INTERDISCIPLINARY ORGANIZATION AT THE HIGH SCHOOL LEVEL:

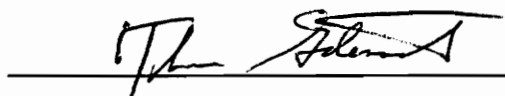## A STUDY OF PERCEIVED DESIRABILITY AND BARRIERS
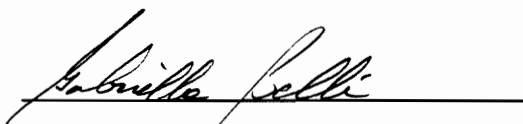
by

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Dissertation submitted to the Faculty of the

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in

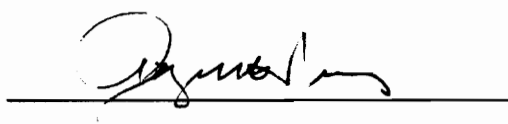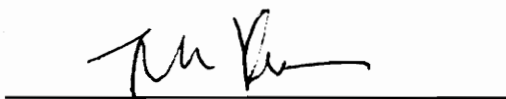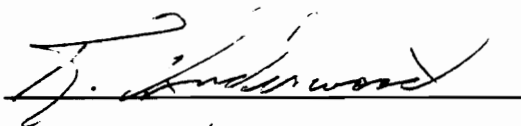Curriculum and Instruction

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INTERDISCIPLINARY ORGANIZATION AT THE HIGH SCHOOL LEVEL:

A STUDY OF PERCEIVED DESIRABILITY AND BARRIERS

by

Thomas Dale Sawyer

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Curriculum and Instruction

(ABSTRACT)

The purpose of this study was to assess the perceived desirability of implementing an interdisciplinary organization at the high school level and to determine barriers to implementing such a reorganizational plan. Educators in 35 Virginia high schools with enrollments exceeding 1500 students participated in this study. A total of 491 (51.6%) administrators, counselors, and teachers returned the survey. Differences in attitudes, and relationships between response and position and between response and subject area were determined through mean scores, analyses of variance, and chi-square statistics.

Of the educators surveyed, 26% expressed some dissatisfaction with the departmental organization in meeting their professional needs, and 40% indicated dissatisfaction with the departmental organization in meeting the needs of their students. Educators expressed overall acceptance of an interdisciplinary organization with no significant differences in responses across positions or subject areas.

Most-desired components were (1) students making connections among disciplines, (2) small and large group instruction, and (3) teachers sharing ideas and materials. Least-desired components were (1) teachers participating in recruiting and selecting new teachers, and (2) availability of leadership positions on the team. Where significant relationships were found between response toward specific components and position, administrators and counselors consistently responded more favorably than teachers. By subject area, English teachers' response towards specific components were consistently the most favorable, and mathematics teachers' responses the least favorable.

Educators were evenly divided regarding the probability of implementing an interdisciplinary organization in their school. Educators perceived the most formidable barriers to such restructuring as (1) lack of facilities for small and large group instruction, (2) lack of space, and (3) inadequate financing.

It was concluded that the real benefits of such restructuring were in areas other than academic achievement (e.g., support for beginning teachers, peer coaching, flexible scheduling and grouping interrelating curricula). It was recommended that interdisciplinary organizations should be implemented in high schools, and proponents of such restructuring should promote psychological and social benefits to students and teachers, rather than focusing on academic achievement.

my self-worth and allowing me to see the world in terms of unlimited opportunities and achievements. Thanks! I knew I could do it. And the many bad ones unworthy of mention who destroyed so much with their negativism, arrogance, and uncaring attitudes. You make me give 100% every day so I will never be like you.

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CHAPTER 1

Introduction

In most American public high schools, the typical
student takes six courses a day; usually English, science,
social studies, mathematics, and two electives. Each
student has six teachers, a counselor, an administrator, and
possibly several resource teachers (reading and special
education). Disciplines are organized by academic
departments and taught by subject-matter specialists
involved in an uncoordinated effort to produce an educated
child. Such a departmentalized structure and fragmented
time schedule, coupled with large class sizes and a
curriculum that values coverage rather than mastery, result
in schools' weak productivity (Sizer, 1983a; Walizer, 1986).
"The unspecial majority often remain anonymous and
unchallenged" (Sizer, 1986, p. 39) and students are often
docile and lack initiative (Sizer, 1984).

Departmental specialization discourages colleagueship
which is essential to the creation of a common educational
purpose. Lieberman and Miller (1984) stated:

> With so many people engaged in so common a mission in
> so compact a space and time, it is perhaps the greatest
> irony--and the greatest tragedy of teaching--that so
> much is carried on in self-imposed and professionally
> sanctioned isolation (p. 11).

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Self-imposed isolation is due to norms of privacy that prohibit sharing or admitting successes or failures. Teachers within departments often have different planning periods, and seldom see each other during the day, isolated from one another and from sources or ideas beyond their own background and experience (Goodlad, 1984). According to Rosenholtz (1985):

> Isolation is perhaps the greatest impediment to teaching or to improving existing skills because most such learning must occur by trial and error. One alarming consequence of trial and error learning is that limits of teacher's professional growth depend solely on their own ability to detect problems and discern solutions (p. 350).

"Cellular" structures are not intended to be highly interactive, decision-making organizations and "deprive the school organization of a rich pool of human talent for organizational improvement efforts" (Alfonso & Goldsberry, 1982, p. 7). The traditional departmentalized curriculum has been characterized as representative of 19th century mentality (Rothman, 1989), fragmented (Rich & Devitis, 1987; Walizer, 1986), dysfunctional (Boyer, 1983), and incapable of handling complex tasks (Cohen, 1976), indicating that such organizations and procedures are based on paradigms that are no longer appropriate.

Research suggests that the most effective schools--where student learning gains are greatest--do not isolate teachers but instead encourage professional dialogue and collaboration (Little, 1982; Rutter, Maughan, Mortimore, Ouston, & Smith, 1979). According to Johnston, Markle, and Arhar (1988), "the creation of structures which permit collaboration are of special interest to educators who view professional development and teacher satisfaction as an integral part of school improvement and student learning" (p. 29).

School organizations that encourage collegial interactions and norms of cooperation among school personnel create a heightened sense of efficacy, develop interpersonal relations, increase self-esteem, and create an atmosphere of support. High rates of interaction and cooperation improve morale and work effectiveness (Johnston et al., 1988; Pellegrin, 1969).

Collaborative arrangements require adjustments in staff utilization and class organization, with specific attention directed toward arrangements for learning including flexible use of time and team organizations. Recommendations by Boyer (1983), Cawelti (1989), Goodlad (1984), and Sizer (1984), call for the reorganization of high schools into smaller, more personal units which require increased professional interaction and stress the value of interdisciplinary programs of instruction.

Dollar (1983) claims that "smaller schools, or subunits of schools, are able better to establish the atmosphere that is needed to facilitate teaching and learning. . . . Smaller schools may be one of the most important strategies for educational improvement" (pp. 15-16). In A Study of Schooling, considered the most comprehensive study ever made of American schools, Goodlad (1984) reports that "the characteristic 'large' appears to be consistently descriptive of the less satisfying schools and consistently not descriptive of the more satisfying schools" (p. 251).

Public school parents rank the problem of large schools/overcrowding in the top five of the biggest problems which the public schools must deal (Elam & Gallup, 1989). Organizing and scheduling teachers and students onto interdisciplinary teams may be of particular advantage in large high schools where it is difficult to maintain a consistently supportive environment.

Students on an interdisciplinary team feel a sense of belonging to a group which reduces isolation, anonymity, and alienation from the large, impersonal institution. Evidence suggests that interdisciplinary team organizations increase achievement, improve attendance and behavior, and increase levels of satisfaction among students, parents, and staff (Burke, 1987; Oxley, 1989).

In a study by Livingston (1982) of large high schools in the Los Angeles Unified School District, students and

parents of students in team organizations reported a significantly greater level of satisfaction with their educational experience than did their peers in traditional organizations. Specific factors with increased levels of satisfaction were general academic progress and psychological growth, preparation of student post-high school success, and student and parent attitudes about all school-related experiences.

An interdisciplinary team organization enables the educational system to develop options, and is advantageous for many reasons including increased teacher awareness of student performance and a more coordinated instructional program. Furthermore, "teachers as a group [in a team organization] feel empowered. They have control over important factors that allow them to be effective with their students" (Wehlage, 1983, p. 33). According to Arhar, Johnston, and Markle (1988):

> [Interdisciplinary] teams produce a sense of community and shared commitment which diminish teacher isolation and uncertainty about effectiveness. Shared responsibility for a group of students, shared decisions governing classroom practice, shared planning time, planning space, and proximity of classrooms give teachers a sense of common focus, common sense of accomplishment, and source of emotional and professional support in solving problems (p. 24).

The Association for Supervision and Curriculum
Development (ASCD) began working with a consortium of high
schools in 1981 to redefine how high schools should be
organized and operated, and to develop a set of principles
to guide emerging changes in the schools. There are
currently 24 high schools in the consortium. The ASCD
recommends "working together in teams [to] facilitate
interdisciplinary communication, delivery of instruction,
and better decisions about planning for school improvement"
(Cawelti, 1989, p. 32). The Coalition of Essential Schools,
(CES) founded in 1984 and co-sponsored by the National
Association of Secondary School Principals, consists of 10
"core" high schools and 30 "associate" schools. The CES has
identified common problems and concerns among member schools
and has developed strategies for restructuring high schools
to serve teachers and students better than the conventional
model. Coalition schools commonly use interdisciplinary
teaching teams to increase effectiveness and efficiency
(Sizer, 1986). While follow-up studies have not been
conducted to quantify changes, there is anecdotal evidence
indicating that such reorganizational plans have positive
effects on student learning and teacher morale (e.g., see
letter from Sizer in Appendix A).

Interdisciplinary teaming is a common practice at the
middle school level (Cotton, 1982). In a study of
instructional organizational practices by George and Oldaker

(1985), 90% of the middle schools surveyed used teaching. teams in some form. High schools, however, seem impervious to change.

An analysis of secondary school innovations completed by the Institute for the Development of Educational Activities in 1967 caused Johnson, Collins, Dupuis, and Johansen (1969) to suggest "attempts at curricular changes have been made in education without careful systematic planning. . . . causing high abandonment rates among innovations" (p. 362). Of the 27 educational innovations at the secondary level surveyed by Meyer (1969), team organizations had the fourth highest abandonment rate.

Many failed attempts at change can be attributed to lack of support from teachers. Sarason (1971) claims "there is a tendency for change proposals to emanate from on high without taking into account the feelings and opinions of those who must implement the changes, i.e., the teachers" (p. 22). Educational reform must start by determining the interest of the plan among the staff, as teachers tend not to accept innovations unless they have a direct role in the plan's development, and may veto, or alter any change they do not accept. Davis (1966) surveyed 72 teachers involved in team organizations and reported that the teachers who demonstrated the poorest attitudes toward teaming were those who are forced into the program. The teachers who were the most enthusiastic initiated and planned the program because

they visualized the need for such a program.

Because teachers are the ultimate implementers of team organizations, their support is necessary in overcoming barriers to curricular revisions at the high school level. In addition to support from the staff, the implementation and continuation of an innovation depends on a supportive administration and an active project director. The three elements are necessary to form a critical mass that can overcome obstacles encountered during the implementation process (Berman & McLaughlin, 1978).

Joyce, Hersh, and McKibben (1983) caution that there are homeostatic forces within high schools that "resist attempts at innovation, precisely because it is their function to prevent changes which might endanger some essential aspect of life in the institution" (p. 67). These homeostatic forces create an inertia that results in real or psychological obstacles to reform, particularly in large institutions (Combs, 1988).

Failure to identify and deal with problems before or during the implementation process may cause staff members, the administration, and the project director to become frustrated and lose interest in the innovation. According to Hall and Rutherford (1976):

> In introducing the innovation, special attention needs
> to be given to pre-use, self-oriented exploration, and
> anticipation concerns. . . . Being aware of the kind of

concerns that an innovation user has at a given time, the person(s) managing the change process can better prescribe relevant interventions (pp. 227-232).

Components of an Interdisciplinary Organization

In a study of school-level collegial teaming, Little and Bird (1984) identified two necessary conditions for joint actions among teachers: (1) interdependence, which is imposed by circumstance, and (2) opportunity, which is a function of schedules, staff assignments, and access to resources. An interdisciplinary organization creates smaller, more personal units within the high school by scheduling a few teachers from different disciplines with the same group of students during a specified block of time. Within each unit, two to four teachers are scheduled to share the same block of instructional time and the same planning period. The schedule consists of at least two consecutive periods during which the teachers are responsible for scheduling and grouping students assigned to them. One administrator and one guidance counselor are assigned to each team.

The purposes for such an organizational arrangement are:

Improving the learning environment by

- coordinating instructional programs;
- increasing teacher awareness of student performance;
- coordinating support personnel and support services;

- providing opportunities for varied student grouping
  arrangements, innovative uses of time within the
  specified time block, and interdisciplinary
  teaching;

Improving the organizational climate through

- teacher empowerment;

- professional interaction among peers.

Statement of the Problem

Team organization and scheduling have been successfully
implemented in middle schools. There have been numerous
studies at the secondary school level regarding the benefits
of team organization and scheduling, and many perceived
barriers to change were identified. The high schools,
however, have retained their traditional, departmentalized
structure. There has been limited research on whether high
school teachers and administrators feel replacing a
departmental arrangement with a team organization is
desirable or possible. Unless school personnel perceive
change as desirable and beneficial, change will not occur.

Purpose of the Study

The purpose of this study was to assess the perceived
desirability of implementing an interdisciplinary
organization at the high school level and to determine
barriers to implementing such a reorganizational plan.

Specifically, the following questions were addressed:

1. Do high school administrators, counselors, and teachers in non-elective disciplines perceive an interdisciplinary organization as desirable?

2. What components of an interdisciplinary organization do high school administrators, counselors, and teachers in non-elective disciplines perceive to be desirable?

3. Do high school administrators, counselors, and teachers in non-elective disciplines perceive that implementing an interdisciplinary organization in their school is probable?

4. What components of an interdisciplinary organization do high school administrators, counselors, and teachers in non-elective disciplines feel have the greatest probabilities of being implemented in their school?

5. What barriers to implementing an interdisciplinary organization in their school do high school administrators, counselors, and teachers in non-elective disciplines perceive to be the most formidable?

6. To what extent are high school administrators, counselors, and teachers in non-elective disciplines satisfied with the traditional departmental organization in providing for the needs of educators and students?

Significance of the Study

A major factor in enhancing or inhibiting the implementation process of a given plan is the initial interest in the plan shown by teachers and administrators. Studies by Corrigan and Hynes (1964) and Eisenhart, Cuthbert, Shrum, and Harding (1988) show that it is necessary to assess educators' desire for the innovation because an educational policy that is incompatible with educators' beliefs will not be implemented as intended. Educators are more likely to develop a positive attitude and claim ownership of a particular organizational plan if they feel the innovation is compatible with their beliefs.

