-grade team was a combination of seasoned teachers and relative "rookies." The language arts and science teachers had taught for over 20 years, and the social studies and math teachers were second-year teachers. This was the math teacher's first year at Riverview, and the team had participated in his hiring. The team viewed this combination of new and experienced teachers as very positive.

It was real helpful having Shirley and Dave who taught for a long time so they had a different perspective from a new teacher. I think Ryan and I avoided a lot of pitfalls because we benefited from their experience. They have commented that our newness and excitement helped them to catch their focus. (Bruce)

The team described themselves as concerned about each other and concerned about creating a successful eighth-grade program. Furthermore, they saw themselves as creative and "having a diversity of backgrounds which made it interesting" (Shirley). The math teacher saw himself as less linear than the others and being able to add a different perspective that offered variety. The team relied on the social studies teacher for adding a professional touch and for his computer expertise. The language arts teacher who was the only female teacher on the team had the organizational abilities that helped the team keep focused on its essential tasks. The science teacher saw himself in a supportive role. Although Ryan, the social studies teacher, was the team's representative on the site

committee, he did not have a free period for team duties. The team agreed that they shared the leadership role, with Shirley taking the initiative for many administrative and business-type duties.

Structure

Question 1: How do teachers describe the structure of their team?

Goals. The eighth-grade team saw its primary goal as focused on student learning, and they defined this mostly as a "process" point of view.

Our goals are more process which led itself to more freedom in planning and developing curriculum. One of my goals is to let the kids become better decision makers. Another is that they start to make the connection between their actions and consequences. Sometimes being able to be a team and maintain a team is an accomplishment all by itself. If our goals for the kids are process oriented, why shouldn't our goals for ourselves be process oriented. (Ryan)

The goals we worked on were a little ethereal--more qualitative. We wanted to demonstrate and encourage students to see the joy of learning, that learning is not work but learning is life. As a team we worked together to take curriculum (mostly BASICS) and apply it to the things that students would be able to relate to on a personal level. The goal was mainly to apply the curriculum to life experiences. (Bruce)

Yet, in addition to these process goals, the team, starting with their first meeting in August, 1992, had a shared goal of jointly planning and teaching eighth-grade reading instruction in BASICS. Unlike the teachers in the sixth- and seventh-grade teams who taught their BASICS

classes separately and individually after some initial planning, the eighth-grade team used BASICS as an opportunity for team teaching. What enabled them to forge a close working relationship required of team teaching was their adoption of a rotating structure for BASICS and using commonly taught teaching units. "We mainly operate as a team during BASICS. We plan what to do with the eighth graders during the reading program" (Shirley).

The eighth-grade class was divided into four groups for BASICS, and for much of the year the students rotated to a different teacher each day.

I would do a social studies lesson, David would teach a science lesson and so on, and we had the theme to tie it all together. Because we had the theme it was relatively easy to design the activities. (Ryan)

Although they experimented with other structures for BASICS during the year, the team felt this rotating structure was most successful. It gave them an opportunity to experiment with an interdisciplinary approach. Although they did not have time to restructure the curriculum in their other classes into an interdisciplinary format, the idea for extending interdisciplinary instruction grew as a team commitment and goal for the following year. Because they had achieved this success with interdisciplinary planning in BASICS, they developed a model which they wanted to build on for future joint planning of interdisciplinary units.

Team Meetings and Agendas. The team reported that meeting agendas "depended on the needs of individual students or working our way through committee work or curriculum things" (Ryan). However, they spent a major part of their time planning their BASICS units. "We're always discussing what we're going to do a week in advance" (David). In addition to planning BASICS and staffing student problems, team meetings were devoted to planning field trips and recognition assemblies, discussing building level administrative issues like new scheduling options, and going over materials that might be of interest to the team.

Team Procedures. The eighth-grade team established a regular weekly meeting during their common planning period. In addition to this, it was not uncommon for them to meet three or four times a week. "We're pretty free about meeting as often as we need to get this stuff done" (Ryan). On an informal basis, the team felt free to give and receive frequent help from each other.

It's been nice too, that if I as an individual feel a little lost and I need to bounce an idea off everyone else, I really feel good that I can approach them and they will say, 'sure I'll give up my planning time' and we'll talk it over. I've never felt that it's an imposition." (Ryan)

Team members commented how they frequently met spontaneously in the halls and chatted for the rest of their planning period.

Role Responsibilities. The team did not establish formal role differentiation. "We didn't ever sit down and

devise a formal plan for who was the facilitator;" rather it was a sharing of responsibility. "We all fill different roles at different times. Sometimes we're the chief and sometimes we're the Indian" (Ryan). Ryan was the site committee representative and served as the conduit for the site committee, but he did not have a free period for team duties as did the team leaders for sixth- and seventh-grade teams. Shirley assumed the role of taking care of administrative duties: "I know we have to get things done and so I write them down. We all take an active role. I wouldn't say anyone is a leader over others--we just work so well together" (Shirley). Ryan expressed his gratitude that Shirley fulfilled this role because he felt she had a knack for it and he was not good at it. The team recognized the strengths each brought to their group; Ryan added a professional/computer expertise, Bruce enjoyed stimulating the creativity of the group, giving a different perspective, and David was a supporter.

Teamness

Question 2: How do team members define teamness and what elements contribute to teamness?

Definition. Teamness here is defined as that glue that holds a team together, that element that transforms a collection of individuals into a cohesive unit that develops a team identity, a sense of belonging and community, and a spirit of collaboration, cohesion, and cooperation.

Collaboration. The collaborative spirit of the team was "real electric. We work well together and find the emotional as well as academic interaction has always been positive, encouraging, and informational" (Bruce). All the members of the team felt proud about the way they worked together, "I like the way we work together. I hear the other teams aren't working as smoothly. I think we're doing great" (David). They stated that they felt very relaxed around each other. "I think of us as being friends" (Ryan). During their team meetings and in comments about each other, they gave the impression of genuine liking and respect for each other. They frequently mentioned the supportiveness of the team as they were planning.

This positive working relationship empowered the eighth-grade team to be creative and try different things. "The personalities in our group just seem to click. Someone comes up with an idea and everyone builds on it, helps each other out, and gives each other ideas" (Shirley). Some of their team decisions (such as having pass/fail for BASICS rather than letter grades) were experiments that deviated from the practice of the other teams. They supported one another in these decisions feeling a sense of team autonomy.

Decisions are better made with four people making them. Things get talked out and we get to make decisions for just the eighth grade. We should be allowed to make decisions and function as a team even if it's not the same as other teams. (David)

However, team members did not always automatically agree about their course of action, but they trusted each other enough to voice disagreement. "I don't feel like I'm under any pressure to fall into line and agree all the time. It doesn't mean I won't go along but I'm never afraid to tell them if I don't agree" (Ryan). The team developed a process of open-mindedness and open discussion.

We've had some pretty wild ideas and everyone is willing to entertain the idea and let it stand or fall on its own. We don't have pecking order problems and no one is hurt if an idea falls because it was supported until it wouldn't play. No one sabotaged it, either actively or passively.
(Bruce)

Team decisions were reached by consensus. Once a decision was made, the work was divided up and the plan got implemented. With the BASICS curriculum, the team tended not to put their plans on the back burner indefinitely. Because the team had to depend on each other for teaching cooperative units, they had to go ahead to implement their ideas.

One of the team's success stories was the interdisciplinary unit they did on the holocaust. They found this unit successful, in part, because of the students' need to grapple with issues of prejudice and the relevance of the theme to students' lives. Also they found the unit successful because the students rotated through four teachers during the week which gave the students a different perspective on the theme each day. Working

closely together to plan this unit also helped to cement the team, "It got us talking" (David) and gave the team a goal and theme to plan around. It forced them to communicate frequently for daily planning.

The math teacher also mentioned how they dealt with a unit in study skills which had not worked well. What impressed him was how they handled the situation. Rather than giving up the whole unit as a bad idea, they discussed and analyzed to see if the unit was appropriate to students' interests, knowledge, and experiences. They then restructured the unit to try a different approach. When it did not work a second time, they ended it as gracefully as possible, feeling that rather than being a failure, the unit had not met the needs of the students or the teachers at that time.

Cohesion. The team developed a process of open-mindedness and open discussion.

We've had some pretty wild ideas and everyone is willing to entertain the idea and let it stand or fall on its own. We don't have pecking order problems and no one is hurt if an idea falls because it was supported until it wouldn't play. No one sabotaged it, either actively or passively.
(Bruce)

In the spring, the team was very anxious because they feared losing its two youngest members due to a district budget crunch and reduction in force. Bruce said, "If I can't be part of this team next year, I'm not sure I want to be a part of this district." The team attributed its feeling of

cohesion to three factors: (a) shared beliefs, (b) good communication, and (c) focus on curriculum goals.

The eighth-grade team felt that their common foundation of shared beliefs "is one of the things that makes us a strong team. Our beliefs and values are so close we can just talk about tailoring the curriculum" (Bruce). "As a group we are lucky. Our goals with the kids (learning as a process, learning is life, and connecting learning to students' lives) are just about the same" (Ryan). Bruce summarized their common philosophy as based on three assumptions:

- 1) We are good teachers; 2) The students are interested and want to learn; and 3) If something isn't working, we feel that we are not meeting either the students' needs or our needs.

Communication. In addition to their shared beliefs, the eighth-grade team also attributed their cohesiveness to good communication. The fact that they shared their feelings helped forge and strengthen their common philosophy. "We do a lot of expressing of how important we feel some things are and we really came together about the way we feel" (David). An often-cited aspect of their communication was an ability to listen to each other, "take suggestions and be flexible" (David). They trusted each other to be able to speak their minds. "We didn't feel we had to walk on eggshells and no one had to feel they had to defend themselves against attack. We have good chemistry and supported each other well" (Bruce).

Team members, especially the two young members, also felt comfortable in admitting to their teammates they wanted some help. Ryan asked the team to give him some feedback on how he had interacted with parents during conferences. He expressed respect for their ideas and was pleased with the help he received. Bruce mentioned, "When things are frustrating there's a feeling when you walked into the group you would walk away with a solution or would feel a whole lot better." The experienced teachers also got new ideas from their younger colleagues. There was an understood equality that team members could all learn from each other. "No one feels they have a corner on the market as to what works in education" (David). "We don't have axes to grind or banners to flail" (Bruce).

The team felt that there were high levels of shared participation and energy on the team. In fact, the team had discussed this aspect of their team among themselves.

At any given time someone feels like someone else is carrying more than they should but they say, "Yes, but you did more on that other unit, so don't worry about it." The participation is very equilateral and there is a consciousness of that and a concerted effort to keep it that way.
(Bruce)

One member felt that he had been less assertive than the others in championing some of his own ideas for the team to use. He felt he would help the team function even more effectively next year if he worked to be more assertive in promoting some of his curricular ideas.

Teacher Affective Outcomes

Question 3: How do ITO teams affect teachers' attitudes about their levels of satisfaction, efficiency, and stress?

Satisfaction. In a quantitative question, "On a scale of one to five (one being low and five being high) how would you rate your overall satisfaction with teaming," the ratings given by team members were 4.5, 5 plus, 5, and 4 for an average of 4.75. This team was highly satisfied with their team, but they were not complacent in terms of their growth. They felt that they had great potential and were just getting started in putting together some exiting interdisciplinary studies for the eighth graders.

The team found satisfaction in both emotional and academic arenas. Emotionally, they stated the importance to them of not feeling isolated, of being supported and encouraged, of feeling valued and of counting on friends in their team. Academically, they valued getting ideas from each other, hearing about and implementing different instructional techniques they learned from each other, and working closely to create shared interdisciplinary units in BASICS. Since a new schedule planned for the following year would not include BASICS, the team planned to strengthen its interdisciplinary approach in their content-area classes.

Efficacy. The team reported examples that suggested teaming created opportunities for them to grow in their

effectiveness as teachers. "It's helpful to me to check with Bruce or Shirley or David and ask, 'Do you think I was off base or how would you have it differently?'" (Ryan). Bruce commented that their combination of seasoned teachers and rookies was helpful to everyone. The rookies avoided a few pitfalls because they benefited by the experience of the veterans and the veterans gained new perspectives from the rookies. Co-planning BASICS gave the team a rich experimental base for interdisciplinary teaching. "It was amazing that we pulled in so many things that related to the holocaust unit" (David).

We've experimented in BASICS and we see how language arts, science, social studies, and math can be melded into a lot of experiences and next year we'll work harder on pulling those things off.

David brought up an interesting advantage to teaming. He said "teaming has given me credibility. The three others support my point of view. I know it's not just me that feels something is important." Their structure of rotating Basic students through four teachers classes in a week led Shirley to comment on how this strengthened her teaching: "We were teaching one lesson to four different classes so we could have a stronger lesson than having to teach a different one each day."

Stress. Eighth-grade team members felt that teaming helped in dealing with stress because they did not feel isolated--the team was an "oasis." For Bruce, a new

teacher, the team was a resource for ideas and served as a good mentor program. Ryan mentioned two sources of stress related to teaming. One was that it was difficult during the school year to plan the interdisciplinary units they envisioned. The fact that the school was going to an eight-period alternating day schedule the following year, giving teachers an extra planning period for teaming, could alleviate this stress. Also the social studies teacher mentioned that a drama unit in BASICS had been the source of some stress. He said, "I don't have a clue about drama and that was tough." He and the other team members had to rely on the expertise of Bruce for this unit and Ryan felt it would have been great had Bruce been able to teach the unit to the teachers before they had to teach it to the students. However, the team had been willing to support each other in trying something new and a little scary.

Teacher Behavioral Outcomes

Question 4: How does an ITO team structure affect teacher behaviors in the areas of planning and carrying out curriculum and instruction and in counseling/discipline?

Curriculum and Instruction. The main curriculum outcome in the eighth-grade team was their coordinated teaching of the BASICS/reading course. The students' exposure to multiple approaches and perspectives from four different teachers certainly would not have happened had the teachers not worked on a team. The team seemed to focus

most of its efforts on curriculum and instruction rather than on site committee or administrative business.

Counseling and Discipline. The teaming structure enabled the eighth-grade teachers to discuss and jointly solve problems of individual eighth-grade students. Their common philosophy enabled them to communicate to students a consistent view of student expectations.

The team felt that teaming had affected the lives of students. "I'd say definitely. It has created a sense of unity with the eighth graders which is real essential for a sense of stability" (Bruce). "Because of BASICS the students know we team (Bruce) and "when they recognize that four teachers have gotten together to teach a single topic, that is a very powerful statement" (David).

Survey

The eighth-grade core teachers participated in a self-evaluation team effectiveness survey in September 1993. The questionnaire consisted of two parts. Part I asked participants to evaluate their team on 12 dimensions of general team functioning. Part II evaluated the degree and frequency that teams engaged in activities identified in middle school literature on effective interdisciplinary teams. Items are rank ordered. Functions and activities at the top of the lists indicate areas in which teams felt they frequently demonstrated these behaviors. The results are tabulated in Table X.

TABLE X
RIVERVIEW MIDDLE SCHOOL: EIGHTH-GRADE TEAM
EFFECTIVENESS SURVEY

	POINTS	AVERAGE
<u>TEAM FUNCTIONING QUESTIONS</u>		
Informality	32	8.00
Participation	32	8.00
Experimentation/creativity	32	8.00
Open communication	31	7.75
Shared leadership	31	7.75
Listening	30	7.50
Trust	30	7.50
Clear purpose	27	6.75
Clear roles	27	6.75
Problem-solving/decision-making	25	6.25
Civilized disagreement	24	6.00
Self-assessment	23	5.75
<u>TEAM ACTIVITIES</u>		
Meet regularly 1-3 times/wk.	31	7.75
Main a strong team identity	26	6.50
Monitor academic & personal progress	24	6.00
Share & discuss teaching strategies	24	6.00
Group students for specific purposes	23	5.75
Give student awards/recognition	21	5.25
Conduct team activities, field trips	20	5.00
Coordinate instructional objectives	20	5.00
Coord. with counselor & specialists	17	4.25
Coordinate homework, tests	17	4.25
Common expectations for work, grades	17	4.25
Have common discipline procedures	17	4.25
Plan and use interdisc. units	17	4.25
Have written team policies for students	16	4.00
Use flexible time	15	3.75
Conduct joint parent conferences	13	3.25
Conduct joint student conferences	13	3.25
Plan activities for professional growth	13	3.25
Keep team notebook with team info.	11	2.75
Conduct team help sessions for students	10	2.50

Note: Range, 1-8; 1 = seldom; 8 = frequently, 4 participants

Team Functioning. Rank order scores of the eighth-grade team indicated that the team felt they functioned most effectively in the areas of informality, participation, experimentation/creativity, and open communication. These perceptions were congruent with evidence from interviews and observations. The team felt they were weakest in the areas of self-assessment, civilized disagreement, and problem-solving/decision-making. Overall, the eighth-grade team rated their effectiveness on general team functioning as very high. Seven out of 12 areas received a combined point score of 30 or higher in contrast with the sixth- and seventh-grade teams whose highest rankings were 28 combined points.

Team Activities. The team rated the frequency and degree to which they participated in a variety of team activities identified by the literature on effective middle school teams. The most frequent activities they reported were meeting regularly, having a strong team identity, and monitoring student progress. They reported their weakest areas to be conducting team help sessions, keeping a team notebook, and planning activities for professional growth. The team coordination of classroom-level curriculum and instruction activities fell in the middle range of effectiveness in contrast to the sixth- and seventh-grade teams which both rated coordination and joint planning of

curriculum and instruction in the bottom range of effectiveness.

Summary of Eighth-Grade Team

Structure. The eighth-grade team was more informally structured than the other two teams at Riverview. Their representative to the site committee did not serve as team leader; rather there was a shared responsibility for team leadership. This team increased its interdependence by having students rotate through their BASICS/reading classes on a daily basis. This structural arrangement encouraged the team to plan and implement interdisciplinary units because they depended on each other to do so. Their goal was student focused--to provide exciting learning experiences for students.

Teamness. One member described this team as an "oasis." They developed a commitment and enthusiasm for each other and their students which resulted in a spirit of creativity and risk-taking. They attributed their cohesive team spirit to a willingness to listen, to try ideas new ideas, and to seeking and giving advice and support from each other. Their blend of personalities, and the special combination of veteran teachers and newcomers formed cohesive unit from the first day.

Teacher Affective Outcomes. Eighth-grade teachers derived personal and professional satisfaction from their

team. They valued getting new ideas from each other and working closely to implement these ideas. They felt that teaming helped with stress; again, the team was an oasis. The stress they did experience as the result of teaming was due to a lack of time to plan interdisciplinary units and an occasional feeling of uneasiness when the team launched an untried project.

Teacher Behavioral Outcomes. By regrouping their students in new ways, and implementing an interdisciplinary BASICS/reading program, the eighth-grade team collaboratively planned a program that had an effect on their day-to-day instruction and on students.

CROSS-CASE ANALYSIS, RIVERVIEW MIDDLE SCHOOL

Three interdisciplinary teams at Riverview Middle School have been described. The three teams demonstrated many similarities due to their common history, environment, school culture, and school leadership. Differences also emerged. The purpose of this cross-case analysis is to describe these similarities and differences. Multiple sources of information provided evidence for the observations described in each case study and in the cross-case analysis. The same four questions used in each case study will serve as the organizers for this cross-case analysis.

Structure

Question 1: How do teachers describe the structure of their team?

Members. All three Riverview teams described the diverse personalities and teaching styles of their team members. The two most effective teams were also diversified in terms of experience, with a combination of veteran teachers and new teachers. The least effective and least satisfying team, according to member self-reports, was composed of four veteran teachers who had all been in the same building from 5 to 18 years. The ratio of three women and one man teacher on this team caused some feelings of isolation in the lone male. The issue of "teacher mix" on a team is an important one. However, it is not clear that equal numbers of men and women teachers are essential on teams. The most effective Riverview team had a mix of three men and one woman and reported no problems due to the gender mix. Gender mix on a team appears to be an issue that must be considered team by team.

An unfortunate aspect of the diversity issue at Riverview regarded ethnicity. Although the student population had grown to include approximately 30% Hispanic in recent years, the teacher teams showed no ethnic diversity to represent these students' cultural concerns and point of view.

Goals. Riverview had embarked on interdisciplinary teaming in a limited fashion two years previous to this study. Since the staff had initially adopted a goal for teaming, there had been no formal articulation of the goals and rationale for interdisciplinary teaming. Therefore, there was some variability in teams' responses to the question, "What is your perception of your school's goals for interdisciplinary teaming?" One common thread in all three teams was the idea that teaming would provide an opportunity for greater sharing among staff. They felt this sharing would result in several benefits. The benefits mentioned by at least two teams were:

- providing consistency for student behavior and expectations;
- providing an opportunity to plan interdisciplinary units;
- creating a climate of success, growth and family;
- providing an opportunity to collaboratively develop strategies to help troubled students.

The seventh- and eighth-grade teams both articulated goals to plan and implement interdisciplinary teaching across their respective curricular areas. The eighth-grade team, but not the seventh-grade team, was able to implement many of their ideas. The sixth-grade team did not have a consensus about integrating curriculum across five core subjects; however, they were working within partnerships to

integrate and jointly plan in the social studies/language arts block and in science/math.

All three teams were given the responsibility to jointly plan and teach a grade-level BASICS/reading program. The teachers on the seventh-grade team approached this as an individual teacher enterprise; the sixth-grade team taught individually but did joint planning and monitoring for the individualized reading portion of the program; the eighth-grade team jointly planned and taught an interrelated BASICS program.

Team Meetings, Agendas, and Procedures. All teams developed norms for meeting regularly, often more than once a week in both formal and informal situations. The following topics emerged regularly on all team agendas:

- discussing site committee and school-wide concerns;
- planning team field trips and a team recognition program;
- discussing student concerns;
- discussing possible interdisciplinary units and curriculum connections between core subject areas.

In regard to the use of time in team meetings, both the sixth- and seventh-grade teams devoted a major part of their time to discussing and deciding on site committee or administrative issues. The eighth-grade team was relatively less concerned about site committee business and spent most of their time jointly planning for their BASICS classes.

Role Responsibilities. All teams had a team leader who was also their elected representative on the site committee. Team leaders perceived similar duties as part of their leadership roles. These duties were:

- to serve as a conduit for site committee;
- to facilitate team meetings and planning agendas, take notes, and circulate minutes;
- to handle team administrative duties such as scheduling conferences, organizing field trips and recognition assemblies, coordinate testing.

The three teams developed three leadership patterns. The sixth- and seventh-grade teams expected their team leaders to shoulder more of the organizational and detail work for the team because they had extra non-teaching periods. However, the sixth-grade team felt they all brought an equal level of participation and energy to the team. The seventh-grade team felt ambivalent about the level of participation and energy on their team, and some members felt that not everyone was equally involved with the team. The seventh-grade team leader adopted a more authoritarian role and assumed her teammates expected and needed her to be more directive. The eighth-grade team shared leadership responsibilities.

Teamness

Question 2: How do team members define teamness and what elements contribute to teamness?

Collaboration. Teams differed in the depth to which they collaborated. Little (1990) described four levels of collegial planning: (a) story telling and scanning for ideas, (b) aid and assistance, (c) mutual sharing, and (d) joint work. All three teams showed evidence of operating on levels one and three, story telling/scanning for ideas and mutual sharing. In addition, the sixth- and eighth-grade teams showed evidence of giving aid and assistance. The eighth-grade team showed evidence of joint planning.

Cohesion. All teams reported their working relationships to be congenial and "getting along well," but two teams had developed stronger bonds of community, belonging, support, and genuine warmth and caring for one another. The eighth-grade team in particular felt a kinship with each other. They described the atmosphere of the team as "electric" and the team was an "oasis" and "our salvation."

One element that provided cohesion was a perception that team members shared a common philosophy. Teams all reported they shared common values and beliefs about education and teaching, but these values were different for each team. The sixth-grade team felt they were unified under the banner of caring, nurturing, and meeting the needs of the sixth graders. The seventh-grade teachers were unified in their belief in the importance of academics and high student expectations; and the eighth-grade teachers

shared the values of working together to promote a love of learning in students and to make the curriculum relevant to their lives.

Communication. The level of open communication differed in teams. The two teams with the highest levels of satisfaction reported they worked out differences and were able to come to consensus and resolution. The team with the lowest level of satisfaction expressed some difficulties in communication. The one man on the team expressed communication difficulties with the three women team members. When disagreements occurred in their team, they used several avoidance strategies which included taking disagreements to the site committee, remaining quiet, or tabling the issues indefinitely.

Teacher Affective Outcomes

Question 3: How do ITO teams affect teachers' attitudes about their levels of satisfaction, efficacy, and stress?

Satisfaction. Teams differed in their overall satisfaction in teaming. The sixth- and eighth-grade teams reported average ratings of 4.75 (on a scale of one to five, one low and five high). The seventh-grade team reported an average rating of 3.3. All teams reported that their primary satisfaction in teaming came from a feeling of belonging, of being less isolated in teaching, and in having others with whom to share frustrations and successes. The

two teams that reported the highest over-all satisfaction also derived professional satisfaction from their teams, including learning from each other, getting and giving creative ideas, and joint planning that resulted in valued student outcomes.

Efficacy. There was some evidence that teaming affected teachers' attitudes of self-efficacy, or feelings that they were effective teachers. To different degrees, the teams reported that teaming helped them to be better teachers for the following reasons:

- Seeing students in new ways and dealing with them differently as a result of shared information and mutual problem solving about troubled students.
- Being encouraged to think about and try new approaches, see different perspectives, and make preliminary connections among various content areas.

The combination of new teachers and seasoned teachers on the sixth- and eighth-grade teams stimulated creative ideas, sharing, and learning new perspectives from one another on those teams. Joint planning in the eighth-grade BASICS and in sixth-grade block and science gave teachers new insights and techniques that they felt strengthened student learning.

Stress. The effect of teaming on stress was similar in all teams. Teaming reduced stress by giving teachers a feeling of belonging and shared responsibility. Teachers

did not report that teaming reduced the stress of meeting students instructional needs or reducing the stress of planning and teaching the day-to-day instructional program. All teams indicated that one source of stress was a concern that grade-level teaming was isolating teachers from other grade levels.

Teacher Behavioral Outcomes

Question 4: How does an ITO team structure affect teacher behaviors in the areas of planning and carrying out curriculum/instruction and counseling/discipline?

Curriculum and Instruction. In the sixth- and eighth-grade teams, there was some alteration of curriculum and instruction that resulted from team planning. The specific changes which these two teams reported were:

- regrouping students for more effective instruction;
- developing a cohesive BASICS/reading program for the students in their teams;
- receiving valued feedback from teammates that resulted in better instructional and educational decisions;
- infusing individual teaching strategies and approaches with greater creativity as the result of creative sharing.

Counseling and Discipline. According to the middle school vision, one purpose of interdisciplinary teaming is to help create a home base for students who see many different teachers during the day. Teams allow teachers to

collaborate about students they see in common to try to meet individual student needs, provide a consistent approach to helping them achieve success, and understand and nurture students. In all teams at Riverview, team collaboration and shared problem solving for students resulted in plans-of-action aimed at meeting student needs and enhancing their success. In addition, all teams planned and implemented a team recognition program to reward and encourage student success in a variety of areas.

Ten out of 12 Riverview team members felt that their teaming structure provided a visible and potent model to students. Team members felt it was important that students saw them planning and working together as colleagues even when they were very different as individuals and teachers. Many team members expressed the view that their modeling of cooperative planning reinforced their classroom work in cooperative learning.

Summary

George, 1982, described four stages of growth through which teams move (though not necessarily in linear order). These stages are:

1. Organization: developing focus through common procedures and policies.
2. Community: developing a spirit of belonging, community, and commitment.

3. Joint planning/team teaching: collaborating on curriculum and instruction and implementing an integrated curriculum.

4. Governance: sharing in school-wide decision making for the team.

All three Riverview teams were primarily engaged in stages one and four during the year of this study. They were defining themselves as teams and sharing in school-wide decisions by providing feedback to the site committee. The sixth- and seventh-grade teams particularly felt that the heavy time commitment for discussing school and site committee issues in their team meetings (governance) distracted them from group planning for teaching and learning. The eighth-grade team, by choice, did not place as much importance on site committee issues. Instead, they expended most of their team time and energy on joint planning curriculum and instruction. The sixth- and eighth-grade teams engaged in more joint planning. They also reported a greater feeling of community, caring, respect and friendship for one another and a higher level of overall satisfaction. The higher levels of community on the sixth- and eighth-grade teams seem to be attributed to a combination of personality factors, explicit attention and sensitivity given to team maintenance functions, and a perception of shared and equal participation.

CASE STUDY OF GREEN VALLEY
MIDDLE SCHOOL

Data Collection

Multiple sources of evidence were used in this case study to collect the data relevant to the questions of the study. Five sources of evidence provided data for this study: documents, structured interviews, key informant interviews, direct observation, and questionnaires.

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Table XI serves as an organizer for the data on Green Valley Middle School. The data are presented following background information on the eighth-grade team.

TABLE XI

CASE STUDY FRAMEWORK: GREEN
VALLEY MIDDLE SCHOOL

TEAM STRUCTURE	TEAMNESS	TEACHER AFFECTIVE OUTCOMES	TEACHER BEHAVIORAL OUTCOMES
●organization	●collaboration	●satisfaction	●curriculum and instruction
●members	●cohesion	●efficacy	
●goals	●communication	●stress	●counseling and discipline
●procedures			
●roles			
●leadership			

Background

Green Valley Middle School opened as a new facility in September 1992. It had been carefully planned to implement a middle school philosophy. The planning for Green Valley had begun several years earlier when the district, in preparation for opening a new middle level school to meet population growth, began exploring and researching middle school practices. At the time, two traditional junior high schools were in operation. They would also be restructured into middle schools when Green Valley was opened.