This study of educators' attitudes toward implementing an interdisciplinary organization at the high school level will be of interest to educators considering such a reorganizational plan on a limited or large-scale basis. The desirability of specific organizational and operational components of an interdisciplinary organization were assessed by position and by teachers' subject area, giving change agents perspective in adopting a suitable plan specific to their situation.

In developing a new program, educational researchers and innovators "must consider unforeseen, unplanned, and unwilled consequences" (Popkewitz, Tabachnik, & Wehlage, 1982, p. 180), as unanticipated happenings can make an innovation appear poorly planned. Anderson (1989) claims a

major factor involved in the failure of team organizations to prosper is that they are oftentimes implemented without sufficient planning, and warns innovators to identify negative forces or problems to be dealt with, and positive forces or conditions that would work to advantage. Wehlage (1983) suggests that the initial stages of the planning process include an inventory of anticipated roadblocks to minimize implementation problems. This study assessed educators' perceptions of various barriers to implementing an interdisciplinary organization at the high school level, allowing problems to be addressed before they undermine reorganizational efforts involving such a plan.

Definition of Terms

For the purposes of this study, the following definitions were used:

Barrier -- any factor which inhibits or prevents the implementation of an innovation.

Interdisciplinary -- an organization involving two or more disciplines.

Non-elective Disciplines -- the disciplines of social studies, English, mathematics, and science.

Team Organization --

The heart of the concept of teaming lies not in details of structure and organization but more in the essential spirit of cooperative planning, constant collaboration,

close unity, unrestrained communication, and sincere sharing. It is reflected not in a group of individuals articulating together, but rather in a group which is a single, unified team. Inherent in the plan is an increased degree of flexibility for teacher responsibility, grouping policies and practices, and size of groups, and an invigorating spirit of freedom and opportunity to revamp programs to meet the educational needs of children (Dean & Witherspoon, 1962, p.4).

Assumptions

This study was based on the following assumptions:

1. There is a need to organize high schools differently.

2. A collaborative effort among educators is necessary to meet the academic, psychological, and social needs of high school students.

3. The implementors of an innovation must perceive the innovation to be beneficial or the innovation will not be implemented as intended.

4. Factors that may inhibit or prevent the implementation of an innovation should be anticipated prior to implementation to minimize problems.

Limitations

The following limitations of this study should be noted:

1. The study was restricted to high schools in the state of Virginia with enrollments exceeding 1500 students.

2. The study was restricted to high school administrators, counselors, and teachers in non-elective disciplines.

3. The study assessed only an interdisciplinary organization as an organizational plan.

CHAPTER 2

Review of the Literature

The review of literature is divided into four major sections. The first section explains why a coordinated effort among educators is necessary in addressing the developmental needs of adolescents in high school. The second section identifies the various operational definitions of team organizations, and their positive and negative effects. The third section explains why the democratic process is necessary for reform efforts to succeed. The final section identifies barriers to reorganizational plans involving collaborative arrangements.

The Need for a Coordinated Effort

The Traditional Organization

> How many of us would so arrange [an office] so that people work for eight or nine bosses in a week, in perhaps five different work groups, in seven different rooms without any desk or chair to call their own, and are discouraged, if not prohibited from talking to anyone while working (Handy, 1985, p. 349)?

In the typical high school, students are grouped by age, and according to studies by Benham, Giesen, and Oakes (1980), and Goodlad (1984), placed into different tracks, or cultures, based upon academic performance. Disciplines are

organized by academic departments and taught by subject-matter specialists during separate blocks of time. Subject matter isolation and 50-minute class periods cause teachers to teach in a disjointed and rushed manner (Horn, 1961; Lieberman & Miller, 1984), using instructional methods resembling "large batch processing" (Cohen, 1976, p. 53), and "[without] need for any coordination going on beyond the agreement stating which class will be instructed by which teacher in which subject, in which room and at which hours" (Scholz, 1978, pp. 1-2).

Popenfus, Paradise, and Wagner (1978) criticizing the inflexibility and sameness of the school day state:

The order of each day is like the order of every other day. One subject is studied for the same length of time as all other subjects in the curriculum and the class meets for the same length of time five days a week, as do all other classes (p. 34).

In addressing the Forty-third Annual Convention of the National Association of Secondary School Principals, Lobb (1959) identified the inflexible daily schedule and rigidity of the class size concept as major obstacles in the effective use of staff potential in secondary schools. According to Lobb, specific problems include ". . . the inefficient use of staff time. . . . over-routinism. . . . the restriction of innovation. . . . and the short-sighted subordination of flexibility to stability" (p. 110).

Berman and McLaughlin (1978) state that high school teachers are "subject-oriented in contrast to the child-centered orientation attributed to elementary teachers" (p. 32). The subject-centered curriculum and self-contained classrooms, which Anderson (1989) believes "prevail to a distressing extent because [they are] more familiar and seem easier" (p. 20), inhibit students' growth and development at a time when they are rapidly developing socially, and separate and alienate teachers within the school organization (Cox & Wood, 1980; Gibson & Mitchell, 1981; Lieberman & Miller, 1984; Rothberg, 1986; Sarason, 1971).

Research by Griffin (1984) involving 196 teachers from all levels, found that over 80% of the teachers surveyed felt the classroom was a teacher's private domain in which only the teacher and the students enter. High school teachers' perceptions were higher. Griffin's study indicated that high school teachers rarely observed other teachers' classrooms or encouraged visits by others.

Goodlad's (1984) study confirmed that a large majority of teachers never observe instruction in other classrooms, and are not deeply involved in resolving school-wide problems. "Inside schools, teacher-to-teacher links for mutual assistance in teaching or collaborative school improvement efforts [are] weak or nonexistent, especially in the senior high school" (Goodlad, 1984, pp. 187-188).

Of the two types of interactions among staff members identified by Cusick (1983)--self-promotional and long-standing personal friendships--associations among teachers were not allowed to intrude on one's approach to curriculum or students. Cusick states "what one did in class was her or his own business and others did not have the right to either publicly criticize or offer advice" (p. 392).

Under the traditional departmental organization, teaching fails to provide for a "shared culture based on the movement from knowledge to experience in the company of one's peers" (Lieberman & Miller, 1984, p. 4). If school improvement efforts are to succeed, reorganizational plans must focus on collaborative arrangements (Dollar, 1983; Wolfe, Howell, & Charland, 1989; Powell, Farrar, & Cohen, 1985).

Benefits of Collaboration

Research by Little (1981) indicated that in unusually effective schools, there is a high degree of interaction among teachers. Powell et al., (1985) recommended organizing school time so such interactions can occur.

According to Michaels (1988) a second wave of educational reform is underway, distinguished by the development of a collegial, participatory, personalized school environment which features flexible use of time. Johnston et al., (1988) stated that "collaboration is essential if the profession of teaching is to provide its

members with satisfaction and opportunities for continued growth" (p. 31). Collaboration lessens the feeling of teacher isolation which is a "serious obstacle to the improvement of teaching and learning" (Packard, 1978, p. 102).

Teachers in a school organization that encourages cooperation and collegial interaction feel a heightened sense of power and enthusiasm for group decision-making which results in improved morale and work effectiveness (Arhar et al., 1988; Cohen, 1976; Goodlad, 1984; Pellegrin, 1969; Rosenholtz, 1985; Slavin, 1981). Chissom (1986) identified faculty cooperation as the highest rated factor associated with professional satisfaction in the public schools.

Team Organizations

Collaboration and cooperative planning are the foundations of an effective team organization and are indispensable for the creation of a common educational purpose (Goldstein, 1971; Wehlage, 1983). Team organizations create opportunities for interaction, impose interdependence on staff members, and is "an economic and fairly democratic way of organizing schools. . . . [which] reasserts the importance of people and their relationships or reactions one to another" (Warwick, 1971, pp. 9-13).

Team Organization Defined

"One should view with concern the various attempts to define team [organizations] rigidly" (Bair & Woodward, 1964, p. 21). Cohen (1976) concluded that the concept of "teaming covers too wide a range of collaborative relationships to be useful in sociological analysis" (p. 50). Howe (1962) warned of the danger of a precise definition, as the team and its structure may become an end rather than a means. In a study of 400 teachers involved with teaming, Hall and Loucks (1977) found teams with numerous operational forms, having different components and variations.

Lacking a precise definition, most educators and researchers agree that a team organization is a collaborative arrangement involving rescheduling and regrouping teachers and students. Whether stated or implied, the goals of team organizations are student-centered rather than subject-centered.

Shaplin and Olds (1964) offered a commonly accepted definition of team teaching:

> Team teaching is a type of instructional organization, involving teaching personnel and the students assigned to them, in which two or more teachers are given responsibility, working together, for all, or a significant part of the instruction of the same group of students" (p. 15).

According to the National Education Association (cited
in Scholz, 1978), a team organization is a plan whereby two
or more teachers are jointly responsible for the instruction
of the same group of pupils.

Goodlad and Rehlage (cited in Anderson, 1964) stated
that the term "team" should be used only when referring to
organizations with three characteristics: hierarchy of
personnel, differential staff functions, and flexible
grouping.

Warwick (1971) defined teaming as "a form of
organization in which individual teachers pool resources,
interests, and expertise in order to devise and implement a
scheme of work suitable to the needs of their pupils and the
facilities of their school" (p. 18).

Heathers (1971) described a team organization as a
method to redeploy teachers which results in regrouping
students, rescheduling time, redesigning equipment, and
rearranging space.

Anderson and Little (1974) defined a team organization
as "an approach to instruction whereby several teachers
organize as a team under a qualified leader and share
responsibility for developing, conducting, and evaluating a
flexible educational program for a relatively large group of
pupils" (p. 10).

Rutherford (1979) suggested that a team organization
occurs when two or more teachers work together regularly to

enhance instruction through planning and designing materials or instructional processes, and sharing groups of students.

Types of Team Organizations

There are two specific considerations in the organization of teams--the arrangement of subject matter content, and the organization of the instructional staff. "Possible variations on these two major themes are legion" (Goldstein, 1967, p. 83).

Arrangement of subject matter. In dealing with subject matter, teams can be organized horizontally by grade level, or vertically by subject. Teams organized horizontally are of two types--interdisciplinary teams and single subject teams.

An interdisciplinary team consists of teachers from different subject areas who share the same block of instructional time, planning period, and group of students (Bair & Woodward, 1964; Beggs, 1967; Chamberlin, 1969; Lounsbury, 1981).

It should be noted that the term interdisciplinary "does not imply traditional boundaries of different subjects are abolished" (Scholz, 1978, p. 3). Warwick (1971) says that "'team teaching' and 'interdisciplinary studies' are closely linked but not synonymous". . . . Academic departments can practice team teaching along disciplinary lines. . . . without any thought or intention of integrating one another" (p. 29).

Many collaborative plans, however, recommend an integrated curriculum (Boyer, 1983; Cawelti, 1989; Goodlad, 1984; Rothman, 1989; Sizer, 1988). Thirty-two of 35 subjects in a study by Titus (1988) indicated that some kind of integrated curriculum is necessary in grades 1 through 12. The Association of California School Administrators Recommendation on Standards (1983) stated that integrated studies should be encouraged in all areas.

A single discipline team consists of two or more teachers from the same subject area who share joint responsibility for instructing the same group of students during a common instructional period (Anderson & Little, 1974; Bair & Woodward, 1964; Beggs, 1967; Chamberlin, 1969). Called co-teaching, or a coordinated team by Armstrong (1977), the teachers are involved in joint planning. This type of team may be organized to pair a new teacher with a veteran teacher of the same subject area. While most single subject teams are horizontal arrangements, they may be organized vertically. Such a team is organized around content areas, but students are not necessarily at the same grade level. Research by Rutherford (1981) found very few single discipline teaching teams practicing.

Organization of the instructional staff. Team arrangements involving the organization of the instructional staff are generally of two types, hierarchical, and cooperative (Beggs, 1967). In the hierarchical arrangement,

there is a designated leader who is in charge of coordinating the entire team and is assumed to have superior teaching experience and leadership qualities (Anderson, 1964; Bair & Woodward, 1964; Beggs, 1967; Chamberlin, 1969; Drummond, 1961). The team leader often has a lighter teaching load (Drummond, 1961), earns more money (Bair & Woodward, 1964), and has higher status (Armstrong, 1977).

A cooperative arrangement is less formal, and there are no specific ranks designated for staff members (Chamberlin, 1969). Bair and Woodward (1964) felt that this approach leaves coordination of team activities to chance and without direction, as well as ignores possible career opportunities.

Benefits of Team Organizations

Scheduling teachers and students onto relatively autonomous teams is a practical way to improve school climate, student learning, and teacher morale. Such an organization provides good balance between academics and socialization and places teachers in the center of the decision-making process (Cuban, 1989; Kuhns, 1986; Oxley, 1989; Powell, et al., 1985). Interdisciplinary teaming was a common element in schools identified as exemplary in a study by Lipsitz (1984).

Scheduling flexibility and increased grouping possibilities encourage versatility and creativity in instructional practices and in planning joint ventures such as speakers, films, and field trips (Armstrong, 1977; Boylan,

1980; Garver & Papania, 1982; Horn, 1961). "The flexibility in scheduling. . . . provides teachers with many options for instruction. Sharing of knowledge of students and subjects increases their confidence and consistency" (George & Oldaker, 1985, p. 28). Teachers can capitalize on their strengths and downplay their weaknesses (Armstrong, 1977; Davis, 1987). Teachers, counselors, and administrators can share ideas about students' behavioral and emotional problems, incorporate social development activities into the academic program, and coordinate social and support services available to students (Bishopp, 1987; Cuban, 1989; Garvar & Papania, 1982; Horn, 1961). The more collaborative the school, the more likely teachers are to seek help from students' parents, other teachers, and administrators (Rosenholtz, 1985). "Teams of teachers working with small groups of students can reduce isolation, anonymity and alienation from the institution and, evidently, not only increase teachers satisfaction, but be a significant factor in success with high-risk populations as well" (Arhar et al., 1988, p. 22).

Many educators feel a team organization is a built-in in-service program. According to Cohen (1981) and Rosenholtz (1985) the development of teaching skills and professional growth depends on contact with peers. The peer coaching process benefits educators by initiating and encouraging communications among professionals, encouraging rehearsal of

teaching styles, methods, and content, and developing
awareness of strategies and techniques (Chrisco, 1989; Wolfe
et al., 1989). There is a basic assumption that professional
competencies are improved because "a group of professionals
whose minds are focused on the same problem will usually
arrive at solutions superior to those offered independently
by the same individuals" (Bair & Woodward, 1964, p.12).
Formative evaluations by peers in a collaborative role are
more significant and legitimate sources of reward and
sanction than summative evaluations by administrators in an
adversarial role (Cohen, 1981; Johnston et al., 1988;
Rosenholtz, 1985).

Goldstein (1971) cited specific potentialities for peer
coaching in a team arrangement:

- improvement of instruction by inducing colleague
  observation and self-criticism;
- focus of teachers' attention on the need to review
  instructional goals, reassess teaching techniques,
  and redeploy personnel;
- analysis and adoption of new teaching materials,
  special grouping for instruction, and better use of
  space and facilities (p. 123).

A team organization can function effectively as a
mentoring program for beginning teachers. Support and
guidance from experienced colleagues can help beginning
teachers manage classroom behavior and use instructional

techniques more effectively (Johnston et al., 1988; Rosenholtz, 1985).