In December 1990, the Board of Education adopted several middle school policies which clearly set the direction for the new middle schools. Board policies outlined a philosophy and direction for interdisciplinary teaming, a home base program, heterogeneous grouping, activities and athletics, and a core curriculum for middle schools.

The policy on interdisciplinary teaming stipulated that "middle schools should strive to create teams of teachers and students who work together to achieve academic and personal goals for students." In summary, the goals of the teams were to: (a) reduce student anonymity and isolation, (b) provide common planning for teachers of different subjects in order to give students consistent standards and expectations for achievement, (c) to integrate curriculum, and (d) provide a support group for teachers. In addition

to this rationale, the board policy created a model for interdisciplinary teaming at the three middle schools. Schools would be divided into schools-within-schools (SWS) and each SWS would be further divided into interdisciplinary teams (IDT) of core teachers for math, science, and language arts/social studies block. Each IDT would share a common group of students, common planning time, common instructional blocks of time and common space. Interdisciplinary units of instruction would be implemented on three levels: building-wide, school-within-school, and interdisciplinary teams. The policy also recognized the danger of competition among SWSs and IDTs stipulated that buildings should monitor and eliminate competition which interfered with the educational process.

In 1991, a planning group, consisting of the principals, team leaders, and counselors was selected to begin planning for the new middle schools. The planning team discussed philosophical issues, shared ideas, and established guidelines at regular meetings and at two retreats. Specific expectations for teams were developed along with agenda formats and curriculum planning formats for all school policy and for all teams.

In January 1992, a process began to identify particular district teachers for specific teams. Teachers applied for new positions at Green Valley. After acceptance there were school-wide team building activities to build a cohesive

faculty. Then teachers were to submit a preference sheet listing staff members with whom they felt they could not work, as well as teaching preferences and teaching strengths. Assignment of teachers to specific teams was based on experience, teaching preferences, the school they were coming from, and their strengths. The team leaders gave input to the selection process and the principal made the final choices. One Green Valley staff member, who was delighted with her placement, said, "It was the principal's planning. She knows what she is doing and she knew who she was putting together and she knew who would work well together" (Charlotte).

Three schools-within-schools with 15 teachers in each SWS were identified for Green Valley. Teams began meeting regularly in the spring of 1992. The district gave four and one-half days for inservice and planning during which the elementary and junior high schools were closed so teachers could meet with their new teams.

We had extensive meetings covering everything about the middle school. It gave us good preparation. We came in feeling we knew the curriculum and we knew how we were going to organize our day. We knew we were going to be in mountains (the name Green Valley gave its SWS's). We tried to learn as much as we could about the concept of the middle school. The principal did a really good job with the staff and inservice. (Charlotte)

Team building was an on-going activity in these meetings. One staff member attested to the success of these team building activities:

We've worked hard to make friends. Before any of us even started we would get together and play those little bonding games which everyone thinks are stupid, but they really work. You end up being friends with people. It's not just hand-picking people for a new school but its those social outings too (that are important). (Lynn)

Teachers attended workshops which mostly provided background and information on middle school practices. Teams received inservice and discussed such issues as, "What is teaming?" "What is an advisory program?" No formal training was given to teams on the group process of teaming.

GREEN VALLEY MIDDLE SCHOOL:
MT. HOOD SWS

This case study focuses on the Mt. Hood SWS, one of three schools-within-a-school at Green Valley during the 1992-1993 school year. All of the teachers who were interviewed had more than five years of experience. Two came from an elementary school background, two had transferred from one of the former junior high schools, and one was returning to teaching after six years in another career.

Background

Green Valley Middle School was designed and built to implement a SWS concept. Each SWS, named after a famous mountain, had its own wing with classrooms arranged around a central teaming area. The full-time team leader had an open-area office in this space. In this common team area,

there were also storage cabinets and shelves for team supplies and books and tables for team meetings and student use.

Approximately 250 sixth-, seventh-, and eighth-graders were assigned to the Mt. Hood SWS, and they would remain in the same mountain during the years they spent at Green Valley. Sixth grade was taught in self-contained classes. Seventh- and eighth-grade students had their block class (social studies and language arts) and science within their mountain. Since math was ability grouped, students may or may not have had their math class in their mountain. Students took their elective classes and P.E. outside their mountain. The school day was organized into five 75 minute periods (one devoted to lunch), plus a 30 minute daily period with an advisory group. Four days a week students had an alternating schedule for all classes except for lunch, block and advisory. Pauline Sharp, the full-time team leader, had been part of the middle school planning team for several years. She had considerable experience and expertise with middle level schooling and had background in curriculum integration, having been instrumental in developing an integrated block program at the junior high school several years earlier.

The Mt. Hood SWS consisted of three sixth-grade teachers, two block teachers (one seventh grade and one eighth grade), one science teacher, and one math teacher.

Four electives teachers were also assigned to the Mt. Hood SWS. Teachers had a 75 minute daily planing period. Seventh- and eighth-grade academic teachers taught just one subject. Mt. Hood also had a full-time learning specialist. The TAG teacher, who served the whole building, worked regularly with Mr. Hood students and teachers. Although elective teachers were part of the Mt. Hood SWS, they were not included in this study because they played a peripheral role in much of the interdisciplinary planning of the teachers. This case study targets the seventh- and eighth-grade academic teachers who met and planned in interdisciplinary teams.

The academic teachers actually served on three different teams. The first team consisted of the entire mountain of 15 teachers; the second team was an interdisciplinary team (block, science, and math teachers) who shared the same students, and the third team was a subject-matter team. The subject-matter teams consisted of the three or four teachers who taught the same subject. They were building-wide teams; that is, teachers from all three SWSs worked together on the subject-matter teams. The subject-matter teams did not share the same students but they did teach the same curriculum.

At Green Valley, it was determined that subject-matter teams would have common planning periods to allow teachers to meet and plan curriculum and daily lesson plans with

their subject-matter colleagues from the other two mountains. For instance, the three eighth-grade block teachers from all three mountains met weekly during their common planning period. The school leadership had decided to give the common planning time to the subject-matter teams rather than the IDT teams because teachers were most concerned about preparing their day-to-day curriculum. The IDT teams met in the mornings at 8:00 a.m. for 45 minutes. Science and math teachers belonged to both a seventh and an eighth-grade IDT team. Mt. Hood's science teacher described the meeting schedule:

Toward the beginning of the year I had meetings four mornings a week and it simply got to the point where it was overload. The science and math teachers especially had it bad because we have both seventh- and eighth-grade students. On Monday we had an eighth-grade IDT, on Tuesday a staff meeting, on Wednesday a seventh-grade IDT and on Friday we had a mountain meeting and on Friday afternoon we had a science meeting. It really started to take its toll. (Ben)

However, he recognized that the meetings were necessary because there were so many issues to decide in launching a new school. Eventually, to reduce this heavy meeting load, meetings were shortened and mountain meetings became more infrequent.

Structure

Question 1: How do teachers describe the structure of their team?

Goals. Teachers on the IDT and subject-matter teams shared a clear vision of their schools' goals for teaming. The goals were focused on two student outcomes. The first goal was to provide greater curricular cohesion and coordinated learning through interdisciplinary units. "We try to enhance what the students are learning in one class with another so everything is together and makes more sense to students" (Lynn). The second goal was to talk about and plan for the needs of individual students. "We are doing our best for kids. Our concerns are for them" (Angela).

In addition to these two overarching goals for teaming, team members expressed various goals that were important to them personally. They expressed these more in terms of teacher behaviors than in student outcomes: "Most important is that everyone listen to each other, that we're friends and get along--that we are respectful and kind to each other" (Lynn); "Just putting heads together and coming up with a wealth of ideas that we get by working together" (Charlotte); "Knowing how a student of ours is doing in another class and sharing information about students" (Angela); and "that we had the same plan for discipline and student expectations" (Ben).

Team Meetings and Agendas--IDT Meetings. The IDT teams met once a week before school. The goals of the IDT teams were to discuss student issues and concerns, coordinate

homework, tests, etc. and share/integrate curriculum where possible. The emphasis came to be placed on student issues.

We focus mostly on student concerns--students that are having difficulties and why--what we can do to accelerate growth. We haven't spent nearly as much time on curriculum as we have on student management. (Ben)

During meetings, teachers discussed the learning and behavior of various students whom they shared in their classes. They mutually decided on plans of action to ameliorate these students' difficulties. Some IDT time was also devoted to planning and coordinating two all-school themes one on "mountains" and one on "exploration." One IDT member also reported that his IDT team previewed for each other what would be happening in their classes during the week so they could coordinate things like testing.

However, during the year, the IDT teams agreed on emphasizing student issues rather than on integrating curriculum. The team members offered several reasons for this decision. One reason was the tremendous demand for teacher planning time the first year of a new school. "All our efforts go to our classes and there is no time to integrate with math and science" (Angela):

Everyone feels closely tied to their curriculum and having to get that done for the year, whether its due to what is tested or state mandates. The flexibility of what is to be taught isn't there. (Ben)

Another reason was the difficulty in coordinating teaching units. Unlike the subject-matter teams who began meeting

early, the IDT teams did not plan together before school started. Consequently, once the year began, "everyone had their year planned and no one was in sync" (Angela). "I don't think it is the teachers' unwillingness to do it as much as the teachers feeling they have to have things taught and to coordinate with everyone else just isn't possible" (Ben).

Team Meetings and Agendas--Subject-Matter Teams. The agenda for subject-matter team meetings was focused almost exclusively on planning subject area classes. For instance, the seventh-grade block (language arts/social studies) teachers from the three mountains met weekly during their common planning time to collaboratively plan their next week's lessons and begin planning for upcoming units. At the beginning of the year they had outlined the units that would be taught each quarter. Each teacher brought her lesson plan book and together they would plan the day to day activities and share materials for the unit. One seventh-grade block teacher described their subject-matter team meeting this way:

We're all using the same curriculum that has to be taught at the end of a certain amount of time, so we might as well get together and plan it together. We order our films together brainstorm vocabulary words of the week, and plan our spelling. (Charlotte)

Twice a month SWS (mountain) meetings provided an opportunity for the entire mountain, i.e. academic teachers, elective teachers, and support staff, to meet and share a

wider range of concerns. Pauline, the team leader, set the agenda and facilitated the before-school mountain meetings. Agenda items included sharing between IDT teams, discussing announcements and school-wide concerns, and sharing successes. For instance, at one meeting in December, the teachers discussed some problems and brainstormed suggestions about students' lunch time activities. Also, the team leader gave some information about supply orders and a service project on which they had been working. Finally, a large segment of the meeting was spent in sharing positive suggestions and compliments about classroom management issues.

Team Procedures. A strong norm was established that IDT and subject-matter teams meet weekly. One team member mentioned there was tolerance for a teacher missing an occasional meeting.

We realize we can't make every single meeting. We can't do everything and be everywhere all the time. If someone can't make a meeting we take notes for them and don't question and judge.
(Lynn)

The IDT teams met in the common team area before school. The facilitator circulated the agenda ahead of time, listing the students who would be discussed that day. A recorder kept track of minutes and plans of action in a team notebook, but all team members also took notes.

The role responsibilities for IDT meetings were rotated on the seventh-grade IDT team, but on the eighth-grade team

they were assumed by the eighth-grade block teacher. She has assumed this responsibility since the math and science teachers have to attend two IDT meetings. The team leader played a fairly prominent role as coordinator in the IDT meetings. "Pauline gives us information about students. She pretty much coordinates things and our feedback moves back and forth through her" (Ben). However, at the end of the year, she was trying to transition out of the role as facilitator. The learning specialist for the team and the TAG teacher also attended IDT meetings to provide additional information on students and help determine plans of action to help students succeed.

The subject-matter teams rotated meeting places. "Weekly meetings are held in different rooms each so everyone feels they're important. No one is the head honcho." (Lynn). Although subject-matter teams are supposed to have the same structured team roles as the IDT teams, they typically do not. It was a more free-form spontaneous session and a natural, equally shared leadership seemed to have developed. Some regular procedures evolved; teachers brought their daily lesson plan books, someone typed up and distributed spelling lists and other plans, and everyone took turns reproducing materials to share with the others.

Role Responsibilities. Team members described their perceptions of their responsibilities as team members. These responsibilities fell into two categories. One was to

share the team's work equally and to add creative input: "My responsibilities are to help with the curriculum and we all share materials. We gather and bring anything we have" (Lynn). "We have an equal sharing of responsibility so no one is doing more than anyone else. We take our turn for being responsible for running things off for the team" (Charlotte). The science teacher expressed his responsibilities on the IDT team as: "giving input on students that are of concern, sharing what directions I'm heading in and what I'm covering and being open to ideas." Creativity was a second important responsibility perceived by team members: "to be filled with ideas about how we can make a unit work, to be innovative and to provide input about students to help others" (Angela).

Team Leader. The full-time team leader had a variety of responsibilities. She facilitated mountain meetings, IDT meetings, and the eighth-grade block subject-matter team. In the subject-matter meetings she served as a curriculum expert and gave ideas and input about district curriculum. She provided direction in a consulting role rather than in a supervisory role. Because of a budget crunch, team leader positions for 1993-1994 would be reduced to half time. In preparation for this, the team leaders had been transferring more responsibility to the teachers at the end of the year.

She has not been running our meetings. We've been meeting on our own the last month, writing and distributing minutes. We'll miss all the little

extras (that the team leader has provided) but we'll carry on--we'll do fine. (Charlotte)

In addition to facilitating various team meetings, Pauline described her other functions as a team leader. In summary, they were:

- for instruction and modeling lessons in the classroom, but not in an evaluative role;
- giving help and support to students; i.e. doing minor discipline and counseling, providing supplies, helping with their projects, and arranging parent conferences;
- assisting with small group instruction;
- providing resources to teachers;
- handling team administrative duties; i.e. budget, supply orders, student progress reports.

In addition, the team leader met twice monthly with the all school leadership team, and twice monthly with the other team leaders and principal to coordinate and link the teams with the total school program. One of the counselors summed up the key role team leaders play at Green Valley:

The team leaders have become specialists in dealing with the nuts and bolts--parent contacts, instruction, staffing. They are geographically right there to contact about any team concern. (Charles)

Teamness

Question 2: How do team members define teamness and what elements contribute to teamness?

Definition. Teamness here is defined as that glue that holds a team together, that element that transforms a collection of individuals into a cohesive unit that develops a team identity, a sense of belonging and community and a spirit of collaboration, cohesion and cooperation.

Collaboration. The word "caring" was a common theme when team members described their teams. "We are cooperative, friendly, understanding, sensitive and caring" (Lynn). "We are caring about doing our best for kids and about being innovative as we plan hands-on experiences for kids" (Angela). "We are risk-takers and use divergent thinking skills. We feel good about working together" (Charlotte).

The IDT team meetings were described as more businesslike and perhaps more directed than the subject-matter meetings. "It works well because we switch roles. We take care of business and get back to our rooms" (Lynn). Occasionally an IDT team worked collaboratively to jointly plan a project which went beyond their weekly staffing of student concerns. Two examples of collaborative planning stand out in one IDT team. One involved a team coordinated project to monitor and assist students who were receiving grades of D and F. The IDT team organized a study hall for these students during advisory period. Each week they would focus on one content area and assemble missing assignments for students. These students would go to an

assisted study hall while the other students would see a video.

It takes a lot of organization and preparing lists of missing work and having it ready. We're trying to get kids to be responsible. We don't want them to slip through the cracks, so we force them to go to study hall. (Lynn)

A second IDT team collaborative effort that stood out in the memory of one team member was planning an interdisciplinary unit on exploration.

We sat down as an IDT team and each person contributed what each area was doing. We asked for feedback from each other and made our lessons as integrated as we could--they were good lessons. (Charlotte)

In one eighth-grade IDT team meeting observed by the researcher, the facilitator moved the group through an agenda of three students. Teachers shared how they were doing in class. The learning specialist gave information about counseling and the home situation. The TAG specialist made numerous suggestions about instructional changes that would help tap into one student's strengths. The focus was on devising action plans of instructional alternatives and coordinating with counseling. Pauline, in her role as team leader, made several suggestions to the learning specialist for specific action and follow through. Although much of the meeting dealt with student concerns there was also discussion of a possible eighth-grade field trip and options for teaching an eighth-grade Shakespeare unit for TAG students. The team leader volunteered to help the TAG

specialist with the instruction. The collaboration of teachers was professional, action oriented, and directed toward positive student growth.

The collaborative spirit on subject-matter teams was somewhat different; it was fast-paced, enthusiastic, and curriculum directed. Georgia reflected that the difference in the tone of the two meetings was due to the fact that subject-matter teams dealt with teachers daily classroom instruction, which was their area of primary interest and greatest creativity. "We get so excited we all talk at once" (Lynn). This excitement was reiterated by other teachers. They felt that curriculum planning with their subject-matter colleagues was their first priority. They were working through the curriculum together, many for the first time. "We've spent a lot of time just on what we're going to teach, not on how we're going to present it like we did in elementary school" (Georgia). Angela described the way collaboration worked on her team:

We didn't divide up units. We do our homework and bring what we come up with. We sort it out and take the pieces we like. We have lots of resources and make them available to each other. That's been wonderful.

During a meeting, members asked each other for suggestions on various aspects of the unit and members introduced possible supplementary materials they had to contribute. During one very lively, exciting seventh-grade subject-matter meeting devoted to planning a medieval fair,

the ideas and plans moved at an energetic clip, bouncing from one person to another. When asked how all of these creative ideas finally got organized, Charlotte said: "Somehow it does. Someone starts talking and others add ideas. Someone writes it down and types it up. We have a list of what to do the following week." One interesting aspect of this medieval project was that teachers regrouped their classes, allowing students to choose interest areas on two project days in preparation for the medieval fair. In the seventh-grade block team, two of the teachers were new to the curriculum. The teachers who had taught the material before "made sure the others know what's going on" and provided them with previously used materials.

The free form enthusiastic exchange of ideas in the subject-matter meetings was not entirely satisfactory to everyone. One member who was new to the curriculum and new to middle level students felt that the sharing could be more organized. "Instead of just throwing stuff in the pot, we could divide up and each person work on his or her strength" (Georgia). One team member had mentioned that the goal this year was to get to know the curriculum and share materials. Next year units would be more organized according to a "Curriculum Activities Grid" which focused on concepts, student outcomes, student products, instructional strategies, assessment, and differentiated curriculum.

Although subject-matter teams planned their daily lessons together, there was room for individual teacher creativity in teaching the material. "We have no trouble with people adapting ideas the way they want to handle it" (Charlotte). "We never act like people have to do it our way. If someone chooses to do it our way that's great but if someone wants to do it another way, that's great too" (Lynn). When collaborating on curriculum, differences of opinion did emerge.

If there is a dispute about what we're doing, everyone gets a chance to brainstorm what they'd like to see happen and we end up picking what's most popular. If it's not really what I want, then so what. It doesn't really matter. We all agree to disagree. (Lynn)

The team leader joined in collaboration at the subject matter meetings to clarify, add, or redirect discussion. During one subject-matter meeting observed by the researcher in April, when teachers were planning part of their civil war/reconstruction unit, the team leader and TAG coordinator, added a different perspective to the meeting. They worked to focus the group on broader issues that needed consideration: planning activities of an up-coming open house, evaluating a recently-completed novels unit, and looking ahead to planning curriculum and activities for the remainder of the year.

Cohesion. The team building activities that had been planned for Green Valley staff prior to opening and on-going social functions contributed to a feeling of cohesion. For

instance, the seventh-grade block team got together for dinner with their teammates and husbands, and the whole mountain would meet after school at a teammates house on Friday afternoons for social gatherings.

A cohesive team spirit was more evident in the subject-matter teams than in the IDT teams. One seventh-grade block teacher said of her subject-matter team. "I'm working with a group of women whose thinking is pretty much the same and that makes it easy. We feel good about working together" (Charlotte). Team members showed a respect for one another's ideas and readily volunteered for the various jobs. Joint planning created an excitement about sharing creative ideas.

The team leader offered several reasons why the subject-matter teams had developed a higher level of camaraderie than the subject-matter teams. One was that subject-matter teachers began meeting earlier than IDT teams and so had more time to plan and get to know each other. Math and science teachers were hired later. Second, the IDT teams did not have the same quality time to meet. They met for 45 minutes before school where the subject-matter teams met for 75 minutes during their common planning period. Third, teachers' concern with establishing their daily curriculum and instructional program in a new school put their first priority on subject-matter meetings. Teachers agreed they did not have the time or energy to do extensive

interdisciplinary planning this first year. A counselor added another perspective on cohesion:

We're not sure that everyone understands the dynamics--the possibilities of teaming. It is hard for some people to see the personality of teams and how people work together and hard for them to know how to develop a sense of community--a feeling that other people care. The effectiveness of the teams depends on the expertise of the staff to maintain, develop, and nurture relationships. (Charles)

In continuing, he reflected that many of the teachers had been put in a student advisory role without training in developing relationships. By extension, this lack of training in developing relationships may create a roadblock for teacher teams as well.

The teams felt they shared a common philosophy and beliefs that contributed to cohesion. The main pillar of their philosophy was their sense of mission as middle school teachers: their concern was centered on the students, giving them an exciting education based on active, hands-on projects and making sure that no student "slips through the cracks."

Communication. Most communication during team meetings was task oriented and directed toward curriculum or student concerns. However, some team members consciously worked to nurture peoples' personal needs while working in a group by behaviors such as asking for everyone's input and directing questions at more quiet team members. Team members showed their concern for group climate by such comments as "What do

you want to do?" "How did that work out?" "Does anyone have an idea?" "How is it going?"

The seventh-grade block team mentioned that their runaway excitement sometimes interfered with communication. One member mentioned that one way to improve the effectiveness of their team would be to give everyone an equal chance to share: "Sometimes we get going so fast that it is sort of easy for one person to take over a meeting." One member on another subject-matter team had been concerned about some communication issues, especially at the beginning of the year. She was new to the curriculum and felt excluded. "In the beginning it was one sided sharing, I didn't feel supported or that I was getting positive feedback" (Georgia).

Teacher Affective Outcomes

Question 3: How do ITO teams affect teachers' attitudes about their levels of satisfaction, efficacy, and stress as they relate to teaching?

Satisfaction. The structured interview contained a quantitative question, "On a scale of one to five (one being low and five being high), how would you rate your overall satisfaction with teaming?" Teachers gave a five to their subject-matter teams and in several cases a three to their IDT teams. Teachers qualified their three ratings by saying it was only because IDT teams had not yet reached their potential in creating an interdisciplinary curriculum.

Before school ended they were hoping there would be summer time available to develop IDT units, connecting block, science, and math curriculums.

For three team members their greatest satisfaction in teaming came from the feeling of connectedness with other teachers. One block teacher had previously taught in a high school where she said she had been totally alone and found it "terribly hard and awful." For her, her team was a place where "if you're having a tough day you can go and talk to someone." Another block teacher felt less satisfied in the sharing in her subject-matter team than she had been with the sharing at her previous elementary school. She commented, "There is a lack of experience in sharing. People are not used to giving; there are things they won't let go."

The majority of teachers derived their greatest satisfaction from the professional aspects of teaming. First, they felt that co-planning their curriculum was exciting, creative and made their jobs easier. A seventh-grade teacher said: "Collective planning of the four of us is a real sharing. I feel truly blessed. We're friends as well as colleagues." Second, they felt that the staffing they did to help students in IDT meetings was central to their mission as middle school teachers.

Efficacy. Efficacy is a belief of teachers that they can affect student learning. Two teachers felt that teaming

helped them to be more effective teachers. Lynn felt that sharing concerns about troubled students helped her to plan more successful interventions. Realizing that other teachers were experiencing similar difficulties with a student, she would approach the situation as a learning problem rather than a personal deficiency. Another teacher felt that feedback from teammates helped them strengthen their lessons. "If someone has given a lesson and is feeling 'how can I do it differently?' there are three people who can pull together with suggestions" (Charlotte).

Stress. Teachers reported that teaming reduced the stress of isolation. Their teaching jobs were easier and less stressful because they shared the responsibility for curriculum planning and student behavior. "Collectively dealing with student problems make them learning problems and not personality problems" (Ben).

However, the time commitment required of teaming was reported as stressful. For some the stress was minor--"You have to drop what you're doing and go to a meeting." For others, the stress of multiple meetings was more profound. "Toward the beginning of the year I had meetings four mornings a week and it simply got to the point of overload. You start to resent it and your response is minimal" (Ben).

One team member reported that the stress had been too much and she was returning to the elementary school the next year. A particular set of circumstances combined to create

an unworkable level of stress: she had just returned to teaching after spending time at home with new twins; she had taught only in elementary school and was not prepared for middle school students; she was unfamiliar with the curriculum and at times felt overwhelmed; and she felt her elementary expertise was not always valued by her teammates.

Teacher Behavioral Outcomes

Question 4: How does an ITO team structure affect teacher behaviors in the areas of planning and carrying out curriculum and instruction and in counseling; and discipline?

Curriculum and Instruction. As a result of a teaming structure, Green Valley developed curriculum products that would not have occurred in a non-teamed middle school. In summary, these were:

- an integrated social studies--language arts block curriculum;
- jointly planned science and math curriculum;
- two interdisciplinary all-mountain units and other jointly planned student activities;
- the regrouping of students to prepare for culminating projects, study a variety of novels, and provide TAG studies;
- the infusion of greater variety and creativity into teachers' classrooms as a result of ideas garnered from team planning.

Counseling and Discipline. IDT teams provided a forum for teachers to meet student needs to a greater extent than they could in isolation. Specifically it allowed them to:

- get a more complete picture of a student by sharing his performance and behavior in many teachers classes;
- draw upon the expertise of other teachers and support staff in preparing plans of action to increase student success;
- monitor student academic progress and provided guided study halls;
- collaboratively hold conferences with parents.

Survey

The eighth-grade IDT team participated in a self-evaluation team effectiveness survey in the fall of 1993. The questionnaire consisted of two parts. Part I asked participants to evaluate their team on 12 dimensions of general team functioning. Part II evaluated the degree and frequency that teams engaged in activities identified in middle school literature on effective interdisciplinary teams. Items are rank ordered. Functions and activities at the top of the lists indicate areas in which teams felt they frequently demonstrated these behaviors. The results are tabulated in Table XII.

TABLE XII

GREEN VALLEY MIDDLE SCHOOL: EIGHTH GRADE IDT TEAM
EFFECTIVENESS SURVEY

	POINTS	AVERAGE
<u>TEAM FUNCTIONING QUESTIONS</u>		
Informality	24	8.00
Civilized disagreement	21	7.00
Clear purpose	21	7.00
Open communication	21	7.00
Participation	21	7.00
Clear roles	18	6.00
Experimentation/creativity	18	6.00
Listening	18	6.00
Problem-solving/decision-making	18	6.00
Shared leadership	18	6.00
Trust	18	6.00
Self-assessment	15	5.00
<u>TEAM ACTIVITIES</u>		
Conduct joint parent conferences	21	7.00
Conduct joint student conferences	21	7.00
Coord. with counselor & specialists	21	7.00
Group students for specific purposes	21	7.00
Have common discipline procedures	21	7.00
Monitor academic & personal progress	21	7.00
Share & discuss teaching strategies	21	7.00
Have written team policies for students	18	6.00
Keep team notebook with team info.	18	6.00
Common expectations for work, grades	15	5.00
Coordinate homework, tests	15	5.00
Coordinate instructional objectives	15	5.00
Give student awards/recognition	15	5.00
Main. a strong team identity	15	5.00
Meet regularly 1-3 times/wk.	15	5.00
Plan activities for professional growth	12	4.00
Conduct team activities, field trips	9	3.00
Conduct team help sessions for students	9	3.00
Plan and use interdisc. units	9	3.00
Use flexible time	3	1.00

Note: Range, 1-8; 1 = Seldom; 8 = Frequently, 3
Participants

Team Functioning. The strongest areas for the eighth-grade IDT team at Green Valley were informality, civilized disagreement, clear purpose, open communication, and participation. The team judged self-assessment as their weakest area of team functioning.

Team Activities. The most frequent activities were directed at student concerns--conferencing with parents and students and working with the counselor and specialists. Planning interdisciplinary units was of the least frequent activities. This assessment was consistent with the IDT teams' decision to concentrate on student needs and defer interdisciplinary planning to a later date when hopefully they would have more time.

Summary

Structure. The new facility at Green Valley was built to support a teaming approach. Students and teachers were located in a common teaming area for their school within a school (SWS). Teachers participated on two planning teams. The IDT teams concentrated on the team goal of working collaboratively to meet individual student needs. In subject-matter teams, teachers planned for daily instruction with other teachers throughout the whole school who taught in the same subject areas. Interdisciplinary planning was difficult within this organization which tended to reinforce departmentalization. The team leader had a quasi-administrative position and provided a strong

leadership role in handling the organizational details of the team.

Teamness. The IDT teams were more straightforward and business like; whereas the subject-matter teams engaged in more lively and creative planning. Teachers had developed stronger affective bonds with their colleagues on subject-matter teams; they seemed to speak the same language. Subject-matter teams described each other as "friends" who were caring and supportive of each other. IDT teams described their working relationship as professional.

Teacher Affective Outcomes. Teachers at Green Valley received personal and professional satisfaction from their teams. They attributed stress to two factors. One factor was the high level of required meeting time. The other was a frustration resulting from wanting to plan and implement an interdisciplinary curriculum and the difficulty in finding the time to do so.