Benefits of Teaming in Large Schools

Organizational plans involving sub-unit teams may be of particular advantage in large high schools. According to Davis and Newstrom (1989) "large organizations tend to overwhelm people, disrupt supportive processes and limit the amounts of personal closeness, friendship, and small-group teamwork that are important to the satisfaction of many people" (p. 179). Research has shown that large schools fail to develop and maintain a supportive environment which has a negative impact on student learning and teacher satisfaction (Dollar, 1983; Goodlad, 1984; Oxley, 1989).

An examination of the characteristics of academically successful schools identified smaller organizational structures as essential to the improvement process (Arhar et al., 1988). Jewell's (1989) study of the degree to which educational sizes produce certain educational outcomes indicated a positive correlation between size and achievement. According to Jewell, "Our data, based on general tendencies, persist in repeating a single message--small seems to be better" (p. 151).

Barker and Gump (1964) referred to a smaller sub-unit organization as a "campus school", and cited the advantage of the facilities of a large school and the social values of the small school. Smallness helps develop an "extended family"

relationship among teachers and students and bonds teachers, students, and parents in pursuit of learning (Berlin & Cienkus, 1989; Bishopp, 1987; Cuban, 1989; Wehlage et al., 1987). Such structures have been credited with significant achievement growth and improved attendance and behavior (Burke, 1987; Cuban, 1989; Rutter et al., 1979).

Bryk and Thum (1989) investigated the effects of structural and normative features of schools on both absenteeism and the possibility of dropping out. The study indicated that the social environment in larger schools is more troublesome for teachers and students. Staff absenteeism and lack of interest, and student absenteeism, discipline problems, dropout rates, and tracking were more prevalent in large schools. Smaller schools facilitated the development and maintenance of a positive social environment that engaged disadvantaged students and developed a common educational purpose for teachers and students in general. Bryk and Thum concluded that "internal organizational features of schools can have significant educative consequences for all students, especially at-risk youth" (p. 377).

Bishopp's (1987) study used the School Attitude Survey as a pre-test and post-test to measure changes in attitudes of at-risk students in team organizations. Improvements in students' attitudes about themselves and their school were reported, as well as improvements in grades and attendance.

Comer (1987) cited collaborative team arrangements as the most important factor in improving the learning of at-risk students. Comer claimed that the traditional departmental organization is unable to maintain a supportive environment because the structure cannot adjust to individual or group needs that are different from the majority. A collaborative team organization is more efficient in responding to these needs, and fosters a positive and secure school climate by developing membership in the school community (Bishopp, 1987; Cuban, 1989; Hamby, 1989; Lockwood, 1989; Wehlage, Rutter, & Turnbaugh, 1987).

While communities can not be expected to abandon their large high schools in favor of many smaller schools, the benefits of smallness may be achieved through restructuring existing large high schools into sub-unit organizations.

Effects of Teaming on Academic Achievement

"Educators and community members generally agree that academic achievement is the most important measure of school effectiveness" (Cotton, 1982, p. 4). The following major studies of team organizations at the high school level present conflicting evidence regarding the effects of team arrangements on academic achievement.

Two large-scale studies (Johnson, Lobb, & Patterson, 1959, 1960) compared academic achievement in several areas in team-taught classes with traditional organizations. No significant differences were found in 1959. Replicating

their study in 1960, English students in team-taught classes scored higher than their counterparts in traditional classes, but no significant differences were found between groups in the other subject areas.

Taffel (1962) matched 55 pairs of high school physics students by age, sex, grades, science and math scores, intelligence scores, and scores on the Dunning Physics Test. The students were divided into team-taught and traditionally-taught classes. Criterion measures were the Dunning Physics Test, the New York State Regents Examination in Physics, and the Bronx High School of Science Mid-year Physics Examination. No significant differences in scores were found.

After matching 38 team-taught ninth graders with 38 traditionally-taught ninth graders on the basis of age, sex, California Test of Mental Maturity scores, and Educational Testing Service Cooperative English Test scores, Georgiades and Bjelke (1964) found no significant differences between the two groups at the end of the year on the Cooperative English Test.

A second study conducted by Georgiades and Bjelke (1966) compared the academic achievement in English classes of 74 ninth grade students in team-taught classes with 149 ninth grade students in traditionally-taught classes. Criterion measures included the California Reading Test in Reading Comprehension and Reading Vocabulary, and an English test

developed by the English teachers at the school. Students in team-taught classes scored higher on the California Reading Test in Reading Comprehension, but no further significant differences were found.

Fraenkel (1967) divided 137 eleventh grade history students into one group of 63 students placed in a team teaching arrangement, and 74 students in an independent classroom situation. The criterion measure was a standardized examination developed exclusively for this study and divided into two parts. Part One emphasized recall and recognition. Part Two focused on reflection. No significant differences were found between the two groups on questions regarding recall and recognition, but students on the teaching team scored significantly higher on the reflection part at both the .01 and .05 levels.

A study by Robinson (1968) involved six high schools, 17 teachers, and 529 students in biology classes. Two-hundred sixty-nine students were assigned to team-taught classes and 268 students were assigned to traditionally-taught classes. Criterion instruments were locally developed unit tests, the New York State Regents Examination in Biology and the Nelson Biology Test. No significant differences were found between the groups.

Schlaadt (1969) studied 114 sophomore students in six health education classes. Three classes, totaling 57 students were taught in the traditional manner, and three

classes totaling 57 students were team-taught. The same three teachers taught all classes to minimize the teacher variable. The classes used the same textbook, and were presented the same content over an equal amount of time. The criterion measure was the Shaw Health Knowledge Test(4) and was used as a pre-test and post-test. No differences were found at the .05 level, leading Schlaadt to conclude that the team teaching method is as effective as the traditional method in increasing health-related knowledge to sophomore high school students.

Lutenbacher (1970) compared students in ninth grade honors English, remedial English, and honors social studies in team-taught and traditionally-taught classes. Various forms of the Stanford Achievement Test were used as pre-tests and post-tests. No significant differences were found.

Gamsky (1970) divided 145 ninth grade students in English and world history classes into team-taught and traditionally-taught classes. Using teacher-developed tests as criterion instruments, no significant differences were found between the two groups in either English or world history classes at the end of two semesters.

Summary of studies on academic achievement. Commenting on the studies comparing the academic achievement of students in team-taught classes with students in traditional classes at the secondary level, Armstrong (1977) stated "few [studies] report significant differences in achievement

between team-taught and solitary-teacher-taught students" (p. 73).

Scholz (1978) examined research on team teaching in the United States and Europe. Of the 65 studies, Scholz found 36 studies reporting no significant differences in academic achievement between groups, 19 favoring team teaching, and 11 favoring the traditional approach. Attempting to explain this confusing pattern of empirical results, Scholz cites "non-matched experimental groups, non-random assignment, and no control for teacher's variable" (p. 11).

Charters and Jones (1974) investigated earlier research showing no significant differences in academic achievement between team-taught and traditionally-taught groups. They found no differences in the patterns of instruction or teaching conditions between the two organizations, and concluded that failure to note significant differences in academic achievement between the two groups was a function of teachers failing to change actual instructional patterns. Heathers (1964) noted that major findings are published without evaluating the research methods employed.

According to Shaplin and Olds (1964), the main sources of information about team organizations are documents developed by the projects themselves. Reports present "a curious mixture of hortatory confidence and unsupported optimism; and the contents are generally limited to brief descriptions and over-generalized statements of objectives

and results" (p. 4). Anderson (1964) claimed this tendency to propagandize and over-claim has contaminated much of the reporting.

Research by Hall and Rutherford (1976) focused on stages of concern about team teaching as an innovation and indicated that concerns among teachers about student achievement ranked relatively low. This suggests that the benefits of a team organization may not be associated with student achievement. According to Cotton (1982) "since the interdisciplinary teaming arrangement is just as effective as traditional methods in promoting student achievement, and since the arrangement has been shown to confer benefits on the affective development of students, it is a viable way to organize. . . . " (p. 5).

Negative Aspects of Team Organizations

A survey of 560 teachers in team organizations by Instructor Magazine (1978) reported that such arrangements require too much planning. This criticism was also reported in studies by Rutherford (1979), Cohen (1976), Goldstein (1967), and Giltinan (1965). Further problems relating to team planning and professional interaction include too much paper work (Giltinan, 1965), poor staff relationships (Goldstein, 1967; Meyer, 1968), problems choosing team leaders (Anderson & Little, 1974), and lack of preparation and training for working in a collaborative setting.

School-wide, team organizations experience other problems. Teachers of elective courses often feel left out, there are often inadequate facilities for team organizations, and staff turnover can severely hamper the functioning of team organizations, or destroy them altogether (Anderson, 1989; Anderson & Little, 1974; Doremus, 1982; Goldstein, 1967; Little & Bird, 1984).

Reform and the Democratic Process

In a study of teacher perceptions of educational change, 80% of the teachers surveyed by Podrebarac (1982) saw themselves as receptors of implementation decisions. Teachers cannot be expected to actively participate in school reform unless their voices are heard and taken seriously (Eisenhart, Cuthbert, Shrum, & Harding, 1988; Tewel, 1989). Hendry (1966) claimed "school improvements in high school should involve teachers as intellectuals and problem solvers and should draw on the accumulated knowledge of teachers as a major resource in all activities" (p. 53). Restructuring efforts involving team organizations at the high school level will fail if teachers are denied input and fail to support the reforms.

The democratic process is important in implementing any new program. Stolsmark's (1978) study of the factors that influence adoption of educational innovations indicated that staff members must introduce and recommend an innovation in

order to create support and sustain usage of the new program. A democratic process that allows input from the staff, a supportive administration, and an active project director are necessary in overcoming obstacles encountered during the implementation process (Berman & McLaughlin, 1978; Stolsmark, 1978). According to Hall and Hord (1987) the innovation will continue only as far as the energy of the staff members who lead the reform effort carries it unless there is an institutionalized process for reducing individuals' informational, personal, and management concerns, and for using the innovation at a routine level.

Peters and Waterman (1982) and Rothberg (1986) have identified shared decision-making as an essential condition for effective leadership and effective organizations. Rosenholtz (1985) stated that "there is strong evidence that the performance of schools is linked to the participation of their staffs in making decisions about matters that relate to teaching" (p. 354).

In an essay on school reform at the secondary level, Smith (1985) examined studies by Adler, Boyer, Cusick, Goodlad, Lightfoot, and Sizer. Smith concluded "the studies seem to agree that there is a definite correlation between the effectiveness of schools and the extent to which the teaching staff participates in the decision-making process of the schools" (p. 4).

The democratic process has a profound effect on staff morale. Briggs (1986) surveyed 96 subjects, most of whom were classroom teachers. Each subject was asked to select the ten best indicators of high morale from a list of 46 high-morale characteristics taken from educational literature. Briggs' study found that democratic administrators and involvement in the planning process were among the most significant factors in establishing high morale among staff members.

Kuhns (1986) reported a similar correlation between teacher involvement in the decision-making process and job satisfaction adding that such empowerment is a significant factor in easing tension, reducing teacher absenteeism, and diminishing teachers' desire to leave the profession. Kuhns identified interdisciplinary teaming as a major organizational component that facilitates the participatory management concept.

Because administrative mandates are demeaning to professionals and have a negative impact on morale, the desire for a team organization must come from the staff and must not be imposed by the administration (Corrigan & Hynes, 1964; Benson & Malone, 1987; Meyer, 1968; Parks, 1986; Scott & Smith, 1987; Sizer, 1987).

Barriers to Reorganizational Plans

"The only barrier to high school teaming is a stronger aversion to breaking out of the traditional departmentalized structure" (McKeena, 1989, p. 18). Tradition-bound school structures have permanent, or fixed relationships with organizational variables (e.g., teachers, students, content, materials, time, space, and support services) which makes reorganizational change difficult. The traditional structure has encouraged the development of norms of isolation which discourages collaboration. The theoretical and operational structure of a team organization is "abrasively opposed to certain other structures to which vast numbers of teachers are loyal" (Anderson, 1964, p. 255). Any organizational plan that places the welfare of the student over the interests of the department or the subject may be resisted or vetoed by high school teachers because it disturbs too many things (Johnston et al., 1988; Sizer, 1983b). This adherence to the traditional departmentalized structure in the nation's high schools has created an inbred resistance to change which inhibits innovation and school improvement efforts (Burke, 1987; MacMillan & Pendlebury, 1985).

Educators and researchers have attempted to identify specific barriers to change at the high school level. Different administrative factors can prevent effective implementation of an innovation. Berman and McLaughlin

(1978) reviewed and synthesized the findings of a four year study by the Rand Corporation to examine and evaluate nation-wide educational reform programs. The study found that the role of the principal can not be overstated. The principal gives moral support to the staff which creates a climate legitimizing the implementation and continuation of the project. Uninspired leadership, lack of vision by people in leadership positions, and poorly defined goals and objectives can severely undermine school reforms (Burke, 1987; Gross, Giacquinta, & Bernstein, 1971; Trusty, 1985). Administrators may also hinder educational innovation if they dislike a project, or perceive that the project will result in loss of authority (Lopez, 1983; Smith, 1985; Tewel, 1989).

State and federal laws and regulations are other administrative factors that have created rigid school structures and practices that educators have trouble circumventing and include

- the Carnegie Unit that inhibits flexible scheduling and the correlation of subject matter (Sizer, 1988);
- teacher certification restrictions that inhibit correlated curricula (Paulu, 1988; Trusty, 1985);
- program regulations for students with special needs that often prohibit support staffs from working with mainstreamed students. Because special education teachers may be organized around specific locations, organizational arrangements necessary for special

education may not be compatible with those of the team (Gross et al., 1971; Oxley, 1989);

- school districts use of standardized tests to gauge academic progress and over-reliance on them to measure the effectiveness of reform efforts (Paulu, 1988).

Staff-related attributes may adversely affect implementation and continuation of an innovation. Corbett (1982) and Zenger and Zenger (1984) felt that the predominant barrier to change was the independence of staff members. The initial challenge for teachers participating in reform efforts involving collaboration is to surrender some autonomy (McKenna, 1989). Teachers, however, may be unlikely to suggest or support changes that threatens this autonomy, or requires new types of working patterns or expenditures of energy. The resulting negative or hostile attitudes may hamper reform efforts. Overcoming staff members' resistance to change for whatever reason is the initial requisite for implementing an innovation (Gross et al., 1971).

Research by Berman and McLaughlin (1978) indicated that the number of years on the job and a low sense of efficacy have negative effects on the likelihood a new organizational plan will achieve its goals and improve school effectiveness. Teachers with many years on the job are less likely to change their own practices and less likely to continue using project methods. Berman and McLaughlin recommended that if veteran

teachers are not willing to change, the innovative project should be staffed with efficacious, less resigned teachers.

Staff turnover has eroded the purpose and weakened the resolve of reform efforts involving collaborative arrangements (Cohen, 1981; Little, 1981). According to Rosenholtz (1985) "high teacher attrition has a negative effect on school effectiveness because a constantly changing faculty offers little opportunity to develop the kinds of collegial relations that make student and teacher learning possible" (p. 352).