Teacher Behavioral Outcomes. As the result of subject matter planning, some results had occurred in the classroom. Teachers shared instructional ideas and plans for active hands-on approaches and culminating projects. The seventh-grade language arts/social studies team, for instance, put on a very exciting and creative all-school medieval fair. Even during a very busy first year, subject-matter teams and IDT teams implemented two all-school thematic units, one on exploration and one on mountains.

CROSS-CASE ANALYSIS, RIVERVIEW AND GREEN VALLEY

Introduction

Three individual case studies on interdisciplinary teams at Riverview Middle School have been presented, a sixth-grade team, a seventh-grade team, and an eighth-grade team. A fourth case study describing interdisciplinary teaming at Green Valley Middle School has also been presented. These two schools were different in demographics, location, size, and physical plant. They had each arrived at interdisciplinary teaming via different routes, and, though the teaming structures they adopted were different, notable similarities also existed. Table XIII summarizes key demographic differences of the two sites.

The purpose of this cross-case analysis is to describe the similarities and differences of interdisciplinary teams in the two schools. Multiple sources of information provided evidence to the observations described in each case study and for the cross-case analyses. The same four questions used in each case study serve as the organizers for this cross-case analysis.

Background

Although Riverview had been a middle school since 1984, and Green Valley was a newly-opened middle facility, both middle schools were engaged in a common venture during 1992-1993, the year of this study. This was the first year

that both schools were implementing a school-wide ITO structure. Riverview organized into grade level interdisciplinary teams including language arts, reading, social studies, science, and math.

TABLE XIII
DEMOGRAPHIC COMPARISON OF RIVERVIEW
AND GREEN VALLEY

Riverview	Green Valley
Rural	Suburban
No board policy; teaming is a result of a site decision	Board policy on teaming; three year study
6th, 7th, and 8th grades	6th, 7th, and 8th grades
3,884 students in district	9,294 students in district
375 students in school	750 students in school
Facility built in 1950	New facility
Team leader--1 period a day	Full-time team leader
SES--72 out of 340	SES--325 out of 340
Site council representatives elected from teams	Site council not related to teams

Green Valley, with a much larger student population, had divided into three schools-within-a-school (mountains). Students were to remain in their SWS for three years. Within each SWS, teachers were divided into grade-level interdisciplinary (IDT) teams. Teachers who taught the same

discipline also collaborated on subject-matter teams that spanned the three mountains.

Mission. Although ITO teaming was established at both schools to better serve the emotional, social, and instructional needs of young adolescents, the schools arrived at their mission to use ITO in very different ways. Riverview arrived at a teaming concept through a slow metamorphosis that began with a teacher-led school improvement project. It changed and expanded under three principals during a six-year period. Their move toward teaming had been a site-based decision; there had been no district policy or leadership to move to ITO at the middle school. Without a formalized district or school mission statement about the purpose and rationale for teaming, Riverview teachers did not share a strong, shared vision for interdisciplinary teaming. The mission they saw for themselves loosely centered around three concepts:

- teachers sharing and communicating with each other about a common group of students;
- teachers mutually solving student concerns;
- increasing curricular integration through interdisciplinary units.

Green Valley was the result of a district-wide effort to restructure middle level education. An explicit board policy set out the rationale for teaming and outlined an organizational model. The district spent approximately

three years planning, organizing, and inservicing teachers for a restructured middle school. As a result, staff had a shared vision of teaming goals. These goals were: (a) sharing student concerns, and (b) interdisciplinary curriculum.

Organizational Structure. Green Valley and Riverview adopted two different organizational structures. These two structures provided both benefits and roadblocks to each school. At Riverview, teachers had one team to work and bond with. The cross-disciplined structure of the teams was intended to eventually break down the traditional departmental lines that have historically separated middle school curriculum. However, this also offered a roadblock. The planning of interdisciplinary units with teachers outside one's specialty had been a challenge, especially since teachers had not yet developed a model for curricular integration.

On the other hand, teachers at Green Valley were most excited, creative, and productive when joint planning curriculum with other teachers in the same subject area. This resulted in a cohesive, well-articulated school-wide curriculum within disciplines but did not necessarily aid teachers in planning interdisciplinary units within IDT teams. Teachers had to meet and coordinate with three teams: mountain, IDT, and subject-matter teams. One disadvantage in the structure of IDT teams was that at Green

Valley math teachers did not share all the students in the team.

Structure

Question 1: How do teams describe the structure of their team?

Goals. In addition to integrating curriculum and developing strategies to meet students' needs, a number of personal and professional goals were identified by teachers at both Riverview and Green Valley. They were:

- providing consistency for student behavior and expectations;
- building a cohesive team and committing to the team;
- connecting and sharing with other teachers;
- giving and getting creative ideas in the team.

Meetings Agendas, Procedures. Both Riverview and Green Valley had established norms for weekly team meetings and often met more frequently. Procedures for meetings were more formalized and consistent at Green Valley with team agenda formats used by all teams in the school. The most common agenda items for each school are presented below:

Riverview:

- site committee and administrative concerns
- team activities; i.e. assemblies and field trips
- student concerns
- interdisciplinary planning

Green Valley:

- IDT
 - student concerns
 - some interdisciplinary planning and team activities
- Subject-Matter Teams
 - curriculum
 - weekly lesson planning

Role Responsibilities. The team leader roles were quite different at each school. At Riverview, the team leader was one teacher on the team who also represented the group on the 21st Century School Council or site committee. This teacher also did extra organizational and detail work for the team during an extra non-teaching period. The team leader was still essentially a teaching peer who took on extra responsibility for the team

At Green Valley, the full-time team leader occupied a unique place in the school. She fulfilled a quasi-administrative role and served as an instructional leader. The team leader also additionally described her role as facilitator, resource person, and helper, doing many jobs for the students and teachers on the team. In addition, she provided a connection of the team with the rest of the school with frequent meetings with the principal and other team leaders.

The team members from both schools defined their team roles in similar terms. Areas of commonalty were:

- being responsible to do an equal share of team work;
- being innovative and giving creative ideas;
- sharing, communicating, and being open to new ideas;
- adding input on students.

Teamness

Question 2: How do team members define teamness and what elements contribute to teamness?

Collaboration. There were no clear between-school differences in the level of collaboration on teams; rather this level varied from team to team in each school. Little (1990) described four levels of collegial planning: (a) story telling and scanning for ideas, (b) aid and assistance, (c) mutual sharing, and (d) joint work. All teams engaged in scanning for ideas and mutual sharing. Evidence for aid and assistance was most often found on teams that had inexperienced or new members. At Riverview, experienced teachers assumed informal mentor roles with their new teachers, giving them support, sharing materials with them, and providing feedback and guidance. The experienced teachers took the new teachers "under their wing," and this helped build a cohesive climate of genuine concern and caring for one another. At Green Valley, in subject-matter teams, teachers who were familiar with the curriculum were concerned about sharing their materials and expertise with the teachers who were new to the curriculum. Joint planning at both schools appeared to this researcher

to be more evident when teams were dealing with classroom-related curriculum and instruction issues that involved their day-to-day interaction with students.

Collaboration for interdisciplinary thematic units was a goal, to varying degrees, at both schools. For a number of reasons, both schools during this first year of interdisciplinary teaming felt they had not satisfactorily addressed this goal. However, both schools focused on thematic teaching as a beacon toward which they were moving and expressed a commitment to intensify their efforts in this direction for the following year.

Cohesion and Communication. This researcher did not find evidence of clear, between-school differences in the level of team cohesion; rather there were teams at both schools that expressed stronger bonds of community and team spirit. Teams with this stronger sense of community shared several characteristics:

- a conscious effort by team members to be caring, supporting, and concerned for one another;
- a conscious effort by team members to listen to each other, to accept differences, and to trust their teammates so they could be open in expressing their opinions and feelings;
- a feeling of equal participation and energy--a willingness to give their time and energy to the team;

- a focus of team time and energy on curriculum issues and planning that involved their day to day instruction with students.

Teacher Affective Outcomes

Question 3: How do ITO teams affect teachers' attitudes about their levels of satisfaction, efficacy, and stress?

Satisfaction. Teachers at both schools found satisfaction in the same aspects of teaming but with different priorities. At Riverview, the greatest satisfaction came from a feeling of belonging, of being less isolated, and having a supportive group with whom to share frustrations and successes. The two Riverview teams that reported the highest levels of over-all satisfaction also derived satisfaction from several professional rewards. These rewards were: learning from each other, sharing creative ideas, and joint planning interdisciplinary projects.

At Green Valley, teachers' strongest satisfaction came from two professional rewards:

- co-planning lesson plans;
- collaborating on student concerns.

Efficacy. At both schools teachers felt that teaming helped their effectiveness to some degree. Two common areas of increased teaching efficacy surfaced:

- sharing student concerns helped teachers to more positively plan classroom interventions for students;
- co-planning curriculum units strengthened teachers' lessons by drawing on the creativity and experience of the others.

At neither school did teachers regularly visit each others' classrooms, and they did not appear to greatly share, evaluate, and assist each other on effective instructional techniques.

Stress. Teachers at both schools agreed that, overall, teaming reduced the stress of isolation and created a group with whom to share responsibility for a common group of students. In addition, at Green Valley, the planning done in subject-matter teams reduced the stress of daily lesson planning and organizing the curriculum.

However, teams at both schools also reported some stress caused by teaming. Stressful to both schools was a feeling that they lacked the time to do quality planning to restructure the curriculum into interdisciplinary thematic units. Several teachers also reported the lack of process skills in listening and receiving positive feedback caused stress. At Riverview teachers identified two other sources of stress:

- the amount of time devoted to site and school administrative concerns during team meetings;

- the perception that the sixth-, seventh-, and eighth-grade teams were becoming separated from each other and somewhat competitive.

Teacher Behavioral Outcomes

Question 4: Does an ITO team structure affect teacher behaviors in the areas of planning and carrying out curriculum/instruction and counseling/discipline?

Curriculum and Instruction. According to middle school philosophy, a curricular goal of teaming is to provide for a more cohesive, interdisciplinary curriculum for students. Both schools made exploratory steps in this direction during the year of this study. Both schools, however, felt that their potential to achieve this goal had not yet been reached.

Counseling and Discipline. Through interviews and observations, the following statements represent a summary of the evidence about student discipline and behavior outcomes of teaming shared by both schools.

- a consistent approach to behavioral and academic expectations;
- a consistent approach through plans of action for troubled students;
- a team approach to meeting the needs of TAG and learning disabled students;
- an opportunity to receive input from counselors, and specialists as an aid in planning student interventions;

- a team plan for recognizing student success;
- a team plan for monitoring student academic performance and providing additional help and guidance
- a team approach to parent conferences.

Summary

George, 1982, described four stages of growth through which teams move (though not necessarily in linear order). These stages are:

1. Organization: developing focus through common procedures and policies.
2. Community: developing a spirit of belonging, community, and commitment.
3. Joint planning/team teaching: collaborating on curriculum and instruction and implementing an integrated curriculum.
4. Governance: sharing in school-wide decision making for the team.

All teams in both schools were engaged in organization, stage one. Teams at both schools were at various levels of achieving stages two and three, community spirit and joint planning. Only teams at Riverview were participating in building governance through their team representatives to the site committee. Interdisciplinary teams at Green Valley were not involved with the 21st century school council (site committee).

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

INTRODUCTION

Study Purpose

The purpose of this case study is to describe and explore the dynamic workings of interdisciplinary teams of teachers in two Oregon middle schools. The focus is on the teachers who are attempting to make an interdisciplinary team organizational (ITO) structure work--what they know and do, the processes of their interrelationships, their perceptions of themselves working in new cooperative roles, and the curricular and student outcomes of this teaming process. An additional purpose is to add to the body of research about ITO teams in order to provide useful information to schools currently using an ITO structure or considering adopting one.

Chapter Contents

This chapter presents conclusions and recommendations relevant to the findings of the study. The conclusions are reported according to the research questions that guided the study. Recommendations are made for several audiences who may be involved in or contemplating implementation of an

interdisciplinary team organizational structure in the middle school. Recommendations for future research are also included.

CONCLUSIONS

Table XIV serves as an organizer for the conclusions of the study. The conclusions are organized in the four key areas defined by the guiding questions of the study.

TABLE XIV
FRAMEWORK FOR CASE STUDY
CONCLUSIONS

TEAM STRUCTURE	TEAMNESS	TEACHER AFFECTIVE OUTCOMES	TEACHER BEHAVIORAL OUTCOMES
●organization	●collaboration	●satisfaction	●curriculum and instruction
●members	●cohesion	●efficacy	
●goals	●communication	●stress	●counseling and discipline
●procedures			
●roles			
●leadership			

Structure

Question 1: How do teams describe the structure of their team?

Team Organization. An interdisciplinary team is defined in the literature as an organization of teachers

from several disciplines that share a common group of students, a common planning time, and adjacent teaching space in the school. The two middle schools in this study organized their interdisciplinary teams by grade level. Teams were composed of teachers from several disciplines, namely, science, math and social studies/language arts teachers.

A centralized and common physical space was important in reinforcing a team concept in the teams in this study. Green Valley was designed specifically to facilitate a team concept with three wings built to house three schools-within-a-school. At Riverview, a traditionally designed school, teachers purposely relocated their classrooms and student lockers in a central area to reinforce their team identities. Riverview teachers reported that this fairly simple change added positively to feelings of team belonging in students and staff. The new arrangement also encouraged interactions of teachers on the same team. An exception to this was one science teacher who could not be relocated to be near the other teachers on his team because of his classes in a science laboratory. His team was very aware that his physical distance made it difficult to discuss and network with him between classes and at odd moments during the day as they did with other, closer members of their team.

Sharing a common group of students was also an important structural feature of ITO teams. At Green Valley, because of an all-school plan for ability grouped math classes, math teachers had students dispersed in all three mountains of the school (schools-within-a-school). Consequently, if their IDT team were discussing a student they did not have in math class, they would not attend the meeting. This lack of a common group of students with other IDT team members also constituted a hardship for math teachers, as they had to network with as many as four IDT teams. This arrangement detracted from team planning and team building on IDT teams. Unlike Riverview, Green Valley teachers also met weekly in subject-matter teams for curriculum planning. This multiple assignment to various planning teams overextended teachers' capacities for joint planning.

The literature on interdisciplinary teams stresses the importance of teachers having common planning time. However, having to do both team planning and preparation for their classes during only one daily preparation period put a strain on teachers' resources. Even teachers at Green Valley who had a 75 minute daily preparation period felt it was not sufficient time for their interdisciplinary team to replan the entire core curriculum into interdisciplinary thematic units. Another barrier for interdisciplinary planning at Green Valley was that the common planning time

was given to subject-matter teams rather than to interdisciplinary teams. As the first year of a new school, Green Valley was feeling pressured to organize the instructional program for students, and they felt that subject-matter planning gave teachers the most support to do this. Interdisciplinary teams met more hurriedly before school once a week. This lack of quality common planning time negatively impacted interdisciplinary teams, which were judged by teachers at Green Valley to be less successful than the subject-matter teams.

A specific structure which organizes teachers into collaborative teams like interdisciplinary team organization (ITO) is an important starting point for interdisciplinary planning. Organizational structure precipitates increased interactions and interdependence among teachers on a team. Although, teaming arrangements alone are not sufficient to cause collaboration, they are a necessary prerequisite for such cooperation to occur (Arhar, Johnston, & Markle, 1988).

Two further conditions are necessary to ensure the intense, face-to-face joint planning that results in a restructured interdisciplinary curriculum that produces changes in instruction at the classroom level. The first is a commonly shared and clear goal and rationale about curriculum integration. "Persons may have substantial opportunity for working together, but be at a loss to

understand why it is important they should, or what would be sacrificed if they did not" (Little & Bird, 1984).

Goals. Two themes emerged as primary goals for teachers on the ITO teams in this study. These goals were:

- integrating curriculum;
- collaborating on strategies to meet students' needs.

Goal one--integrated thematic instruction: This goal was more consistently and clearly articulated by teachers at Green Valley where there was an explicit school board policy on teaming and well-defined, school-wide procedures for team meetings. One goal of the school board policy on interdisciplinary team organization was directed at integrating the curriculum. The fact that the board had mandated an integrated curriculum provided a focus and shared goal for Green Valley teachers. Although Green Valley teachers came to realize the desired level of integration could not be accomplished in their first year, it was nevertheless a clear target for which to aim.

Riverview did not have as clear a shared vision of the goal for integrating curriculum at their school. Although the new principal at Riverview assumed integration was a goal, this was not clearly communicated to teams. One team resisted the idea of integrating the four core subjects even in occasional units, although they made progress in integrating the social studies/language and science/math blocks. One team discussed the idea of integration

occasionally but felt under no compulsion to agree to actually do anything different in their classrooms. One team experimented with some integrated approaches during a BASICS/reading period, but had not transferred this experience to try to integrate their primary, subject-matter classes. This lack of a definite vision and goal for curriculum integration created a barrier for doing the extensive shared planning needed to plan integrated units in the curriculum.

Teams at both schools, some tentatively, had identified a goal of planning an interdisciplinary curriculum. However, all teams felt frustrated in accomplishing such a monumental task of integrating four or five subject matter areas into cohesive integrative thematic units. Several barriers were evident. One problem was teachers' unfamiliarity with one another's subject areas. Many teachers on ITO teams have been trained as specialists. They represent four different subject-matter areas and have little experience or familiarity with each other's curriculum. Another problem was teachers' lack of experience in the task of curriculum integration planning. They needed a model for writing integrated curriculum and training and support in accomplishing the task.

Another barrier was the lack of quality planning time. Weekly one-hour team meetings may provide sufficient time to discuss and design intervention plans for troubled students

and to coordinate routine team activities such as field trips and a student recognition program. Yet, it is not sufficient time to restructure curriculum on a comprehensive level. A greater provision for time resources is necessary to enable four teachers to recreate the total core curriculum.

A developmental view to creating an integrated curriculum would be a practical and feasible approach. In addition to daily and weekly planning time, school staffs will also need to take a longitudinal view toward curriculum integration. As a developmental process, it may take several years in planned increments to achieve the goal of integration. It may not be desirable to try to integrate four or five subject areas plus electives, at least not all at once. The logical starting place is in the integration of the more natural groups of the language arts/social studies and the science/math blocks. By gradually adding other subjects to the integrated units in these areas, teachers can work to restructure the comprehensive curriculum in manageable pieces. Schools and teams will have to find the optimal level of integration that works for them and their students. The teams in this study, to varying degrees, had begun interdisciplinary planning. However, they identified a need for clear goals, training and support, and quality time to continue in this direction.

Goal two--collaborating on student concerns: A primary purpose of interdisciplinary teams described in the literature and embraced by both schools was the goal to collaboratively address student concerns and mitigate student problems. The interdisciplinary teams at both schools provided a viable structure for teachers, counselors, and specialists to plan interventions for troubled students for whom they had a shared responsibility. Both schools shared a goal that teams should facilitate group problem solving of student concerns. Green Valley gave a high priority to this goal which was demonstrated by their formalized agenda process for solving student problems. They had an organized and coherent approach to student intervention. Riverview, though their process was less formalized, did use considerable team planning time to addressing student concerns. Collaborating to solve student problems appeared to be much easier for teams than integrating curriculum. Student intervention could be handled in a more routine way and did not require the intense planning and coordination of integrated thematic instruction.

Team Meetings, Agendas, and Procedures. Teams at both schools had strong norms for meeting regularly. However, teams at Green Valley had more clearly defined agendas and written procedures governing team business and guiding team meetings. This was the result of clear, explicit team

guidelines which were outlined and adopted in district school board policy. School-wide guidelines also were established early on by school leadership. At Green Valley team meeting procedures were followed by all teams. These procedures were clear, written, and monitored by team leaders who served as instructional leaders supported by the principal.

At Riverview there were no shared cohesive procedures governing team meetings and team planning. The principal had assumed a peripheral, uninvolved role in the teams his first year at Riverview. This lack of coordination and involvement resulted in three teams that moved in somewhat different directions with no clear definition about the outcomes they were to achieve, particularly in curriculum planning. The implicit message from the principal at Riverview, as perceived by team members, was that they should spend their team meeting time discussing school site committee business and school-wide concerns for such things as field trips, scheduling, and organizing a recognition program. Attention was thus diverted from joint planning of curriculum and instruction to school wide management issues.

Team Member Role Responsibilities. Teams that rated themselves as more effective defined their role of team member as one of providing dynamic ideas and creative energy toward achieving team goals. Teams that rated themselves as less effective saw their role as "doing my part." These

teams had not generated the same commitment that resulted in implementation of interdisciplinary delivery of instruction at the classroom level. Teams that saw their roles as including a deliberate and explicit responsibility to support, respect, and care for one another judged their teams to be more effective than teams that were less aware of the interpersonal dimension of their team role.

Team Leader Role Responsibilities. During the year of this study, there was a full-time, quasi-administrative team leader position at Green Valley Middle School; whereas at Riverview, team leader roles were fulfilled by one teacher on the team. Because of budget cuts, Green Valley was planning to move closer to Riverview's model of team leadership the following year. Although teams at both schools expressed gratitude for the administrative and organizational help of team leaders, the most effective teams at both schools felt a shared responsibility for team leadership in planning curriculum and implementing team goals and projects.

Neither school received any inservice training about the changed roles required to work in teams or about team leadership roles. At Green Valley, team leaders were selected by the administration because of their previous, proven instructional leadership in the district. At Riverview, team leaders were selected by team peers to represent them on the school site committee. As a result,

without training and a common understanding of their roles, team leaders at Riverview defined their roles in different ways. One leader was directive, one was laissez-faire, and one was collaborative. The team that judged itself as more effective at Riverview had a collaborative leadership structure.

The literature on effective teams suggests that the role of team leader, whether elected, chosen, rotating, or shared, was an important one. As reported by principals, effective team leaders showed maturity, an attention to detail, and were trusted and respected by team members (Meichtry, 1990).

Teamness

Question 2: How do team members define teamness, and what elements contribute to teamness?

Collaboration. The literature on collaborative planning from effective schools research suggests that teachers in effective schools shared several behaviors.

They:

- talked to each other about teaching practice;
- received useful feedback about their teaching;
- designed and evaluated teaching materials together;
- taught each other about the craft of teaching

(Little, 1982).

Furthermore, the literature suggests that successful collaborative planning in effective schools is directed

toward and results in higher student achievement outcomes (Purkey & Smith, 1983; Rosenholtz, 1989a; Rutter et al., 1979). Teaming may actually involve several levels of collegial planning that have the potential to benefit students:

- Coordination of individual efforts toward a common framework; i.e. adjusting schedules, stressing certain skills, being consistent with management techniques.
- Accommodation: teachers adjusting their classroom behavior and instruction to take into account other team members; i.e. adjusting homework demands on certain days.
- Cooperation: the mutual interaction that results in a joint product; i.e. an interdisciplinary unit of instruction (Little & Bird, 1984).

The work that teams do is a developmental process characterized by four stages of collegial planning described by Little (1990): (a) storytelling and scanning for ideas, (b) aid and assistance, (c) mutual sharing, and (d) joint work. The teams in this study were in different developmental stages. The level of development at which a team was functioning was not related to their school affiliation. There were no clear between-school differences. This suggests that the variables affecting high levels of joint work are complex, going beyond structural and school environmental factors.

All teams at both schools showed evidence of stage one, storytelling and scanning for ideas. Teams at both schools that had new or experienced teachers on their teams showed evidence of stage two, mutual aid and assistance. This suggests that IDT teams provide a viable structure for mentoring new teachers. Two teams at Riverview and the subject-matter teams at Green Valley engaged in the third stage of collaboration, mutual sharing. One team at Riverview and the subject-matter teams at Green Valley engaged in the higher levels of joint work described by Little (1990) as the fourth stage of collaboration.

One factor that emerged from the data as contributing to effective collaboration was group process skills. No team at either school had received formal training in team collaborative decision making, action planning, integrative planning models, or other aspects of group dynamics. The success of the teams that judged themselves as more effective appeared to be a combination of several factors identified through multiple sources in the study. Two teams felt that their success was due, in part, to a combination of luck and the principal's foresight in putting them together. The individuals on these teams all rated themselves as team players, enthusiastic generators of ideas, and sensitive listeners who purposely provided emotional support to one another. In addition to luck being a factor of success, evidence from the study indicated that

team members who rated their teams as more effective had specific group process skills; e.g. active listening, equal participation, and concern for the affective dynamics of the team.

A second factor contributing to effective collaboration on teams was their focus on curriculum and instruction in their planning process. The more effective teams found a storehouse of creative energy as they mutually planned curriculum and instruction that impacted their day-to-day classes. This finding supports Lortie's (1975) contention that teachers derive their primary psychic rewards from students. That is, when mutual planning results in concrete classroom changes and increased student outcomes, teachers derive intrinsic rewards that continue to fuel the process. In addition, teams that rated themselves as more effective also expressed that they derived considerable professional satisfaction through mutual curriculum planning.

Restructuring curriculum into integrated thematic units is a very complex undertaking. The research literature suggests that the need to implement a complex instructional program predicts more complex levels of teaming (Cohen, 1976). However, the reverse does not appear to be true. In other words, the mere existence of a team structure does not automatically result in planning to implement a more complex, rich program. This finding leads to the conclusion that higher levels of joint planning will come from a need

of teams to implement a more complex curriculum, such as an integrated interdisciplinary approach. The most complex tasks of teachers are those that deal with issues of teaching and learning. Yet getting close to actual classroom practice means getting "close to the bone" and requires risk-taking and a level of self-esteem that allows teachers to examine and change their classroom practices as the result of collaboration.

The success of teams being able to accomplish the goal of planning and implementing an integrated curriculum rests on a number of factors which include:

- a knowledge of the necessary steps to create integrated curriculum units;
- a willingness to engage in intense levels of joint planning on complex techniques;
- interpersonal communication skills;
- a feeling of community;
- an ability to separate teaching practices from personality issues;
- an equal sharing of the task;
- cooperative attitudes;
- a commitment to a commonly shared and clear goal for integrative planing;
- a high level of interdependence on the team (George, 1984).

Teams in this study that judged themselves to be more effective concentrated their team meeting time on curriculum rather than on more routine matters. They also depended on one another to mutually plan the curriculum they actually taught. Their planning impacted their day-to-day interactions with their students

Cohesion. Three themes emerged in teams that rated themselves as high in cohesion. First, they demonstrated skills in interpersonal relations and made a deliberate attempt to foster positive working relations on their team. They described themselves as warm, caring, and respectful of one another. Although this may in part be attributed to deliberate, school-wide team building activities, it was not necessarily so. Specific planned team building activities were reported as beneficial at Green Valley, although not all teams showed the same degree of cohesion even with these activities. Teams at Riverview had not engaged in purposeful team building for two years. Despite this lack of planned team building activities, two out of three teams achieved a fairly high level of cohesion. In part, this was serendipitous; the result of people who seemed to "click" together. Yet, the sixth-grade team presented a variation of success.

The sixth-grade team at Riverview described themselves as very diverse in personality and teaching style. This was the only team in the study that had existed longer than one

year. They had had two principals and a change in team members since the beginning of their team. They had weathered some difficult times due to interpersonal conflicts. With the skillful counseling help of a former principal, but without formal training on team dynamics, they had overcome their difficulties and found cohesion by focusing on their mutual goal of providing a safe haven and appropriate instructional and social practices for their sixth grades. They worked on overcoming their previous difficulties. They made an effort to compliment one another, to offer assistance and support, to include everyone in the team process, and to being sensitive to the feelings and needs of the other team members.

A second factor that contributed to cohesion was a focus on curriculum planning rather than on other more routine team matters. Rosenholtz (1989a) offers support for this conclusion. She found that higher student achievement increased teachers' psychic rewards. Greater task related interactions about student achievement therefore increased staff cohesion (Rosenholtz, 1989a).

A third element of cohesion common to teams which reported themselves to be more effective was the element of equal participation. Rather than holding back energy by "just doing my part," they showed a willingness and enthusiasm to contribute beyond a minimal level, knowing that their teammates would reciprocate. The literature from

the team teaching/open school studies of the 1970s conducted at Stanford reported that teams that perceived they had a high level of influence felt higher satisfaction. These levels of perceived influence dropped on teams of unequal participation. On balanced participation teams, teachers were more likely to feel they had influence and autonomy (Molnar, 1972).

Communication. Teams in general reported that they shared good communication and that there was no open dissension in their teams. Interviews revealed, however, that some teams did not always openly dialogue on important issues and that they sometimes adopted dysfunctional strategies of dealing with differences, such as withdrawing participation and smoothing over areas of conflict without resolution. Senge (1990) distinguished between dialogue and discussion. With dialogue, teams are able to align their personal energies and find a commonality of direction that concentrates and unleashes a common energy. With dialogue, team members are able to suspend assumptions that may lead to defensive maneuvers. Senge suggested that "in dialogue there is the free and creative exploration of complex and subtle issues, a deep 'listening' to one another and suspending of one's own views" (p. 237). Senge suggested that high functioning teams need training to be able to dialogue with one another to unmask potential dysfunctional assumptions.

More effective teams in this study mentioned the importance of good listening skills in their group process. Even if they disagreed with one another, they were able to create a climate of respect through active listening and to work through disagreements and reach consensus. Also, effective teams mentioned that "ego concerns" were not a problem. That is, team members were willing to suspend a personal bias of "my way" to support approaches suggested by other members of the team, even if those approaches were not their first choice. Teams that rated themselves as less effective revealed some communication problems in their team. They felt their views were not respected or supported.

Teacher Affective Outcomes

Question 3: How do ITO teams affect teachers' attitudes about their levels of satisfaction, efficacy, and stress?