Other specific barriers to effective educational change have been identified in educational literature and include

- inadequate financial resources resulting in inadequate equipment, materials, and facilities (Clemmons, 1971; Gross et al., 1971; Paulu, 1988; Sizer, 1988; Trusty, 1985);

- large classes and large schools making reform efforts difficult to achieve (Clemmons, 1971; Paulu, 1988);

- lack of adequate training in new subject matter, methods, and techniques (Gross et al., 1971; Sizer, 1988; Trusty, 1985);

- inadequate community support (Paulu, 1988);

- resistance by teachers' unions (Berman & McLaughlin, 1978; Paulu, 1988; Shanker, 1990; Sizer, 1988);

- inadequate time for planning and program development (Clemmons, 1971; Paulu, 1988).

"Without changing the way teachers teach and schools and classrooms are organized, all reforms are destined to be blunted at the classroom door" (Haselkorn, 1982, p. 7).

CHAPTER 3

Method

The purpose of this study was to assess the perceived desirability of implementing an interdisciplinary organization at the high school level and to determine barriers to implementing such a reorganizational plan.

Interdisciplinary team organizations have been successfully implemented in many middle schools. High schools, however, have traditionally maintained a departmentalized, subject-centered organization. Improvement efforts must start by determining the interest of particular programs among the staff (Anderson & Little, 1974; Sparks, 1988). Because team organizations usually involve all, or a combination of the subjects of English, social studies, science, and mathematics, the probability of replacing the traditional, departmentalized high school structure with an interdisciplinary organization depends on the attitudes of teachers in these subject areas, counselors, and administrators. The importance of administrative support for change proposals, particularly team organizations, is emphasized by Little and Bird (1984).

Attitudes were assessed by collecting data from administrators, counselors, and teachers in non-elective disciplines (social studies, English, mathematics, science) in Virginia high schools with enrollments exceeding 1500 students.

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Population and Sample

According to Berlin and Cienkus (1989), "people seem to learn, to change, and to grow in situations in which they feel they have some control, some personal influence, some efficacy. . . . small size by itself can only aid in this complex process" (p. 231). Oxley (1989) claims large schools create an unfavorable learning environment and recommends dividing existing schools into sub-units. Based on the assumption that large high schools are more subject to such problems than small schools, the population of interest included only schools with student enrollments exceeding 1500.

Fifty-six high schools in the state of Virginia comprised the survey population (Appendix B). Of these 56 high schools, 35 (62.5%) agreed to participate in the study. Principals of 11 schools (19.6%) declined to participate, and principals of 10 schools (17.8%) did not respond to initial or follow-up contacts.

To assess the desirability of an interdisciplinary organization among the staff of these large high schools, a census was taken of administrators and counselors in the 35 participating high schools. A cluster sample of teachers in non-elective disciplines was surveyed in 10 randomly selected high schools from within this group of 35 high schools (Appendix B). A total of 952 surveys were distributed to 202 administrators, 227 counselors, and 523

teachers. The 523 teachers by subject area included 112 social studies, 165 English, 129 mathematics, and 117 science.

Instrumentation

Objectives of an interdisciplinary organization were defined, specific components of such a plan were identified, and a questionnaire was developed to: (1) assess administrators', counselors', and teachers' attitudes toward the overall desirability and overall probability of implementing an interdisciplinary organization, (2) assess administrators', counselors', and teachers' attitudes toward the desirability and probability of implementing specific components of an interdisciplinary organization, (3) identify perceived barriers to implementing an interdisciplinary organization in each respondent's high school, and (4) assess survey participants' satisfaction with the existing departmentalized structure (Appendix C).

Questions covered the following components of an interdisciplinary organization: (1) organization, including personnel deployment, schedules, and teacher and student grouping arrangements, (2) operations, including collaborative decision-making, interdisciplinary teaching, leadership possibilities, and supervision possibilities, and (3) effects on student behavior and school climate. Four possible responses ranging from "very desirable" to

"unacceptable" were used to assess desirability of the components of the model. Four possible responses ranging from "excellent chance" to "no chance" were used to measure perceptions of the chances of implementing specific components of the plan.

Four general categories of real or psychological barriers to reform were identified by Combs (1988). Lack of resources results in physical barriers. Regulations and procedures cause administrative barriers. Varying opinions regarding desired outcomes result in philosophical barriers. Peoples' feelings, beliefs, and attitudes create psychological barriers. Fifteen specific perceived barriers to implementing an interdisciplinary organization as identified in literature and applicable to this study were listed on the survey form (Appendix C). Four possible responses ranging from "significant barrier" to "unknown" were used to identify potential barriers to implementing this type of organization.

A section was included to assess each respondent's satisfaction with the existing departmental structure. The satisfaction scale had four possible responses ranging from "totally satisfied" to "totally dissatisfied".

The interdisciplinary organization, the questions on the questionnaire, and potential barriers to implementation were developed on the basis of my experience in a team arrangement in a junior high school, experience as a teacher

in a traditional, departmentalized high school, experience in developing a team organization in a high school, and review of research applicable to team organizations.

The questionnaire was field tested by submitting the instrument to a jury of four teachers and an administrator. The jury was asked to complete the questionnaire and offer criticism regarding clarity, ambiguities, duplication of material, ease of completion, and format. The questionnaire was modified according to the recommendations of the jury. The questionnaire was submitted to the dissertation committee for further review and refinement and approved.

Variables

The independent variables in this study were: (1) respondent's position in the school (administrator, counselor, teacher), and (2) for teachers, the subject matter taught (social studies, English, mathematics, science).

The primary dependent variables were three summary attitude measures, including: (1) the overall desirability of implementing an interdisciplinary organization at the high school level, (2) the overall probability of implementing an interdisciplinary organization at the high school level, and (3) satisfaction with the traditional departmental organization.

The individual items that comprised these measures were

used to identify: (1) specific organizational and operational components perceived to be desirable, (2) specific components perceived to have the greatest chances of being implemented in each respondent's high school, and (3) two aspects of satisfaction with the departmental organization (in meeting the needs of educators, and in meeting the needs of students). Additional items assessed perceived barriers to implementing such a plan in each respondent's high school.

Procedure

The 10 School Cluster Sample of Teachers

During the month of January, 1990, 10 of the 56 high schools in the survey population were randomly selected to survey administrators, counselors, and all teachers in non-elective disciplines in each school. Principals of the 10 randomly selected high schools were contacted by letter asking for their assistance and permission to conduct research in their schools (Appendix A). The letter included the purpose of the study, a description of an interdisciplinary organization, a sample questionnaire, and a stamped, pre-addressed envelope. Principals were asked to identify the number of administrators, counselors, and teachers in non-elective disciplines in their school. Letters granting permission and identifying the number of subjects to be surveyed were requested back within 10 days.

A follow-up letter was sent after 10 days as a reminder, again requesting permission and the number of administrators, counselors, and teachers in non-elective disciplines (Appendix A). A sample questionnaire, and a stamped, pre-addressed envelope was enclosed. When refusals were received, an alternate school for each was selected from the list of 56 schools until 10 principals gave approval. Upon receiving permission from the building principals, cover letters, questionnaires, and pre-addressed stamped envelopes were sent directly to the principals of the 10 schools for distribution among the administrators, counselors, and teachers in non-elective disciplines.

The Census of Administrators and Counselors

Once the 10 schools were identified, letters were mailed to the principals of the remaining 46 high schools in the survey population to complete a census of administrators and counselors. The letters described the purpose of the survey and included cover letters and questionnaires at a rate of one questionnaire per every 120 students enrolled. The letter requested the principals' cooperation in distributing the cover letters and questionnaires among administrators and counselors. A return within two weeks was requested.

Follow-up Procedures

Cover letters informed survey participants that a summary of survey results would be sent to each respondent's

high school, as such feedback has been shown to be particularly effective in increasing response rates (Powers & Alderman, 1982). Questionnaires were not coded to ensure the anonymity of each respondent. Because the survey ensured anonymity, follow-up correspondence (Appendix A) was sent directly to principals immediately after the deadline for distribution among all participants in the survey. According to Adams and Gale (1982) two weeks from the initial mailing is the ideal time for follow-up procedures. Follow-up correspondence thanked each participant for their cooperation, and reminded them to mail the questionnaire if they had not done so. Letters with return postcards were sent to each principal one week following the mailing of follow-up correspondence, asking them to verify their school's participation in the survey, the number of questionnaires distributed, and the number of survey participants by position. Follow-up telephone calls were made to each principal in an effort to achieve a 50% return rate for the survey.

Analyses

Independent variables in this study were position (administrator, counselor, teacher), and if the respondent was a teacher, the subject area taught (social studies, English, mathematics, science). Individual responses on the survey instrument were coded, and summarized to determine

global summary scores toward: (1) the perceived
desirability of implementing an interdisciplinary
organization, (2) the probability of implementing an
interdisciplinary organization, and (3) satisfaction with
the traditional departmental organization. Mean responses
were obtained for each item making up the above three
summary scores, as well as for the 15 barriers to
implementing such a reorganizational plan. Both summary
scores and individual item means were computed by position
and teachers' subject area.

Analyses of variance were performed to determine if
there were significant differences in global summary scores
across positions or subject areas toward perceived
desirability, probabilities of implementation, and
satisfaction with the departmental organization. Chi-square
analyses were used to test for significant relationships
between response and position or between response and
subject area for attitudes toward specific components of an
interdisciplinary organization, and attitudes toward
satisfaction with the departmental organization.

CHAPTER 4

Results

This study was conducted in order to assess educators' attitudes toward implementing an interdisciplinary organization at the high school level. Because such sub-unit organizations may be of particular advantage in large high schools, educators in Virginia high schools with enrollments exceeding 1500 students were surveyed. Of the 56 high schools in the survey population, principals of 35 agreed to participate in this study. Table 1 presents response rates by position and subject area. Of the 952 surveys distributed, 491 (51.6%) were returned. There was no significant relationship between response rate and position, or between response rate and subject area. Although additional assessment of non-response was not possible, it should be noted that response rates across groups were consistent.

For purposes of interpretation, attitude measures relevant to Research Questions 1 and 3 will be presented first, followed by the assessment of attitudes toward specific components of an interdisciplinary organization relevant to Research Questions 2 and 4. Results relevant to Research Questions 5 and 6 will then be presented in order.

Table 1

Response Rates by Position and Subject Area

		Position[a]			Subject Area[b]			
	Total	Adm	Cns	Tch	Ss	Eng	Math	Sc
N Sent	952	202	227	523	112	165	129	117
N Returned	491	96	121	274	56	95	65	58
% Returned	51.6	47.5	53.3	52.3	50	57.5	50.3	49.5
% Not Returned	48.4	52.5	46.7	47.7	50	42.5	49.7	50.5

| Chi-square = | | | 1.3634 | | | | 2.1330 | |
| p = | | | .51 | | | | .53 | |

[a] Position = administrator, counselor, teacher

[b] Subject area for teachers = social studies, English, mathematics, science

Overall Desirability of an Interdisciplinary Organization

Research Question 1 related to the overall desirability of implementing an interdisciplinary organization at the high school level. The categories of responses for each item on the survey were coded as follows: 1 = very desirable, 2 = generally acceptable, 3 = questionable, 4 = unacceptable. Overall desirability was assessed by averaging desirability responses for all components of such an organization. Table 2 presents these summary scores for the total sample and scores by position and subject area. For all respondents, the mean (1.8) indicates an overall acceptance of an interdisciplinary organization. No significant differences in responses were found across positions or subject areas.

Overall Probability
of Implementing an Interdisciplinary Organization

The overall probability of implementing an interdisciplinary organization was the focus of Research Question 3. The categories of responses for each item on the survey were coded as follows: 1 = excellent chance, 2 = good chance, 3 = little chance, 4 = no chance. Table 3 presents scores for the total sample and scores by position and subject area. For all respondents, the mean of 2.5 indicates that educators are evenly divided in their perceptions of the probabilities of implementing an

Table 2

Overall Perceptions of the Desirability of Implementing an
Interdisciplinary Organization

Group	$\underline{M}^a$	sd	$\underline{F}$	p value
Total	1.8	.82		
Position			2.94	.06
Administrator	1.6	.71		
Counselor	1.7	.75		
Teacher	1.9	.86		
Subject Area			1.78	.15
Social studies	1.9	.79		
English	1.7	.88		
Mathematics	2.0	.88		
Science	1.9	.81		

[a] response categories for perceived desirability: 1 = very
desirable, 2 = generally acceptable, 3 = questionable, 4 =
unacceptable

Table 3

Overall Perceptions of the Probabilities of Implementing an
Interdisciplinary Organization

Group	$\underline{M}^a$	sd	$\underline{F}$	p value
Total	2.5	.75		
Position			1.75	.17
Administrator	2.4	.76		
Counselor	2.4	.78		
Teacher	2.5	.73		
Subject Area			2.18	.09
Social studies	2.5	.79		
English	2.4	.88		
Mathematics	2.6	.88		
Science	2.4	.81		

[a] Response categories for perceived chances: 1 = excellent
chance, 2 = good chance, 3 = little chance, 4 = no chance

interdisciplinary organization between "good chance" and "little chance". There was no significant difference across positions. The range of mean scores among positions was only .1 on a 4-point scale. There was also no significant difference across subject areas.

The Desirability and Probability of Implementing
Specific Components of an Interdisciplinary Organization

The purpose of Research Question 2 was to identify specific organizational and operational components of an interdisciplinary organization perceived to be desirable. Research Question 4 was aimed at assessing educators' perceptions of the probabilities of implementing each specific component.

Table 4 presents the specific components described on the questionnaire, mean perceived desirability for each component, and mean probability of implementing each specific component. In both cases, response values ranged from one to four, with lower numbers indicating higher desirability and greater probability of implementaion, respectively. Appendix D presents the means and percentages in each desirability response category by postiion and subject area, along with chi-square statistics for tests of association between response and position or subject area. Appendix E provides similar tables for the probability of implementing each component.