Satisfaction. Teams at both schools found ITO teams to be personally satisfying. The team supplied a support group, a feeling of belonging, and a feeling of shared responsibility, all of which lessened feelings of isolation. This finding supports conclusions from the literature which indicate that a collaborative climate increases teachers' satisfaction (Goodlad, 1984).

The high level of personal satisfaction derived from teaming as found in this study supports the contention of

middle school reform literature that teaming offers "a much needed support group for teachers, eliminating the isolation teachers experience in departmentalized settings" (Carnegie Council, 1989). The findings of this study also tend to support the theory of Bridges and Hallinan (1978) which contends that increased interactions in small groups of colleagues satisfies a desire to connect with one's colleagues, providing a high degree of social reward.

In addition, the most effective teams in this study reported a high degree of professional satisfaction from teaming in the form of renewed learning, creativity from sharing, and jointly planned projects. These teachers reported that the time and energy of teaming did not detract their attention from their core teaching responsibilities, but rather added to their creativity and growth as teachers (Charters & Pellegrin, 1973; Lortie, 1975). This suggests that teachers can and do derive psychic rewards from their professional colleagues and not just from their students (Kushman, 1990). To reiterate Little (1987) "in schools that stand out for their collegueship, recognition and satisfaction stem not only from being a masterful teacher but from being a member of a masterful group" (p. 491).

Efficacy. ITO teaming in this study affected teachers' sense of efficacy in two areas. First, teachers did feel better equipped to deal with student problems after conferring with on another about student concerns and

collaborating on plans to help mitigate student problems. Teachers also felt that sharing ideas strengthened their classroom curriculum and activities. They appreciated and felt enthusiasm for "bouncing ideas off one another." This sharing caused them to rethink some areas of their instruction and try new approaches. According to Rosenholtz (1989a), efficacy was related to a strong and common sense of purpose. Clear goals led to increased efficacy and high efficacy was a predictor of collaboration. In this study, teams that had a clear goal toward integrating curriculum rated their teams as more effective and indicated in interviews that their ability to impact student learning was increased. This conclusion supports the work of Ashton and Webb (1986) who found that collaborative structures could help buttress teachers' sense of self-efficacy.

Stress. Teachers reported that interdisciplinary teams reduced stress overall, primarily because a supportive group alleviated feelings of isolation. In addition, stress was reduced when teachers collaboratively planned daily lessons because it relieved the pressure of planning daily curriculum and activities by oneself.

The literature on stress offers a mixed picture of the effects of collaboration on stress. On the one hand, a sense of community and collegial interactions are mentioned as strategies to alleviate stress in organizations (Farber, 1984; Farber & Miller, 1981; Hoover-Dempsey & Kendall, 1982;

Needle et al., 1980; Schwartz & Olson, 1987). On the other hand, collaborative team structures can also add to stress (Blase, 1986; Hoover-Dempsey & Kendall, 1982; Schwartz, Olson, Bennett, & Ginsberg, 1983).

The biggest team-related cause of stress shown in this study was due to excessive time demands. These time demands took the form of additional meetings and a participative decision-making structure, both of which were time consuming. In addition, stress was caused by the discrepancy between expected outcomes and achievable outcomes. Many teachers had expectations (and hopes) that their teams could and would rewrite the curriculum into interdisciplinary units. The reality turned out to be that this monumental task could not be accomplished in one or even several short weekly team meetings when their primary responsibility was to teach approximately 120 middle school students each day. Teachers felt they had only begun to make headway in this direction. They expressed a need for quality summer curriculum time to accomplish the task of curriculum integration.

The research literature also cites colleague relationships as a source of stress (Blase, 1986; Needle et al., 1980; Schwartz & Olson, 1987). In this study of interdisciplinary teams, colleague-related sources of stress resulted from poor listening and communication skills and a lack of equal participation. Unequal participation was

perceived as some team members lacking initiative to carry out team plans, lacking the enthusiasm to try new approaches, and lacking a generosity to share materials.

At Riverview, stress resulted from another aspect of teaming. This stress was the result of teams who became more and more isolated and competitive within the total school climate. The use of teams to decide site committee business and school-wide decision making tended to divide teams from one another, even though this may have been a effective forum for school-wide decision making. The Riverview team that rated itself as more effective concentrated its planning time and effort on curriculum and instruction and gave site committee business far less time and attention in their team meetings. The absence of the principal from team meetings and the team process may have exacerbated this sense of team isolation. At Green Valley, the district school board policy on middle school interdisciplinary teaming explicitly directed schools to take preventive action so that teams do not become isolated or competitive within the total school.

Teacher Behavioral Outcomes

Question 4: Does an ITO team structure affect teacher behaviors in the areas of planning and carrying out curriculum/instruction and counseling/discipline?

Curriculum and Instruction. With the exception of one team, interdisciplinary teams at both schools were in their

first year of implementing an ITO concept. At Green Valley this was complicated by the fact they were a new school and had many organizational decisions to make and many programs to initiate. Teachers at both schools recognized they had only begun to restructure curriculum into an integrated approach. Although they felt somewhat frustrated in the progress they made this first year, a majority of teams expressed a commitment to continue to move in this direction. Teams at Riverview particularly felt this year had provided them with valuable experience and readiness to move into more active interdisciplinary planning. Teams at Green Valley felt they could concentrate more on curriculum integration after the first difficult and demanding year as a new school was over.

There were two successes of curriculum integration during the year of this study. The first, at Green Valley, involved subject-matter teams. Teachers who taught the same subject matter (such as language arts/social studies) enthusiastically shared materials and ideas to plan an articulated week to week instructional plan in their subject area. The expectation at Green Valley is that this model of intense joint planning will be "do-able" in the future by IDT teams who will integrate math, science, social studies and language arts in interdisciplinary units.

The other success was the eighth-grade team at Riverview. They deliberately structured their common group

of BASICS/reading students to create the need to co-plan on a daily basis. This structure of rotating the students through their classes on a daily basis also made them highly interdependent in curriculum and instruction. They mutually created units that reflected their personal strengths and the points of view of their respective disciplines. They felt that their combined efforts resulted in valued student outcomes. As a result of this interdependence for instruction, they felt they had forged a highly cohesive, energetic, creative, and effective team.

Multiple sources in this study identified various factors that could increase success in reaching desired goals in the area of interdisciplinary curriculum. One factor would be shared goals and a shared commitment toward writing and implementing interdisciplinary units. A second factor would be inservice training on action planning, particularly the ability to formulate a plan to follow through and evaluate interdisciplinary curriculum and instruction. Third and most important, would be a provision for quality summer curriculum writing time. To rewrite and coordinate the science, math, language arts, and social studies curriculum around interdisciplinary themes will take a massive amount of teacher time. In addition, teachers will need additional training to restructure curriculum that identifies and assesses valued student outcomes in academic, social, and behavioral areas. The curriculum planning and

coordination observed at both schools during the course of this study concentrated on teacher inputs rather than student outcomes.

The literature on successful self-managed teams in business and industry offers some additional direction to ITO teams, particularly in the areas of curriculum and instruction.

Effective teams in business and industry:

- set goals and inspect (evaluate) their work;
- take charge of improving their own work process;
- review their work performance;
- take responsibility for acquiring needed new training;
- take responsibility for the quality of their services and products (Wellins, Byham, & Wilson, 1991).

Teams in business and industry have found that to continually provide quality service and quality products requires an effective evaluation system that gives meaningful feedback to the team. The one area of team planning that was notably lacking in the teams in this study was that of evaluation. Teams had no process to evaluate the effectiveness of their team efforts. The key question of team evaluation should be: does interdisciplinary team planning result in a richer, more connected program, in more productive and active classrooms, and in desirable student academic and social behaviors? Without an evaluation

process, teams are likely to remain on a superficial level of collegial planning and will lack a vital tool to aid them in their continual learning as part of a learning organization.

Counseling and Discipline. Interdisciplinary teams provided an organized and viable structure for middle school teachers to collaboratively plan interventions for troubled students. Middle school students have moved from a self-contained elementary classroom with one teacher to a multi-period middle school structure with as many as seven different teachers. With such a fragmented day and so many responsible adults, it is easy for students to get lost in the shuffle and for problems to escalate before an adult notices. An ITO team provides teachers with a structure to help students. The team provides a communication framework to bring together teachers, support personnel, and parents to coordinate plans to help students and to ensure that no student falls through the cracks.

Key Conclusions

Table XV summarizes the key conclusions of this study.

TABLE XV
SUMMARY OF KEY CONCLUSIONS

Structure	<ul style="list-style-type: none"> ●Sharing adjacent physical space added to team identity and team member interactions. ●Sharing a common group of students contributed to team effectiveness. ●A lack of quality team planning time interfered with developing interdisciplinary curriculum. ●A clear district policy on teaming clarified goals for teachers on teams. ●Collaborative team leadership resulted in more equal participation and higher satisfaction. ●Lack of involvement by the building principal in teaming was detrimental to team effectiveness.
Teamness	<ul style="list-style-type: none"> ●More effective teams had specific group process skills. ●Team cohesion resulted from: (1) attention to team maintenance functions; (2) a focus on curriculum and instruction; and (3) equal participation. ●Open patterns of communication, including examination of assumptions and expectations and "deep" listening, added to team effectiveness.
Teacher Affective Outcomes	<ul style="list-style-type: none"> ●Teachers experienced personal and professional satisfaction from teaming. ●Teaming allowed teachers to share ideas and collaborate to meet individual student needs. ●ITO teachers reported less overall stress because they felt less isolation and a sense of shared responsibility. ●Stress resulted from: (1) a lack of time to develop an interdisciplinary curriculum, (2) from poor communication skills, and (3) from team meeting time spent on other school issues.
Teacher Behavioral Outcomes	<ul style="list-style-type: none"> ●ITO provided an effective structure for teachers collaboratively meeting individual student needs. ●Team planning allowed teachers to share ideas for curriculum and instruction. ●Team planning did not include processes to evaluate the team itself or to evaluate the effect of an ITO structure on student behavior and learning.

RECOMMENDATIONS

Practitioners involved in implementing an interdisciplinary team organization in middle schools need to recognize the developmental nature of the change from a traditional instructional structure to an ITO structure. Teachers have been trained and socialized into an isolated teaching environment where they have managed instruction independently of other teachers. ITO assumes that a group of teachers working together will provide an enriched and integrated curriculum for students while at the same time providing greater personal and professional satisfaction from collaborating with their teaching peers. However, achieving this transition requires major changes in thinking, attitudes, planning, and practice. Interdisciplinary team organization is a complex process requiring group process skills and planning skills for curriculum integration which may be new to teachers. Simply providing a teaming structure is not enough. A vision of restructured middle schools calls for far-reaching changes in curriculum, instruction, and collaborative group work. The following recommendations are offered.

District Level

Policy. An explicit policy of interdisciplinary teaming adopted by the district and school board gives direction and support to middle schools that are

restructuring into an ITO structure. This policy should give a rationale, purposes, and guidelines for schools using ITO.

Resources. In addition, districts that support an interdisciplinary model should make resources available to schools to successfully implement an ITO structure. These resources should be available in three areas: (a) paid summer time to restructure the curriculum into interdisciplinary units of study, (b) training in group process and team decision making, and (c) technical assistance in the form of helping schools develop models for an integrated curriculum and evaluation plans to assess the effectiveness of an ITO structure.

Staff Stability and Diversity. Districts should make every effort not to disrupt functioning teacher teams by staff changes. When teams are disrupted due to change in personnel, they lose their momentum and must begin team building all over when different team members are added. Teams may be unwilling to invest the time and energy into developing a coordinated, integrated program if they feel their team is vulnerable to frequent changes due to administrative staffing decisions. Districts should also aid schools in recruiting team members from diverse cultural and ethnic backgrounds to address the concerns of a diverse student population.

School Level

Long-Term Planning. Restructuring middle schools into an interdisciplinary team structure will require a planned developmental process covering several years. Such a plan might include three phases. In phase one, teams would work to define themselves as a team: to articulate shared beliefs, assumptions and goals; to develop processes of planning and communication; and to build trust. In phase two, the team would learn to plan and begin implementing an integrated curriculum. In phase three, teams would focus on students. In this phase, teams would evaluate the effects of their planning on the curriculum, on the dynamics of the classroom, and on student academic and social behaviors.

Process Training. In much the same way that site committees are receiving group process training in The State of Oregon to implement site-based decision making, interdisciplinary teams of teachers would benefit from this same training.

This training should be ongoing. Initial training when teams are formed is very important, but since faculties are always changing and teams growing and responding to different pressures in the environment, on-going training in group dynamics and group problem solving is important.

Teachers participating on teams need a clear developmental framework for the team process and an understanding of the stages of growth they are likely to

experience. Understanding that it takes time to develop high performing teams may alleviate the stress of teams not attaining all their goals in the first year.

In addition, group process training may include the following components:

- team building;
- guidance for working in groups;
- discussion of task and maintenance functions of teams;
- analysis of learning styles of team members;
- skills in introducing new ideas and winning support to try something new;
- collaborative decision making and consensus building;
- skills of working with others on implementation of action plans and building equal participation;
- conflict management;
- communication skills with peers, including communication skills relevant to gender and cultural diversity;
- use of time, team agendas;
- new team roles;
- examining assumptions, setting expectations;
- setting goals;
- skills in evaluating what works and why.

Training for Interdisciplinary Instruction. If teachers are attempting to rewrite curriculum that

integrates science, social studies, math, and language arts, they need staff development and technical assistance in several areas. Because this is such a large endeavor, teams may need assistance in developing a plan that gradually integrates the areas of the curriculum in a meaningful way.

First, teams will need to develop a model to integrate curriculum. This model should include curriculum concepts, developmentally appropriate instructional activities, and appropriate student evaluation.

Second, teams may need assistance in relating middle school philosophy and research-based instructional practices to curriculum and materials. They may require assistance in using flexible time for regrouping students to meet their learning needs.

Third, teams may need assistance in developing action plans to implement a new integrated curriculum.

Fourth, teams will very likely need assistance in developing evaluation plans to assess the effectiveness of their team planning. They should be encouraged to evaluate the effects of ITO on students' cooperative behaviors, on active involvement and student engagement in classroom learning, and in the development of positive social behaviors as well as on academic skills.

Goals. Staffs should collaboratively develop their goals and rationale for teaming in their school. These goals need to be frequently articulated, reinforced, and

celebrated by the principal and instructional leaders. The literature on self-efficacy found that teachers collaboration around clear goals increased their feelings of confidence and efficacy. Effective schools research also found clear goals and a common sense of purpose to be an important variable in effective schools.

The teams that judged themselves as most effective in this study not only had clear goals, but these goals were focused specifically on curriculum and instruction. Teachers demonstrated creative energy and derived professional satisfaction when their collective planning was aimed at classroom curriculum and instruction. Therefore, team goals should focus on curriculum and instruction for their shared group of students. Other school-wide management issues should be discussed in other arenas as much as possible, allowing ITO teams to concentrate on their primary mission--their students.