Table 4

Perceptions of the Desirability and Probabilities of
Implementing Specific Components of an Interdisciplinary
Organization

Component	Desirability		Probability	
	M^a sd		M^b sd	
1. Teaming teachers, sharing the same teaching and planning schedules.	2.0	.87	2.5	.77
Such an organization would allow:				
a. efficient use of equipment	1.9	.83		
b. efficient use of facilities	1.9	.84		
c. efficient use of resources	1.6	.75		
d. extend/reduce time periods	1.7	.86		
2. Teachers share the same group of students.	1.9	.87	2.5	.77
3. Teachers jointly plan the educational program for the same group of students.	1.9	.86	2.5	.75
Such a coordinated educational program would allow:				
a. teacher-advisor program	1.9	.87		
b. student grouping decisions made by teachers	1.8	.88		
c. teachers change students' schedules	1.8	.88		
d. students make connections among the disciplines	1.5	.74		
e. small and large group sessions	1.5	.74		
f. independent study	1.8	.88		
g. collaborative learning groups	1.7	.76		
h. awareness of students' overall performance	1.6	.76		

(Table Continues)

Table 4 (Continued)

Component	Desirability		Probability	
	$\underline{M}^a$	sd	$\underline{M}^b$	sd
i. teachers available for conferences at same time	1.6	.76		
j. teachers share ideas and materials	1.5	.70		
k. develop a community atmosphere	1.6	.77		
4. One administrator and one counselor assigned to each team.	2.0	.89	2.6	.76
Such collaboration would allow:				
a. coordinating strategies to address students' needs	1.7	.78		
b. an early warning system of students' problems	1.6	.75		
5. Leadership positions available on the team.	2.2	.86	2.5	.69
6. Teachers participate in recruiting and selecting new teachers.	2.2	.92	2.7	.74
7. New teachers are given support by team members.	1.6	.77	2.1	.77
8. Peer coaching and peer supervision.	1.8	.84	2.3	.75

[a] Response categories for perceived desirability: 1 = very desirable, 2 = generally acceptable, 3 = questionable, 4 = unacceptable

[b] Response categories for perceived chances of implementation: 1 = excellent chance, 2 = good chance, 3 = little chance, 4 = no chance

Most-desired Components

The data presented in Table 4 show three highly-desired components with a mean of 1.5. Among the most highly-desired was Component 3d (students make connections among the disciplines, M = 1.5). Tables in Appendix D show that the highest desirability mean scores among positions and among subject areas were recorded for this component. Table D-11 indicates that 90% of the educators surveyed felt this component was "very desirable" or "generally acceptable". There was no significant relationship between response and position or between response and subject area.

Another highly-desired component was Component 3e (small and large group sessions, M = 1.5). Table D-12 presents data showing a significant relationship between response and position (Chi-square = 16.54, p = .01). Although the relationship was weak (Cramer's V = .13), 96% of the administrators and 95% of the counselors indicated this component was "very desirable" or "generally acceptable", while only 85% of the teachers' responses fell into these categories. Of all teachers' responses, 11% were in the "questionable" category. There was also a significant relationship between response and subject area (Chi-square = 22.92, p = .01) for Component 3e. The "very desirable" category accounted for 66% of the English teachers' responses, 55% of the science teachers, 45% of the social studies teachers, and 43% of the mathematics

teachers. While only 5% of the English teachers felt this
component was "questionable", 9% of the mathematics
teachers, 16% of the social studies teachers, and 17% of the
science teachers responded in this category.

A third item showing a great deal of desirability was
Component 3j (teachers sharing ideas and materials, M =
1.5). Table D-17 presents data indicating there was a
significant relationship between response and position (Chi-
square = 22.34, p = .01), although the relationship was weak
(Cramer's V = .15). A total of 68% of the administrators'
and 64% of the counselors' responses were in the "very
desirable" category, while only 48% of the teachers
responded that way. There was also a significant, but weak,
relationship between response and subject area (Chi-square =
17.37, p = .04, Cramer's V = .14). English teachers
expressed the most enthusiasm for Component 3j, with 57% of
their responses in the "very desirable" category, compared
with 49% for science, 48% for social studies, and 35% for
mathematics. Only 2% of the English teachers responded with
"questionable", compared with 11% of social studies, 11% of
mathematics, and 12% of science teachers.

The next most-highly desired components, with means of
1.6, were 1c (efficient use of resources), 3h (awareness of
students' overall performance), 3i (teachers available for
conferences at the same time), 3k (develop a community
atmosphere), 4b (collaboration would allow an early warning

of students' problems, and 7 (new teachers are given support by team members). Although no significant relationships were found between response and subject area for any of these six components, three components showed significant relationships between response and position. Administrators and counselors gave significantly more positive responses than teachers for Component 3h (Chi-square = 12.58, p = .05), Component 3i (Chi-square = 23.44, p = .01), and Component 3k (Chi-square = 20.23, p = .01). Relationships were all weak, with the strongest Cramer's V (.15) recorded for Component 3i.

Least-desired Components

Table 4 shows that the least-desired components included Component 5 (availability of leadership positions on the team, M = 2.2) and Component 6 (teachers participating in the recruiting and selecting of new teachers, M = 2.2). It should be noted, however, that even these "least desirable" components had mean scores on the positive side (less than 2.5) of the one-to-four scale.

Table D-22 shows that there were no significant relationships between response and position or between response and subject area for Component 5. However, Table D-23 presents data relevant to Component 6 showing a significant relationship between response and position (Chi-square = 13.39, p = .03), although the relationship was weak (Cramer's V = .11). Even though over half (52%) of the

counselors felt Component 6 was "very desirable" or "generally acceptable", 11% indicated it was "unacceptable". A total of 8% of the teachers' responses, and only 1% of the administrators' responses were in the "unacceptable" category. There was no significant relationship between response and subject area for Component 6.

Contingency tables in Appendix D relevant to the desirability of specific components reveals that where significant relationships were found between response and position, administrators and counselors responded more favorably than teachers. All significant relationships were weak, with the strongest Cramer's V (1.8) recorded for Component 4 (one administrator and one counselor assigned to each team) and Component 6 (collaboration would allow early warning of students' problems). The greatest range among mean scores by position was .5 on a 4-point scale, recorded for Component 4.

For components indicating significant relationships between response and subject area, English teachers consistently gave the most favorable responses and mathematics teachers the least favorable. Even then, significant relationships were weak, with the strongest Cramer's V (.18) recorded for Component 1 (organizing teachers onto teams, sharing the same teaching and planning schedule). The greatest range among mean scores by subject area was also recorded for Component 1, .6 on a 4-point scale.

Probabilities of Implementing Specific Components

In contrast to responses about the desirability of each component of an interdisciplinary organization, which generally tended to be positive, average responses for the probability of implementing various components tended to be more negative (i.e., only two of eight means were lower than the neutral midpoint of 2.5). There was also an apparent tendency for more desirable components to be perceived as having higher probabilities of being implemented.

Table 4 shows that Component 7 (new teachers given support by team members) was perceived by educators as one of the most desirable components ($M = 1.6$), and also the component with the greatest probability ($M = 2.1$) of being implemented. Assessments of both desirability and probability of implementation revealed no significant relationships between response and position, or between response and subject area for this component.

Component 8 (peer coaching and supervision) was given the next best chance of being implemented ($M = 2.3$). Table E-8 indicates that overall, 58% of the educators responded that this component had an "excellent" or "good" chance of being implemented. Although there was no significant relationship between response and position, 41% of the teachers indicated Component 8 was "questionable", compared with 31% of the administrators, and 30% of the counselors.

As previously stated, Component 6 (teachers

participating in recruiting and selecting new teachers) was identified by educators as being one of the least desirable, and results show that it has the most dismal probability of being implemented ($\underline{M}$ = 2.7). Table E-6 indicates that 65% of the educators surveyed gave this component "little" or "no" chance of being implemented. There were no significant relationships between response and position or between response and subject area.

Contingency tables in Appendix E relevant to implementing specific components indicate there was only one component where a significant relationship was found between response and position. Teachers expressed more pessimism than administrators or counselors toward the probabilities of implementing Component 4 (one administrator and one counselor assigned to each team). The relationship was weak (Cramer's V = .13), and the range of mean scores for this component was only .2 on a 4-point scale. One significant relationship was found between response and subject area, with mathematics teachers expressing more negative feelings than teachers from the other three subject areas toward the probabilities of implementing Component 1 (organizing teachers onto teams, sharing the same teaching and planning schedule. The relationship was weak (Cramer's V = .16) and the range of mean scores among subject areas for this component was only .5.

Barriers to Implementation

The purpose of Research Question 5 was to identify the
most formidable barriers to implementing an
interdisciplinary organization at the high school level.
Fifteen barriers to implementing an interdisciplinary
organization as identified in literature and applicable to
this study were listed on the survey form. Educators were
asked to indicate the extent to which they felt each factor
would function as a barrier to such a reorganizational plan
at the high school level. Possible answers included:
significant barrier = 1, slight barrier = 2, not a problem =
3, and unknown = 4. For purposes of analysis, the "unknown"
category was ignored, as assigning the category a value
would have skewed the results. For each factor, an overall
mean, and means by position and subject area were
determined. Each factor was ranked from most formidable to
least formidable overall and by position and subject area.

Overall ranks, and ranks by position are presented in
Table 5. Overall, educators ranked lack of facilities for
small and large group instruction (M = 1.61), lack of
appropriate space (M = 1.65), and inadequate financing (M =
1.671) as the most formidable barriers to implementing an
interdisciplinary organization at the high school level.
Administrators and teachers ranked these same factors as
being the most significant obstacles to implementing an
interdisciplinary organization, although in a different

Table   5

Perceived Barriers to Implementing an Interdisciplinary
Organization by Position

Overall Rank	$\underline{M}$	Description	Rank by Position[a]		
			Adm	Cns	Tch
1	1.61	Facilities small/large groups	2	2	2
2	1.65	Appropriate space	1	3	3
3	1.671	Inadequate financing	3	4	1
4	1.673	Students' schedules	4	1	4
5	1.93	Teachers' independence	6	5	5
6	2.01	Preparation and training	7	8	6
7	2.02	Varies from establ'd beliefs	9	7	7
8	2.04	Interpersonal differences	5	6	9
9	2.10	Teachers uninvolved/developm't	8	9	8
10	2.30	Administrative support	10	10	10
11	2.36	Staff turnover	11	11	11
12	2.49	Parental/community support	12	12	12
13	2.91	Perceived threat to children	13	13	13
14	2.94	Union/professional org.	15	14	15
15	2.95	State regulations	14	15	14

[a] Position = administrator, counselor, teacher

order. Counselors ranked conflicts involving students'
schedules ($\underline{M}$ = 1.5) as the most significant barrier.
Administrators and teachers ranked conflicts with students'
schedules 4th. Interpersonal differences among staff
members was ranked 5th most formidable by administrators,
6th by counselors, and 9th by teachers. All positions
placed the teachers' union, the perceived threat to
children, and state regulations among the least formidable
barriers.

Teachers' rankings and ranks by subject area are
presented in Table 6. Inadequate financing ($\underline{M}$ = 1.53), lack
of facilities for small and large group instruction ($\underline{M}$ =
1.61), and lack of appropriate space ($\underline{M}$ = 1.63) comprised
the top three barriers as identified by teachers overall.
Conflicts with students' schedules was ranked 4th by
teachers overall, but 1st by mathematics teachers.
Mathematics and science teachers ranked lack of preparation
and training as 5th, but English teachers ranked that factor
8th and social studies teachers 9th. Teachers in all
subject areas indicated that the teachers' union, the
perceived threat to children, and state regulations were
the least formidable barriers.

Satisfaction with the Traditional Departmental Organization

Research Question 6 assessed the extent to which high
school administrators, counselors, and teachers in

Table 6

Perceived Barriers to Implementing an Interdisciplinary
Organization by Subject Area

Teachers'			Rank by Subject Area[a]			
Rank	M	Description	Ss	Eng	Math	Sc
1	1.53	Inadequate financing	1	2	2	2
2	1.61	Facilities small/large groups	4	1	3	3
3	1.63	Appropriate space	3	3	4	1
4	1.68	Students' schedules	2	4	1	4
5	1.89	Teachers' independence	5	5	8	7
6	2.00	Preparation and training	9	8	5	5
7	2.03	Varies from establ'd beliefs	7	9	7	6
8	2.04	Teachers uninvolved/dvlpm't	10	6	6	9
9	2.06	Interpersonal differences	6	7	9	8
10	2.28	Administrative support	8	10	12	11
11	2.33	Staff turnover	11	12	11	10
12	2.37	Parental/community support	12	11	10	12
13	2.93	Perceived threat to children	13	13	13	13
14	2.97	State regulations	14	15	15	14
15	2.98	Union/professional org.	15	14	14	15

[a] Subject area for teachers = social studies, English,
mathematics, science

non-elective disciplines are satisfied with the traditional departmental organization in providing for the needs of educators and students. Two factors were considered in assessing educators' satisfaction with the departmental organization. The first component of the question assessed the extent of educators' satisfaction with the departmental organization in meeting the professional, social, and psychological needs of educators. The second component assessed the extent of educators' satisfaction with the traditional structure in providing for the academic, social, and psychological needs of students. Responses to both components of the question were coded as follows: totally satisfied = 1, somewhat satisfied = 2, somewhat dissatisfied = 3, totally dissatisfied = 4.

Levels of satisfaction are presented in Table 7. For all respondents, the mean of 2.2 indicates that educators are somewhat satisfied with the departmental organization. Analyses of variance produced no significant differences in responses across positions or subject areas. Mean scores of all positions were identical ($\underline{M}$ = 2.2), and slight variations across subject areas were not significant.

Table 8 presents data relevant to the two components of the question. Mean scores indicated that educators were somewhat more satisfied with the departmental organization in providing for their professional, social, and psychological needs ($\underline{M}$ = 2.1), than in providing for

Table 7

Overall Levels of Satisfaction with the Departmental
Organization

Group	$\underline{M}^a$	sd	$\underline{F}$	p value
Total	2.2	.71		
Position			.02	.97
Administrator	2.2	.68		
Counselor	2.2	.69		
Teacher	2.2	.74		
Subject Area			1.52	.20
Social studies	2.0	.65		
English	2.3	.78		
Mathematics	2.2	.71		
Science	2.1	.74		

[a] Response categories for levels of satisfaction: 1 =
totally satisfied, 2 = somewhat satisfied, 3 = somewhat
dissatisfied, 4 = totally dissatisfied

Table 8

Levels of Satisfaction with Specific Components of a
Departmental Organization

Component	Overall $\underline{M}$[a]	sd
1. Providing for educators' professional, social, and psychological needs.	2.1	.73
2. Providing for students' academic, social, and psychological needs.	2.3	.69

[a] Response categories for levels of satisfaction: 1 = totally satisfied, 2 = somewhat satisfied, 3 = somewhat dissatisfied, 4 = totally dissatisfied

students' academic, social, and psychological needs (M = 2.3).

Contingency tables in Appendix F relevant to satisfaction with the departmental organization show that there were no significant relationships between response and position, or between response and subject area for either component of this question. It should be noted however, that Table F-1 indicates 74% of the educators felt either "totally satisfied" or "somewhat satisfied" with the departmental organization in meeting their needs as educators, but only 60% of those surveyed indicated the same level of satisfaction with the traditional structure in meeting the needs of their students.

CHAPTER 5

Summary, Conclusions, and Recommendations

Since the 19th century, high schools have been organized along departmental lines. Such an organizational structure discourages interactions among educators and makes it difficult for students to make connections among the disciplines. This tradition-bound organization has created its own inertia which resists any attempts at change.

Recently, prominent educators (Boyer, 1983; Cawelti, 1989; Goodlad, 1984; Sizer, 1984) have recommended organizing high schools into smaller interdisciplinary sub-units, or teams, citing potential academic and social benefits for students, and professional and psychological benefits for teachers.

Researchers have stressed the importance of gaining the support of those who are charged with implementing change (Berman & McLaughlin, 1978; Hall & Hord, 1987; Sarason, 1971; Stolsmark, 1978). Without this support, reform efforts may be undermined and projects may not be implemented as planned.

The purpose of this study was to assess the perceived desirability of implementing an interdisciplinary organization at the high school level and to determine barriers to such a reorganizational plan. A questionnaire was developed and attitudes were assessed by collecting data

from administrators, counselors, and teachers in non-elective disciplines (social studies, English, mathematics, and science) in Virginia high schools with enrollments exceeding 1500 students.

Summary of Findings

Answers to six research questions were sought. The following presents the specific research questions and a summary of the major findings of each.

Research Question 1

Do high school administrators, counselors, and teachers in non-elective disciplines perceive an interdisciplinary organization as desirable?

Educators indicated an overall acceptance of an interdisciplinary organization, with the global summary score falling between the "very desirable" and "generally acceptable" categories. Analyses of variance found no significant differences in responses across positions or subject areas. On a 4-point scale, there was a range of only .3 in mean scores among both positions and subject areas.

Research Question 2

What components of an interdisciplinary organization do high school administrators, counselors, and teachers in non-elective disciplines perceive to be desirable?

The most desired components were: (1) students making connections among the disciplines, (2) opportunities for small and large group instruction, and (3) teachers sharing ideas and materials. While 90% of the educators surveyed indicated it was "very desirable" or "generally acceptable" for students to make connections among the disciplines, significant relationships were found between response and position for the other two most desired components, with administrators' and counselors' responses significantly more positive than teachers'. The relationship between response and position for three of the next six most highly desired-components was also significant, with administrators and counselors again responding more positively than teachers.

In the seven of the eight components where a significant relationship was found between response and subject area, English teachers' responses were consistently the most favorable, and mathematics teachers' responses consistently the least favorable. The exception was Component 1b (efficient use of facilities) where English teachers and social studies teachers recorded the most favorable response, and science teachers the least favorable.

Research Question 3

Do high school administrators, counselors, and teachers in non-elective disciplines perceive that implementing an interdisciplinary organization in their school is probable?

Educators were evenly split in their perceptions of the probability of implementing an interdisciplinary organization. The global summary score ($\underline{M}$ = 2.5) fell exactly between the categories "good chance" and "little chance". Analyses of variance indicated there were no significant differences in responses across positions or subject areas. On a 4-point scale, there was a range of only .1 in mean scores among positions, and .2 among subject areas.

Research Question 4

What components of an interdisciplinary organization do high school administrators, counselors, and teachers in non-elective disciplines feel have the greatest probabilities of being implemented in their school?

Component 7 (new teachers given support by team members) was perceived as one of the most desired components, and the component with the greatest probability of being implemented. Educators indicated Component 8 (peer coaching and supervision) had the second-best probability of being implemented. No significant relationships were found between response and position, or between response and subject area for either component.

Research Question 5

What barriers to implementing an interdisciplinary organization in their school do high school administrators, counselors, and teachers in non-elective disciplines

perceive to be the most formidable?

Means were computed for each barrier, and then each barrier was ranked from most formidable to least formidable. Educators specifically ranked lack of facilities for small and large group instruction, lack of appropriate space, and inadequate financing as the most formidable. Conflicts with students' schedules was identified as the 4th most formidable barrier overall, 4th by administrators and teachers, but 1st by counselors. Interpersonal differences among staff members was ranked 5th by administrators and 6th by counselors, but 9th by teachers.

Teachers by subject area also ranked inadequate financing, lack of facilities for small and large group instruction, and lack of appropriate space as being the most formidable. Although teachers overall ranked conflicts with students' schedules as the 4th most formidable barrier, mathematics teachers ranked this factor 1st. Mathematics teachers and science teachers ranked lack of preparation and training 5th, but English teachers and social studies teachers ranked that factor 8th and 9th respectively.

Research Question 6

To what extent are high school administrators, counselors, and teachers in non-elective disciplines satisfied with the traditional departmental organization in providing for the needs of educators and students?

Overall, educators indicated they were somewhat satisfied with the departmental organization. Mean scores among positions were identical ($\underline{M}$ = 2.2). Although social studies teachers reported the greatest level of satisfaction and English teachers the least, there was only a range of .3 in mean scores on a 4-point scale. The chi-square analysis revealed no significant relationship between response and subject area.

Chi-square analyses indicated that 26% of the educators felt at least some dissatisfaction with the departmental organization in meeting their professional, social, and psychological needs. Of those surveyed, 40% indicated some dissatisfaction with the departmental organization in providing for the academic, social, and psychological needs of their students. No significant relationship was found between response and position or response and subject area for either of the components of the question.

Conclusions

Based on the findings it can be concluded that educators generally accept the concept of an interdisciplinary organization. Although no significant difference was found across positions for the global summary score, there were significant relationships found between response and position for 13 of the 25 components.

For 12 of the 13 components, teachers' responses were significantly more negative than administrators' or counselors' responses. Because teachers would be the ultimate implementers of such a reorganizational plan and did not express a strong desire for change, organizational restructuring involving interdisciplinary organizations on a large-scale basis face formidable odds against succeeding.

Teachers by subject area demonstrated significant differences of opinion toward various components of an interdisciplinary organization. Compared with teachers in the other subject areas, English teachers consistently identified the various components of an interdisciplinary organization as desirable. A higher percentage of mathematics teachers felt components were questionable or unacceptable. Large scale reform efforts involving interdisciplinary organizations may face greater acceptance from teachers in certain subject areas (e.g., English) and more resistance from teachers in others (e.g., mathematics).

Educators generally identified administrative factors as the most formidable barriers to implementing an interdisciplinary organization, specifically citing lack of facilities for small and large group instruction, lack of appropriate space, and inadequate financing. Because the study dealt with perceptions, it is not known whether these factors would actually function as significant barriers. Perhaps the biggest barrier to such reorganization was

evident in the section of the study involving perceptions of chances of implementation. Although educators were evenly divided between "good chance" and "little chance", over 50% of those surveyed indicated they were pessimistic. Educators interested in implementing this type of organization may be faced with the ingrained negativism of a significant number of staff members who feel "this will never work".

Over 60% of the educators indicated they were totally or somewhat satisfied with the current departmental organization. This level of satisfaction expressed by educators certainly cannot be used to support large-scale reform efforts involving interdisciplinary organizations.

Recommendations

Over 25% of the teachers surveyed indicated some level of dissatisfaction in meeting their professional needs, and 40% recorded levels of dissatisfaction in meeting the needs of their students. Similar percentages were reported for administrators and counselors. Interdisciplinary organizations should be implemented at the high school level.

Reorganizational efforts should be school-wide to take advantage of the structure's most desired components (e.g., support for beginning teachers, peer coaching, opportunities for flexible scheduling and grouping, interrelating

disciplines). Reorganizational activities may also begin on a limited basis with small teams (e.g., 50 students assigned to two teachers from different disciplines who share the same teaching and planning schedule). Beginning on a small scale will minimize disruptions to fixed organizational variables (e.g., schedules, facilities, space, and finances).

The teams will have the greatest chance of success if they are staffed by teachers who are flexible, receptive to change, and interested in working together. Voluntary participation in such a program should minimize psychological barriers to implementation.

While teachers from any discipline may benefit from collaborative organizational arrangements, it may be easier for teachers in English and social studies to integrate curricula than English and mathematics. Because English teachers demonstrated the most receptive attitude toward an interdisciplinary organization, it is recommended that change agents begin their recruitment activities with teachers in that discipline and expand from there.

Because an interdisciplinary organization allows for flexibility in scheduling time and people, it is recommended that once a team of teachers and students has been organized, the teachers be allowed to group and schedule students within the specified time block at their discretion, as approximately 75% of the educators surveyed

indicated these functions were very desirable or generally acceptable.

While studies of the effects of team teaching on academic achievement are inconclusive, this study indicates that the real benefits of such restructuring may be in other areas (e.g., support for beginning teachers, peer coaching, flexible scheduling and grouping). Proponents of such restructuring would be well-advised to promote these benefits rather than focusing on academic achievements.

Recommendations for Further Research

Schools are complex social institutions. While this study provided a general overview of attitudes of a limited number of educators in selected Virginia high schools, such generalized findings may not be applicable to specific situations.

The findings of this study should be used as a point of departure for educators interested in implementing an interdisciplinary organization in their high school. The questionnaire used in this study, or a similar instrument, should be used to assess educators' attitudes at a specific site to determine possible organizational arrangements and potential barriers peculiar to that institution.

This study was limited to high schools with enrollments exceeding 1500 students. This study should be replicated to determine if there is significant difference in attitudes of

educators in high schools with smaller enrollments.

There are high schools with practicing interdisciplinary organizations in place. Follow-up studies should be conducted to assess teachers' and students' attitudes toward such an organization plan, and quantifiable changes in students' achievement or behavior.

This study assessed educators' perceived desirability and chances of implementing an interdisciplinary organization. A follow-up study should be conducted to determine how many educators would be willing to participate in such restructuring.

Discussion

By any other name, an interdisciplinary organization is team teaching. Unfortunately educators, particularly at the high school level, have a negative mindset toward such an organizational plan. There is nothing to lose by organizing teachers and students onto relatively autonomous teams. Teachers do not have to give up their independence, disciplines do not have to be correlated (Scholz, 1978), and academic departments do not have to be abolished (Warwick, 1971).

Organizing teachers and students together during the same block of time allows a great deal of flexibility in the use of time, facilities, and grouping arrangements, places teachers in the center of the decision-making process, and creates increased opportunities for collaboration among

professionals. Once a team organization is in place, the flexibility and opportunities made available by such a structure are determined by the dynamics of the individuals involved.

Advocates of team arrangements are usually student-centered rather than subject-centered. The student-centered vs. subject-centered nature of schooling will continue without resolution. While a team organization can accommodate teachers with both student-centered and subject-centered philosophies, the increased collaboration and sharing that is an inherent element of a team organization can be of tremendous benefit to the academic, psychological, and social development of students. The sense of community and bonding that develops from such an organizational arrangement, creates a supportive environment which has shown to increase academic achievement, improve behaviors, and improve teacher morale (Arhar, et al., 1988; Dollar, 1983; Goodlad, 1984).

Elementary, middle school, and junior high educators have developed programs that address the multi-faceted needs of students in today's pluralistic society. It is no longer sufficient for high school educators to be concerned solely with the academic development of the nation's youth. Upon entering ninth or tenth grade, students do not develop armor to deflect confusion about their psychological and social growth. High school educators must accept a more global

perspective of their responsibilities to adolescents'
development. Such a perspective and resulting strategies,
however, cannot be developed within the cellular structure
of the traditional departmental organization.

Only through highly interactive, collaborative
organizational structures can educators use their training,
experience, and instincts to address the needs of
adolescents in high school. Such collaborative arrangements
increase teachers' confidence, encourage professional
growth, and improve teacher morale (Bryk & Thum, 1989;
Chrisco, 1989; George & Oldaker, 1985).

It is time for a change.

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APPENDIX A

CORRESPONDENCE

October 27, 1989

John L. Goodlad
College of Education
University of Washington/Seattle
Seattle, WA 98195

Dear Sir:

I am beginning a study for a doctoral dissertation under the
direction of Dr. Thomas Gatewood at Virginia Polytechnic
Institute and State University.
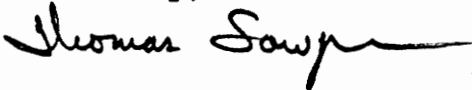
The dissertation will propose a model involving the scheduling of
high school teachers and students into sub-unit teams. Teachers
will share the same block of instructional time and the same
planning period. This integrated, collaborative venture will
replace the traditional, departmentalized structure and will
provide opportunities for professional interaction, cooperative
learning, integrated studies, peer coaching and supervision,
varied grouping arrangements, and will coordinate student
personnel and support services.

The research will assess the desirability of teachers and
administrators at the high school level of implementing the
model, or components of the model, and determine perceived
barriers to implementing such a reorganizational plan.

Do you know of any related studies that specifically assess
teachers' or administrators' attitudes concerning the
desirability of such an innovation prior to implementation, or
studies which identify perceived barriers to such a
reorganizational plan?

Any information will be greatly appreciated, and I will be happy
to share the results of my research with you if requested.

Sincerely,

Thomas Sawyer

9 McPherson Circle
Sterling, VA 22170

UNIVERSITY OF WASHINGTON
SEATTLE, WASHINGTON 98195

CENTER FOR EDUCATIONAL RENEWAL
(206) 543-6230

College of Education, DQ-12
Institute for the Study of Educational Policy

November 13, 1989

Mr. Thomas Sawyer
9 McPherson Circle
Sterling, VA 22170

Dear Mr. Sawyer:

Thank you for your letter of October 27. I am sorry that Dr. Goodlad is
not able to respond at the present time. He is in semi-isolation writing
the final book/report growing out of the current study of the education of
educators.

During a brief conversation with him, I passed along your inquiry and he
had the following suggestions:

1. Harold Howe, now professor at the Graduate School of Education,
    Harvard University, was "messing around" with this topic many
    years ago. He may be a good source of information.

2. The staff at Finn Hill Junior High School in Kirkland,
    Washington, has been working on this. You may wish to contact
    Mr. Bob Strode, Principal, (206)821-6544. His address is 8040 NE
    132nd, Kirkland, WA 98034.

I hope this information will assist you in your research. Best wishes on
your dissertation.

Sincerely,

Paula McMannon
Secretary

ASCD

Association for Supervision and Curriculum Development
1250 N. Pitt Street, Alexandria, VA 22314-1403   (703) 549-9110   FAX (703) 549-3891

December 6, 1989

Mr. Thomas Sawyer
9 McPherson Circle
Sterling, VA 22170

Dear Mr. Sawyer:

Thank you for your inquiry.

Unfortunately, I have only general information on scheduling and
do not have access to any studies specifically assessing
attitudes concerning the innovation of sub-unit teams prior to
implementation. Nor do I have studies identifying barriers to
such a plan. However, the idea is an interesting one and I would
certainly appreciate receiving information on the results when
your study is completed.

I will keep your letter on file and if I come across any
materials or studies pertaining to your topic, I would be happy
to send them to you.

Best wishes for a happy holiday season.

Sincerely,

Lisa S. Street
Information Specialist

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

COLLEGE OF EDUCATION — NORTHERN VIRGINIA GRADUATE CENTER

February 10, 1990

Lisa L. Street
Association for Supervision and Curriculum Development
1250 N. Pitt Street
Alexandria, VA   22314-1403

Dear Ms. Street:

I am writing a dissertation entitled "Interdisciplinary Organization at the High School Level: A Study of Perceived Desirability and Barriers". During my prospectus examination, I recommended and supported an argument favoring interdisciplinary teams at the high school level. One of my committee members referred to a section of the prospectus describing the ASCD's "future planning consortium" and their reorganizational plans that would accommodate interdisciplinary teams. The committee member found the reorganizational plans very interesting but wanted to know what difference the restructuring has made.

Certainly, many articles on interdisciplinary team organizations tend to be promotional or anecdotal in nature. I would like to know if the ASCD has conducted follow-up studies regarding changes in attitudes of teachers, students, or parents, or differences in students' achievement following implementation of the interdisciplinary teams.

Any information regarding follow-up of the consortium's reorganizational efforts will be greatly appreciated.

Thank you.