Leadership. Principals are in a unique position to provide active symbolic leadership to ITO teams. Without taking over as team leader or dictating to the team, the principal can validate and reinforce teams' efforts by his or her attention, questions, and support. The principal and instructional leaders can communicate a sense of importance to the teaming effort. By visiting team meetings frequently as observer and consultant, the principal reinforces the importance of the teaming goal. He or she can articulate

expectations and goals, model collaborative decision making, reward successful team efforts, and defend the resources teams need to be successful. The principal can model the qualities of effective team working relationships--genuine caring, a give and take attitude, active listening, showing respect for diverse points of view, and encouraging innovation.

Also the principal must provide the glue that holds an ITO school together. When teams of teachers meet frequently to plan for their group of students, it is easy to become isolated from other teams. The principal and school staffs have to work hard to maintain a total school cohesive climate, even through small teacher teams are planning instruction together. The principal must keep in touch with all teachers, and find connections to unite teams in a common school effort.

Team Evaluation. The literature on self-managed work teams in business and industry underlines the importance for teams to have evaluation systems in place. Effective work teams take responsibility for the quality of their work and service. They set goals, inspect their work, and review their performance. In the same spirit, ITO teams should include regular team evaluation in their discussions.

Team evaluation should span two dimensions. First, teams should evaluate how they work as a team. They might consider the areas of team organization, leadership

concerns, effective goal setting, extent of collaboration, shared participation, communication problems, areas of stress or frustration, and personal and professional growth.

Second, teams should evaluate classroom climate and student behaviors to determine the effect an ITO structure has on student success. The key question is, "does an interdisciplinary team affect the daily teaching and learning in the classroom?" Chenoweth and Everhart (1991) suggested an organizer to evaluate the effects of change in schools. An adaptation of this organizer would help teams gather information in three categories: the meaning of change, the organization of change, and the effects of change. The section of the organizer focusing on the effects of change would be particularly helpful as teams evaluate their program. Chenoweth and Everhart suggested that the program be examined in the following areas of students' learning experiences:

- active learning;
- student-centered learning agendas;
- regard for students as learners;
- students clarity of their learning role;
- student engagement in a social learning context.

With a systematic evaluation plan such as this, teams could assess the impact of their program on students.

Mentoring. Interdisciplinary teams provide an excellent structure for mentoring new teachers. New

teachers should be placed with high-performing teams that are sensitive to team maintenance functions and the needs of new teachers. Teams that are acquiring a new team member may need some training and preparation for this new role.

Teachers. The teachers from the teams in this study as well as the literature on effective ITO teams identify behaviors that are mentioned over and over as keys to teachers successfully working together on teams. The major behaviors that were mentioned were:

- having egos under control--teachers did not compete with one another or feel that their way was always best;
- being self-confident enough to give and accept ideas;
- accepting difference and still working to preserve the team;
- being positive, patient, tolerant, and consistent in relations with one another and aware of the importance of preserving a supportive interpersonal climate;
- demonstrating a readiness to listen and seek ways to compromise;
- demonstrating a commitment to students' success.

Preservice

Teachers. Many of the behaviors and skills that support successful ITO teams have not traditionally been taught in teacher education programs. Traditionally, teacher education classes have taught prospective teachers to plan lessons, teach their subjects, and evaluate and

manage classroom behavior by themselves. An interdisciplinary team organization envisions a different model. To effectively work in an ITO team, teachers need training in group process skills, in team goal setting, in action planning and in evaluation. The list of recommended topics for group process training mentioned above for inservice teachers would equally apply to preservice teachers. Teachers especially will need to examine the assumptions of an old isolated teaching role and the implications of a new collaborative role.

In addition, the teaching of methods classes by subject matter should be re-examined. If new instructional programs and assessment systems are based on an interdisciplinary thematic approach, then teachers need to be trained to plan and deliver instruction according to a different format

Principals. Principals also have a new and different role as teachers work in cooperative teams. Principals may have been taught in the past to make decisions about student grouping, curriculum and scheduling without the input of teachers. Teachers may have depended rather passively on principals as the sole decision makers. An ITO structure requires more active teacher decision making and communication among teachers as they make those decisions. Prospective principals will need training to be facilitators, staff developers, and coaches, as well as managers.

Further Research

Future research should be aimed in four directions:

1. In light of the current interest and impetus in business and industry to use self-managed teams as a new organizational design, a comparative study between self-managed teams and ITO teams is recommended. Such a study could focus on the same research questions as utilized in this study, covering the areas of structure, teamness (dynamics) and outcomes. The study should focus on the processes of successful teams, their growth and development patterns, their training in team dynamics, the barriers they encounter, and the results of their efforts.

2. A second area of recommended research is a longitudinal study of ITO teams. The study reported here was focused on teams in their first year of implementation. Considerable insight would be gained by following teams over several years to determine their growth patterns and processes as they implement ITO over time. Binko and Lawlor (1986) reported that initially ITO teams experience a halo effect and positive results. However, the longer a middle school was in existence, the less likely it would utilize ITO. Little (1990) also posited that the energy and commitment to maintain a team structure are enormous and difficult to maintain in current school structures. A longitudinal study would attempt to identify the forces and processes that allow a team to grow and flourish over time.

3. A third area of research needed in relation to ITO teams is an evaluative study. This study needs to focus on the effect of interdisciplinary team planning on classroom learning climates and student behaviors such as active participation, social and cooperative skills, and engagement in meaningful learning. More insight and information is needed about the effects of ITO teams on students and their learning. The key question is, does an ITO structure result in increased student learning and what factors are related to this increase?

4. A fourth study proposed for further research is a descriptive/evaluative study of various integrative curriculum approaches used by ITO teams. This study would focus on the different models used for integration, the disciplines included in interdisciplinary studies, the various developmental planning processes experienced by teams, and the classroom learning experiences of students.

Key Recommendations

Table XVI summarizes the key recommendations of this study.

TABLE XVI
SUMMARY OF KEY RECOMMENDATIONS

●District	<p>●Districts should have a policy on ITO in middle schools. This policy serves to focus goals for implementation.</p> <p>●Districts should strive to provide resources to teaching teams in the form of: (1) paid summer time to write interdisciplinary curriculum, (2) training in group process, and (3) technical assistance for developing models for integration of curriculum and evaluation.</p> <p>●Districts should make every effort to maintain team stability in staffing decisions and recruit team members from diverse backgrounds.</p>
●School	<p>●Team process training needs to be on-going and thorough.</p> <p>●Teachers should receive specific training in integrative curriculum development.</p> <p>●Principals and instructional leaders should articulate clear goals and provide on-going support and coaching to teams.</p> <p>●A process for team evaluation should be a regular practice.</p> <p>●Teams with new teachers should receive inservice on new mentoring roles.</p> <p>●Teachers on ITO teams should receive inservice on the research of effective teams, particularly teacher behaviors that contribute to effective team functioning.</p>
Preservice	<p>●Preservice teachers need training in specific instructional techniques appropriate for middle schoolers.</p> <p>●Preservice teachers need training in group process skills, in planning interdisciplinary curriculum, and in evaluation techniques.</p> <p>●Preservice principals should receive training in new roles of coaching and facilitating teams.</p> <p>●Preservice principals need training and experience in participative decision making.</p>
Further Research	<p>●Further research is recommended in four areas: (1) a comparative study of ITO middle school teams and self-managing teams in business; (2) a longitudinal study of effective ITO teams; (3) an evaluative study of the effects of an ITO structure on students; (4) a study of various integrative curriculum approaches used by ITO teams.</p>

SUMMARY

The conclusions and recommendations of this study suggest that implementing an interdisciplinary organizational structure is very complex and developmental in nature. Teachers and administrators need to be trained in group processes that will unleash the potential of the collective group to create improved instructional programs. Team process training should begin in teacher education programs and be an on-going component of inservice for ITO teams that are working to deliver instruction in this collaborative structure.

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APPENDIX A

TEACHER INTERVIEW PROTOCOL

TEACHER INTERVIEW PROTOCOL

- Bulleted items indicate prompts

Background

1. Describe your background as a teacher.
 - 1a. How many years have you taught?
 - 1b. How long have you taught at this school?
 - 1c. How long have you been on this team?
 - 1d. By what process did you become a part of this team?
 - 1e. What do you teach on the team?

Structure

2. Describe your knowledge of the background of teaming in your school/district.
 - 2a. Why did your school adopt the team structure?
 - 2b. What are the school goals and expectations for teaming?
3. Describe the goals for your team.
 - 3a. What are the goals of your team?
 - 3b. Do you feel there is a group commitment to these goals? Explain.
 - 3e. Which goal(s) are most important to you personally? Why?

4. Describe team meetings and team procedures.

- 4a. What do you do during your team meetings?
- 4c. What are your responsibilities as a team member?

Teamness

5. Describe ways your team works together.

- 5a. What kinds of things does your team share? stories and experiences about kids? aid and assistance when problems arise? materials and techniques? joint planning of curriculum?
- 5b. Describe a project (activity) your team has worked on (planned) together.
 - what did you do?
 - how is it going (did it go)
 - how was it different working on this project as a team than it would have been had you done it individually?
- 5c. How does your team come up with new or creative ideas?
- 5d. Does your team have a process for problem solving? what?

6. Describe the relationships between members.

- 6a. How would you describe the "atmosphere" or climate when the team works together?
- 6b. Do you feel you share beliefs and values with your teammates?
- 6c. How do you resolve conflicts on your team?

7. Describe factors that add to cohesion and commitment.

- 7a. What is the glue that keeps this team together?
- 7b. How would you describe the level of participation and energy of this team?

- 7c. How does your team handle team leadership?

8. General

- 8a. What words would you use to describe your team?

Outcomes--Individual Perceptions

9. Describe what teaming means to you.

- 9a. What does teaming mean to you on a daily basis?
How does it affect you life? How does it make a difference?

10. Describe your feelings of satisfaction as part of a team.

- 10a. What personal and professional rewards do you derive from teaming?
- 10b. How does teaming affect the way you feel:
 - about teaching in general?
 - about students?
 - about other teachers?
- 10c. On a scale of 1 to 5 (1 being low and 5 being high) how would you rate your overall satisfaction with teaming?

11. Describe your perceptions of your teaching efficacy.

- 11a. Do you feel that teaming helps you do your job better? If so, how?
- 11b. Do you feel that teaming makes you a more effective teacher in your academic and affective work with students?

12. Describe your feelings of stress.

- 12a. How does teaming affect your perceived level of stress?
- 12b. What aspects of teaming do you find stressful?

13. Describe how teaming has affected students.

- 13a. How has the team affected the lives of the students on your team? How do you think it has it made a difference to them?

14. Concluding Questions

- 14a. What are the current strengths of the team?
- 14b. If you could change one thing in order to help the team function more effectively, what would it be?
- 14c. What advice would you give to teams just starting out?

APPENDIX B

TEAM EFFECTIVENESS SURVEY

TEAM EFFECTIVENESS SURVEY

How often is this statement true?

I TEAM FUNCTIONING

Seldom Sometimes Often Very Freq.

1. **Clear Purpose:** The vision, mission goal, or task of the team has been defined and is understood by everyone.

1 2 3 4 5 6 7 8

2. **Informality:** The climate tends to be informal, comfortable, and relaxed. There are no obvious tensions or signs of boredom.

1 2 3 4 5 6 7 8

3. **Participation:** There is a lot of discussion, and everyone is encouraged to participate.

1 2 3 4 5 6 7 8

4. **Listening:** The members use effective listening techniques such as questioning, paraphrasing, and summarizing to get out ideas.

1 2 3 4 5 6 7 8

5. **Civilized Disagreement:** There is disagreement, but the team is comfortable with this and shows no signs of avoiding, smoothing over, or suppressing conflict.

1 2 3 4 5 6 7 8

6. **Open Communication:** Team members feel free to express their feelings on the task as well as on the group's operation. There are few hidden agendas. Communication takes place outside of meetings.

1 2 3 4 5 6 7 8

7. **Clear Roles:** There are clear expectations about the roles played by each team member. When action is taken, clear assignments are decided and carried out. Work is fairly distributed among team members.

1 2 3 4 5 6 7 8

8. **Trust:** There is a high degree of trust among members; conflict is dealt with openly and worked through.

1 2 3 4 5 6 7 8

How often is this statement true?

I TEAM FUNCTIONING cont.

Seldom Sometimes Often Very Freq.

9. **Shared Leadership:** While there is a formal leader, leadership functions shift from time to time depending on the circumstances. Leadership roles are shared.

1 2 3 4 5 6 7 8

10. **Problem-solving and Decision-making:** The team has well-established and agreed-upon approaches to problem solving and decision making.

1 2 3 4 5 6 7 8

11. **Experimentation/Creativity:** The team experiments with different ways of doing things and is creative in its approach.

1 2 3 4 5 6 7 8

12. **Self-Assessment:** Periodically, the team stops to examine how well it is functioning and what may be interfering with its effectiveness.

1 2 3 4 5 6 7 8

I Team Functioning Section adapted from Parker, G. (1990). Team Players and Teamwork, San Francisco CA: Jossey-Bass, pp. 155-157.

II TEAM ACTIVITIES**How Often and to What Degree
Does Your Team Do the Following**

	<u>Seldom</u>	<u>Sometimes</u>	<u>Often</u>	<u>Very Freq.</u>								
1. Coordinate homework, tests, & projects	1	2	3	4	5	6	7	8				
2. Conduct joint parent conferences	1	2	3	4	5	6	7	8				
3. Conduct joint student conferences	1	2	3	4	5	6	7	8				
4. Coordinate with counselor and specialists	1	2	3	4	5	6	7	8				
5. Have written team policies for your students	1	2	3	4	5	6	7	8				
6. Have common discipline procedures	1	2	3	4	5	6	7	8				
7. Give student awards/recognition	1	2	3	4	5	6	7	8				
8. Monitor student academic and personal progress	1	2	3	4	5	6	7	8				
9. Have common expectations for written work, homework, grades, make-up work	1	2	3	4	5	6	7	8				
10. Have and maintain a strong team identity (teachers and students)	1	2	3	4	5	6	7	8				
11. Conduct team help sessions for students	1	2	3	4	5	6	7	8				
12. Maintain team notebook complete with agenda, minutes, telephone logs, conference forms, etc.	1	2	3	4	5	6	7	8				
13. Use flexible time blocks	1	2	3	4	5	6	7	8				
14. Plan and conduct interdiscip. units	1	2	3	4	5	6	7	8				
15. Conduct team activities; coordinate cooperative field trips	1	2	3	4	5	6	7	8				
16. Meet regularly and often (1-3 / a week)	1	2	3	4	5	6	7	8				
17. Plan activities for professional growth	1	2	3	4	5	6	7	8				
18. Share and discuss teaching strategies	1	2	3	4	5	6	7	8				
19. Coordinate instructional objectives	1	2	3	4	5	6	7	8				
20. Group students for specific purposes	1	2	3	4	5	6	7	8				