Sincerely,

Thomas Sawyer

2990 Telestar Court, Falls Church, Virginia 22042

ASCD

Association for Supervision and Curriculum Development
125C N. Pitt Street, Alexandria, VA 22314-1403   (703) 549-9110   FAX (703) 549-3891

March 8, 1990

Mr. Thomas Sawyer
College of Education
Northern Virginia Graduate Center
Virginia Polytechnic Institute and State University
2990 Telestar Court
Falls Church, VA   22042

Dear Mr. Sawyer:

Please forgive my tardy response to your letter concerning ASCD's
future consortium and interdisciplinary teaming.

Dr. Cawelti, ASCD's Executive Director, recently returned from
our Annual Conference and I was able to get some information on
the consortium's work from him.

Catalina High School in Tucson, Arizona has been involved in the
interdisciplinary teaching aspect. You may want to contact them
for information on teaming. The principal's name is Joseph
Hines, and the address is 3645 E. Pima Street, Tucson, Arizona
85716, (602) 881-3153.

If I can be of further assistance in the future, please feel free
to contact me.

Sincerely,

Lisa S. Street
Information Specialist

Coalition
of Essential Schools

February 21, 1990

Thomas Sawyer
Virginia Polytechnic Institute
   and State University
College of Education
Northern Virginia Graduate Center
2990 Telestar Court
Falls Church, VA 22042
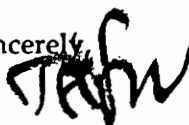
Dear Mr. Sawyer,

Thank you for your letter of February 10. Yes, we too want to know what difference interdisciplinary restructuring has made: we know from anecdotal evidence that it has made a great difference, both in the new depths of students' understanding and in teachers' increased enthusiasm and joy.

We have not, as of yet, conducted any formal follow-up studies to quantify these changes (though we do know—from visiting schools that are seriously trying ways to connect the different areas of their curriculum, observing classrooms and talking to teachers and students—that the changes are occurring). If this kind of "follow-up" interests you, do let us know. We can provide names of schools which might be good places for you to visit and see the effects of interdisciplinary efforts.

If we can be of assistance in any other way, please feel free to get back in touch. Thanks again for your interest.

Sincerely,

Theodore R. Sizer
Chairman

TRS/JSD

Text of Original Letter

I am beginning a study to assess administrators', teachers', and counselors' attitudes toward implementing an interdisciplinary organization at the high school level. The study is under the direction of Dr. Thomas Gatewood at Virginia Polytechnic Institute and State University.

There have been many proposals aimed at restructuring the nation's high schools. Boyer (1983), Cawelti (1989), Goodlad (1984), and Sizer (1988) recommend scheduling teachers and students in smaller interdisciplinary communities.

A national Gallup Poll published in Phi Delta Kappan magazine (1989) indicates that public school parents consider large schools/overcrowding as one of the biggest problems facing the public schools. Organizing and scheduling teachers and students in smaller interdisciplinary communities may be of particular advantage in large high schools. Research has linked smaller organizational structures with increased levels of job satisfaction, work effectiveness, and efficacy, while providing opportunities for professional growth, and conferring benefits on the affective development of students. A model describing the objectives and structure of an interdisciplinary organization is enclosed.

A major factor in enhancing or inhibiting the implementation process is the initial interest in the plan shown by teachers and administrators. Educational policy that is incompatible with educators' beliefs will not be implemented as intended. If educators do not perceive an interdisciplinary organization as desirable, large-scale reform efforts involving such structures may be futile. Proposals more nearly compatible with educators' beliefs will have to be developed and evaluated before the call for smaller, more personalized structures that stress interdisciplinary programs of instruction in the high school can be accepted or rejected.

This study is surveying educators in 57 Virginia high schools with enrollments exceeding 1500 students. Your high school has been randomly selected to help assess the attitudes of counselors and administrators toward an interdisciplinary organization. I would appreciate it if you would distribute the enclosed questionnaires to counselors and administrators in your high school. Questionnaires are not coded to identify particular schools or school districts, ensuring respondents' anonymity. Each questionnaire has a cover letter and a stamped, pre-addressed envelope. The questionnaire requires approximately 15 minutes to complete.

I appreciate your interest and cooperation. Survey results will be sent directly to you in April.

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

COLLEGE OF EDUCATION — NORTHERN VIRGINIA GRADUATE CENTER

March 29, 1990

Dear Fellow Educator:

Many proposals aimed at improving the nation's high schools involve more of everything--more periods in the day, more school days, a longer school day, and increased requirements for students.

Such changes often occur without the input of those charged with implementing the innovations.

One proposal that does not require "more" of something, involves scheduling teachers and students in interdisciplinary communities. The enclosed questionnaire is intended to assess the attitudes of teachers, administrators, and counselors in large high schools toward such an interdisciplinary organization. A description of the objectives and structure of such an organization is on the front page of the questionnaire.

This survey involves 57 high schools in the state of Virginia. The questionnaires are <u>not</u> coded to identify particular schools or school districts, en<u>sur</u>ing respondents' anonymity. Completion of the questionnaire will require approximately 15 minutes.

PLEASE RETURN THE QUESTIONNAIRE BY APRIL 12th using the pre-addressed, stamped envelope.

A final report of the findings will be sent to your school. Thank you for your time and cooperation.

Sincerely,

Thomas Sawyer

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

COLLEGE OF EDUCATION — NORTHERN VIRGINIA GRADUATE CENTER

April 10, 1990

Dear Fellow Educator:

Recently, you were asked to participate in a study to assess educators' attitudes toward implementing an interdisciplinary organization at the high school level. If you have returned the survey, please accept my gratitude for your time and thoughtful responses.

If you have not yet completed the survey, it is understandable that the demands on your time may have made an immediate response difficult. Your participation, however, is essential in assessing educators' attitudes toward this reorganizational plan. If educators do not perceive an interdisciplinary organization as desirable, school improvement efforts more compatible with educators' beliefs will have to be developed and evaluated.

A reminder that the study involves 57 high schools, and individual respondents are ensured of anonymity. Please use the stamped, pre-addressed enveloped provided with the questionnaire. Survey results will be mailed to your school shortly.

Thank you again.

Thomas Sawyer

APPENDIX B

SCHOOLS PARTICIPATING IN THE SURVEY

Population of Public High Schools in the State of Virginia
with Enrollments Exceeding 1500 Students

School	1[a]	2[b]	School	1[a]	2[b]
*Albermarle	1628	62	Lake Braddock	4050	NR
Annandale	2123	12	Langley	1511	10
*Bird	1632	65	Lee	1676	7
Chantilly	2409	12	Lee-Davis	1536	DNP
Clover Hill	1777	DNP	Madison	1929	12
Cox	1910	10	Maury	1745	DNP
Denbigh	2416	NR	McLean	1552	12
Fairfax City	1851	DNP	Menchville	2197	12
Fauquier	1732	12	Midlothian	1936	NR
First Colonial	1813	12	*Monacan	1846	80
*Franklin County	1923	70	Mount Vernon	1635	12
Gar-Field	2706	NR	*North Stafford	2003	59
Glass	1557	10	*Norview	1783	63
*Glouster	1544	60	Oakton	1952	DNP
Granby	1568	DNP	Osbourn Park	2366	DNP
Great Bridge	1770	12	Petersburg	1538	NR
Green Run	3154	DNP	Potomac	1715	12
*Halifax County	1638	54	Pulaski County	2102	NR
Hampton	1620	10	Robinson	4022	12
Hayfield	2401	DNP	South Lakes	2112	12
Hermitage	1649	11	Stafford	1500	NR
Herndon	2132	DNP	Washington	1891	NR
Jackson	1795	12	West Potomac	1714	12
Jefferson	1601	DNP	West Springfield	2366	12
Kecoughtan	1754	11	Williams	2059	12
*Kellam	2029	74	*Wood	2079	80
Kempsville	1881	12	Woodbridge	2906	NR
Lafayette	1669	NR	Woodson	1848	12

[a] Student enrollment

[b] Number of surveys verified by principals as having been
    distributed in that school

* Random sample of 10 schools where all teachers were
   surveyed

DNP Schools that chose not to participate

NR Schools not responding to initial or follow-up contacts

Source: Public Secondary School Accreditation Report 1988-89
        State Department of Education, Richmond, Virginia

APPENDIX C

QUESTIONNAIRE

SURVEY FORM

DESIRABILITY AND PROBABILITY OF IMPLEMENTING
AN INTERDISCIPLINARY ORGANIZATION AT THE HIGH SCHOOL LEVEL

1. Please indicate your position:

    Administrator____

    Counselor____

    Teacher____

2. If you are a teacher please indicate your current teaching area(s).

    Social studies____   Mathematics____

    English____   Science____

Please read the following description of a potential reorganizational model for high schools.

COMPONENTS OF AN INTERDISCIPLINARY ORGANIZATION: An interdisciplinary organization creates smaller, more personal units within the high school by scheduling a few teachers from non-elective disciplines with the same group of students during a specified block of time. Within each unit, two to four teachers are scheduled to share the same block of instructional time and the same planning period. The schedule consists of at least two consecutive periods during which the teachers are responsible for scheduling and grouping students assigned to them. One administrator and one guidance counselor are assigned to each team.

The purposes for such an organizational structure are as follows:

Improving the learning environment by:

  —coordinating instructional programs

  —increasing teacher awareness of student performance

  —coordinating support personnel and support services

  —providing opportunites for varied student grouping arrangements, innovative uses of time
    within the specified time block, and interdisciplinary teaching

Improving the organizational climate through:

  —teacher empowerment

  —professional interaction among peers.

The following questions are an attempt to assess the degree to which you feel components of the model described above would be desirable, and the probabilities for implementing each component of the model in your school. Questionnaires are not coded to identify particular schools or school districts, ensuring respondents' anonymity.

A. DIRECTIONS: Organizational and operational components of the model are listed below. Please indicate your opinion about the desirability of each component described, and the degree to which you feel each component could be implemented in your school.

Degree of Desirability	Chances of Implementation
1. Very desirable	1. Excellent chance
2. Generally accept	2. Good chance
3. Questionable	3. Little chance
4. Unacceptable	4. No chance

1. Teachers from different subject areas would be organized into two to four person teams, sharing the same teaching and planning schedule (e.g., social studies/English share two, 50 minute instructional periods and one planning period; or social studies/English/math/science share four, 50 minute instructional periods and one planning period).

    1   2   3   4   1   2   3   4

Teachers on teams with coordinated instructional and planning schedules would allow:

a. more efficient use of equipment (e.g., computers, lab, audiovisual).

    1   2   3   4

b. more efficient use of facilities (e.g., classrooms, auditoriums).

    1   2   3   4

c. more efficient use of resources (e.g., guest speakers, films, field trips).

    1   2   3   4

d. time periods to be extended or reduced according to specific needs (e.g., guest speakers, flims, labs).

    1   2   3   4

2. Each team of teachers from different subject areas would share the same group of students during their coordinated instructional schedule (e.g., a two teacher team assigned approximately 50 students to be scheduled into two, 50 minute periods; or a team of four teachers assigned approximately 100 students to be scheduled into four, 50 minute periods).

    1   2   3   4   1   2   3   4

3. The team of teachers from different subject areas would jointly assess, diagnose, prescribe, and plan the educational program for the same group of students.

    1   2   3   4   1   2   3   4

Such a coordinated educational program would allow:

a. scheduling flexibility for a homeroom or teacher-advisor program.

    1   2   3   4

b. the teaching team rather than the building administration to make decisions concerning grouping arrangements (e.g., by ability, learning style, heterogeneously, etc.).

    1   2   3   4

c. an individual student's class schedule can be changed within the time block by consensus of the teaching team rather than the building administration.

    1   2   3   4

	Degree of Desirability				Chances of Implementation			
	1. Very desirable				1. Excellent chance			
	2. Generally accept				2. Good chance			
	3. Questionable				3. Little chance			
	4. Unacceptable				4. No chance			

Such a coordinated educational program would allow:

d. teachers on the team to encourage students to make connections between/among the disciplines through opportunities for interdisciplinary teaching and learning.   1 2 3 4

e. opportunities for small group and large group sessions with students.   1 2 3 4

f. students to have an opportunity for independent or self-paced instruction.   1 2 3 4

g. increased opportunities for collaborative learning groups.   1 2 3 4

h. teachers on the team to be aware of each student's performance in other teacher's classrooms.   1 2 3 4

i. most of a student's teachers to be available at the same time in order to confer with parents.   1 2 3 4

j. teachers on the team an opportunity to share ideas and materials with teachers from other subjects on the team.   1 2 3 4

k. a "community" atmosphere to develop among teachers and students on the team.   1 2 3 4

4. One administrator and one counselor would be assigned to, and meet weekly with, each teaching team during the planning period.   1 2 3 4   1 2 3 4

Such collaboration among the teaching team, administrator, and counselor would allow:

a. coordination of strategies in addressing individual student's or group's academic, social, or emotional needs.   1 2 3 4

b. communications among team teachers, administrators, and counselors to serve as an "early warning system" of indivdual student's or group's academic, social, or emotional problems.   1 2 3 4

5. Leadership positions on the team would be available through a rotating or hierarchical structure.   1 2 3 4   1 2 3 4

6. Each team of teachers would participate in the recruitment and selection of new teachers on the team.   1 2 3 4   1 2 3 4

7. New teachers on the team would be given instructional and emotional support from established members of the team.   1 2 3 4   1 2 3 4

8. Teachers on the team would be actively engaged in the supervision process through peer coaching/peer assistance.   1 2 3 4   1 2 3 4

PERCEIVED BARRIERS TO IMPLEMENTING AN INTERDISCIPLINARY ORGANIZATION

B. DIRECTIONS: The following are possible barriers to implementing an interdisciplinary organization at the high school level. Please indicate the extent to which you feel each factor would function as a barrier to such a reorganizational plan in your school.

	Significant Barrier	Slight Barrier	Not a Problem	Unknown
1. Administrative support	1	2	3	4
2. Staff turnover	1	2	3	4
3. Lack of parental or community support	1	2	3	4
4. Lack of appropriate space	1	2	3	4
5. Inadequate financing	1	2	3	4
6. Conflict with state regulations	1	2	3	4
7. Lack of preparation and training	1	2	3	4
8. Conflicts involving students' schedules	1	2	3	4
9. Teachers would have to give up their independence	1	2	3	4
10. The teachers' union or professional organization	1	2	3	4
11. Teachers not having a role in developing team organization	1	2	3	4
12. Team organization varies too much from established beliefs and customs	1	2	3	4
13. Lack of facilities for small and large group instruction	1	2	3	4
14. The team concept would be perceived as a threat to children	1	2	3	4
15. Incompatibility and interpersonal differences among the instructional staff	1	2	3	4

C. Please indicate the extent to which you are satisfied with the traditional departmental organization in providing for:

	Totally Satisfied	Somewhat Satisfied	Somewhat Dissatisfied	Totally Dissatisfied
1. your professional, social, and psychological needs as an educator				
2. the academic, social, and psychological needs of your students				

Additional comments: _____

_____

_____

_____

CONTINGENCY TABLES, CHI-SQUARE ANALYSES, AND MEAN SCORES

FOR THE DESIRABILITY OF EACH COMPONENT

The following tables present data relevant to the perceived desirability of each specific organizational and operational component on the questionnaire. Data include response percentages, chi-square statistics, and mean scores by position and subject area. The items on the survey were coded as follows:

$$1 = \text{very desirable}$$

$$2 = \text{generally acceptable}$$

$$3 = \text{questionable}$$

$$4 = \text{unacceptable}$$

Data are based on the following $\underline{N}$'s:

Total	491
Position	
Administrator	96
Counselor	121
Teacher	274
Subject Area	
Social Studies	56
English	95
Mathematics	65
Science	58

Table D-1

Component 1. Organizing Teachers onto Teams, Sharing the
Same Teaching and Planning Schedule

				Response%		
Group	M	sd	1	2	3	4
Position						
Total	2.0	.86	31.4	39.5	23.7	5.4
Administrator	1.8	.80	37.9	40.0	20.0	2.1
Counselor	1.9	.84	33.9	41.3	20.7	4.1
Teacher	2.1	.90	27.9	38.5	26.4	7.2

Chi-square = 8.39   p = .21   Cramer's V ---

Subject Area						
Total	2.1	.88	27.6	39.2	26.1	7.1
Social studies	2.1	.86	26.8	41.1	26.8	5.4
English	2.1	.86	40.4	37.2	18.1	4.3
Mathematics	1.8	.86	20.0	26.7	41.7	11.7
Science	2.4	.94	15.5	53.4	22.4	8.6

Chi-square = 26.94   p = .001*   Cramer's V = .18

*p<.05

Table D-2

Component 1a. Efficient Use of Equipment

Group	M	sd	Response%			
			1	2	3	4
Position						
Total	1.9	.82	37.7	36.9	22.7	2.7
Administrator	1.8	.74	37.9	42.1	20.0	0.0
Counselor	1.8	.80	41.5	37.4	19.5	1.6
Teacher	1.9	.88	35.9	34.8	25.2	4.1

Chi-square = 8.34   p = .21   Cramer's V ---

Group	M	sd	Response%			
Subject Area						
Total	1.9	.87	35.5	35.2	25.3	4.0
Social studies	1.9	.79	35.7	37.5	26.8	0.0
English	1.8	.89	42.6	37.2	13.8	6.4
Mathematics	2.0	.88	32.3	32.3	32.3	3.1
Science	2.1	.90	27.6	32.8	34.5	5.2

Chi-square = 14.99   p = .09   Cramer's V ---

Table D-3

Component 1b.   Efficient Use of Facilities

				Response%		
Group	M	sd	1	2	3	4
Position						
Total	2.0	.84	32.9	37.6	26.5	3.1
Administrator	2.0	.87	33.7	30.5	33.7	2.1
Counselor	1.8	.77	37.7	41.0	20.5	0.8
Teacher	2.0	.86	30.4	38.5	26.7	4.4

Chi-square = 10.56   p = .10   Cramer's V ---

Subject Area						
Total	2.0	.84	30.0	39.2	26.4	4.4
Social studies	1.9	.75	30.9	43.6	25.5	0.0
English	1.9	.87	36.8	42.1	14.7	6.3
Mathematics	2.1	.86	27.7	33.8	35.4	3.1
Science	2.2	.87	20.7	36.2	36.2	6.9

Chi-square = 17.69   p = .03*   Cramer's V = .14

* p<.05

Table D-4

Component 1e. Efficient Use of Resources

| | | | | Response% | | |
Group	M	sd	1	2	3	4
Position						
Total	1.6	.73	46.8	40.1	10.6	2.5
Administrator	1.6	.64	48.4	43.2	8.4	0.0
Counselor	1.5	.68	50.4	41.5	6.5	1.6
Teacher	1.7	.81	44.6	38.4	13.3	3.7

Chi-square = 9.70   p = .13   Cramer's V ---

Subject Area						
Total	1.7	.80	44.5	38.7	31.1	3.6
Social studies	1.6	.86	48.2	33.9	17.9	0.0
English	1.6	.83	53.7	35.8	4.2	6.3
Mathematics	1.9	.84	33.8	43.1	17.2	1.7
Science	1.8	.77	37.9	43.1	17.2	1.7

Chi-square = 18.84   p = .02*   Cramer's V = .15

*p<.05

Table D-5

Component 1d. Extend or Reduce Time Periods

				Response%		
Group	M	sd	1	2	3	4
Position						
Total	1.7	.85	49.3	32.5	13.5	4.7
Administrator	1.7	.81	46.3	34.7	16.8	2.1
Counselor	1.6	.78	48.8	36.3	12.2	2.4
Teacher	1.7	.91	50.6	29.9	12.9	6.6

Chi-square = 7.49   p = .27   Cramer's V ---

Subject Area						
Total	1.7	.90	50.7	29.9	12.8	6.6
Social studies	1.8	.84	39.3	42.9	12.5	5.4
English	1.6	.91	60.0	27.4	4.2	8.4
Mathematics	1.9	.99	40.0	30.8	20.0	9.2
Science	1.6	.85	58.6	20.7	19.0	1.7

Chi-square = 23.49   p = .005*   Cramer's V = .16

*p<.05

Table D-6

Component 2. Teachers Share the Same Group of Students

				Response%		
Group	M	sd	1	2	3	4
Position						
Total	1.9	.85	34.6	39.8	19.9	5.6
Administrator	1.7	.76	41.7	42.7	13.5	2.1
Counselor	1.8	.83	40.5	36.2	20.7	2.6
Teacher	2.0	.91	29.6	40.4	21.9	8.1

Chi-square = 14.71　　　　p = .02*　　　　Cramer's V = .12

Subject Area						
Total	2.0	.89	20.5	34.6	23.9	21.0
Social studies	2.0	.85	22.2	43.2	21.0	13.6
English	1.8	.87	17.3	36.4	21.8	24.5
Mathematics	2.2	1.01	30.5	22.0	23.7	23.7
Science	2.2	.86	4.5	27.3	45.5	22.7

Chi-square = 18.93　　　　p = .02*　　　　Cramer's V = .15

*p<.05

Table D-7

Component 3. Teachers Jointly Plan the Educational Programs
for Students

			Response%			
Group	M	sd	1	2	3	4
Position						
Total	1.8	.84	37.9	37.7	19.8	4.6
Administrator	1.6	.75	50.5	35.1	13.4	1.0
Counselor	1.8	.80	41.4	37.9	19.0	1.7
Teacher	2.0	.91	31.8	38.6	22.5	7.1

Chi-square = 18.75   p = .004*   Cramer's V = .13

Group	M	sd	1	2	3	4
Subject Area						
Total	2.0	.89	32.2	38.5	22.2	7.0
Social studies	2.0	.89	34.5	32.7	29.1	3.6
English	1.8	.93	44.7	34.0	13.8	7.4
Mathematics	2.2	.93	20.3	42.2	25.0	12.5
Science	2.1	.79	22.8	47.4	26.3	3.5

Chi-square = 20.80   p = .013*   Cramer's V = .16

*p<.05

Table D-8

Component 3a. Teacher-advisor Program

			Response%			
Group	M	sd	1	2	3	4
Position						
Total	1.9	.85	34.0	37.9	23.6	4.5
Administrator	1.8	.79	38.5	35.4	26.0	0.0
Counselor	1.9	.81	35.0	40.7	22.0	2.4
Teacher	2.0	.91	32.0	37.5	23.4	7.1

Chi-square = 11.13   p = .08   Cramer's V = ---

Subject Area						
Total	2.0	.91	32.4	37.5	23.2	7.0
Social studies	2.0	.83	26.8	41.1	28.6	3.6
English	1.9	.94	38.3	37.2	16.0	8.5
Mathematics	2.1	.96	30.8	33.8	26.2	9.2
Science	2.0	.88	29.8	38.6	26.3	5.3

Chi-square = 7.43   p = .06   Cramer's V = ---

Table D-9

Component 3b. Student Grouping Decisions Made by Teachers

				Response%		
Group	M	sd	1	2	3	4
Position						
Total	1.9	.87	36.4	36.4	22.7	4.5
Administrator	2.0	.82	30.2	42.7	24.0	3.1
Counselor	1.9	.90	39.8	30.1	26.0	4.1
Teacher	1.9	.88	37.0	37.0	20.7	5.2

Chi-square = 5.72   p = .45   Cramer's V = ---

Group	M	sd	1	2	3	4
Subject Area						
Total	1.9	.87	37.4	37.0	20.5	5.1
Social studies	1.9	.86	33.9	37.5	25.0	3.6
English	1.8	.87	44.2	35.8	14.7	5.3
Mathematics	2.0	.93	30.8	36.9	24.6	7.7
Science	1.9	.85	36.8	38.6	21.1	3.5

Chi-square = 6.23   p = .71   Cramer's V = ---

Table D-10

Component 3c. Teachers Change Students' Schedules

			Response%			
Group	M	sd	1	2	3	4
Position						
Total	1.8	.88	40.0	35.5	19.5	5.1
Administrator	1.9	.87	34.4	39.6	20.8	5.2
Counselor	1.8	.90	43.1	29.3	23.6	4.1
Teacher	1.8	.88	40.5	36.8	17.1	5.6

Chi-square = 5.31   p = .50   Cramer's V = ---

Subject Area						
Total	1.8	.87	40.8	36.8	16.9	5.5
Social studies	1.9	.83	34.5	36.4	27.3	1.8
English	1.7	.86	45.3	38.9	9.5	6.3
Mathematics	1.9	.93	36.9	36.9	18.5	7.7
Science	1.8	.90	43.9	33.3	17.5	5.3

Chi-square = 10.41   p = .31   Cramer's V = ---

Table D-11

Component 3d. Students Make Connections Among the
Disciplines

| | | | | Response% | | |
Group	M	sd	1	2	3	4
Position						
Total	1.5	.71	61.2	28.7	7.6	2.5
Administrator	1.4	.59	60.0	34.7	5.3	0.0
Counselor	1.4	.66	65.3	26.4	7.4	0.8
Teacher	1.5	.81	59.8	27.7	8.5	4.1

Chi-square = 9.34   p = .15   Cramer's V = ---

Subject Area						
Total	1.5	.80	59.9	27.7	8.4	4.0
Social studies	1.5	.65	53.6	37.5	8.9	0.0
English	1.4	.86	71.6	16.8	5.3	6.3
Mathematics	1.7	.84	49.2	35.4	10.8	4.6
Science	1.5	.81	58.6	27.6	10.3	3.4

Chi-square = 16.58   p = .06   Cramer's V = ---

Table D-12

Component 3e.   Small and Large Group Sessions

	M	sd	Response%			
Group			1	2	3	4
Position						
Total	1.5	.71	58.3	31.3	8.0	2.5
Administrator	1.4	.57	62.5	33.3	4.2	0.0
Counselor	1.4	.61	65.6	29.5	4.1	0.8
Teacher	1.6	.83	53.5	31.4	11.1	4.1

Chi-square = 16.54   p = .01*   Cramer's V = .13

Subject Area						
Total	1.6	.82	54.0	31.0	10.9	4.0
Social studies	1.7	.73	44.6	39.3	16.1	0.0
English	1.5	.86	66.3	22.1	5.3	6.3
Mathematics	1.7	.85	43.1	41.5	9.2	6.2
Science	1.6	.82	55.2	25.9	17.2	1.7

Chi-square = 22.92   p = .01*   Cramer's V = .16

*p<.05

Table D-13

Component 3f.   Independent Study

Group	$\underline{M}$	sd	Response% 1	2	3	4
Position						
Total	1.8	.85	41.6	32.5	22.0	3.9
Administrator	1.7	.75	44.7	37.2	18.1	0.0
Counselor	1.7	.80	47.1	32.2	19.8	0.8
Teacher	1.9	.94	38.0	31.0	24.4	6.6

Chi-square = 16.16   p = .01*   Cramer's V = .12

Group	$\underline{M}$	sd	Response% 1	2	3	4
Subject Area						
Total	1.9	.93	38.3	30.7	24.5	6.6
Social studies	2.0	.93	32.1	33.9	26.8	7.1
English	1.8	.93	49.5	25.3	20.0	5.3
Mathematics	2.1	.97	30.8	30.8	29.2	9.2
Science	2.0	.89	34.5	36.2	24.1	5.2

Chi-square = 9.16   p = .42   Cramer's V = ---

*p<.05

Table D-14

Component 3g.   Collaborative Learning Groups

Group	M	sd	Response%			
			1	2	3	4
Position						
Total	1.7	.73	45.8	41.4	9.7	3.1
Administrator	1.5	.57	51.0	44.8	4.2	0.0
Counselor	1.6	.67	47.5	43.3	8.3	0.8
Teacher	1.7	.75	43.1	39.4	12.3	5.2

Chi-square = 15.62   p = .01*   Cramer's V = .12

Group	M	sd	Response%			
			1	2	3	4
Subject Area						
Total	1.7	.84	43.8	39.0	12.1	5.1
Social studies	1.7	.80	47.3	38.2	10.9	3.6
English	1.7	.89	48.4	33.7	11.6	6.3
Mathematics	1.9	.88	33.8	41.5	18.5	6.2
Science	1.7	.75	43.9	45.6	7.0	3.5

Chi-square = 7.92   p = .54   Cramer's V = ---

*p<.05

Table D-15

Component 3h. Awareness of Students' Overall Performance

| | | | Response% | | | |
Group	M	sd	1	2	3	4
Position						
Total	1.5	.74	53.4	34.4	9.6	2.7
Administrator	1.4	.62	65.6	29.2	4.2	1.0
Counselor	1.6	.72	51.6	36.1	11.5	0.8
Teacher	1.6	.82	49.8	35.4	10.7	4.1

Chi-square = 12.58   p = .05*   Cramer's V = .11

Subject Area						
Total	1.6	.81	49.6	35.8	10.6	4.0
Social studies	1.6	.74	50.0	37.5	10.7	1.8
English	1.6	.83	52.6	36.8	4.2	6.3
Mathematics	1.7	.81	43.1	38.5	15.4	3.1
Science	1.7	.85	51.7	29.3	15.5	3.4

Chi-square = 10.20   p = .33   Cramer's V = ---

* p<.05

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Table D-16

Component 3i. Teachers Available for Conferences at the
Same Time

| | | | | Response% | | |
Group	M	sd	1	2	3	4
Position						
Total	1.6	.72	53.4	33.7	10.9	2.1
Administrator	1.4	.61	64.2	29.5	6.3	0.0
Counselor	1.4	.63	63.1	29.5	7.4	0.0
Teacher	1.7	.82	45.2	37.0	14.1	3.7

Chi-square = 23.44   p = .01*   Cramer's V = .15

Subject Area						
Total	1.7	.82	45.4	37.0	13.9	3.7
Social studies	1.7	.73	39.3	42.9	17.9	0.0
English	1.6	.86	50.5	35.8	7.4	6.3
Mathematics	1.8	.81	35.4	43.1	18.5	3.1
Science	1.6	.86	54.4	26.3	15.8	3.5

Chi-square = 15.02   p = .09   Cramer's V = ---

*p<.05

Table D-17

Component 3j. Teachers Share Ideas and Materials

| | | | | Response% | | |
Group	M	sd	1	2	3	4
Position						
Total	1.5	.67	55.9	35.5	6.6	2.1
Administrator	1.3	.60	67.7	26.0	6.3	0.0
Counselor	1.3	.55	63.9	32.8	3.3	0.0
Teacher	1.6	.77	48.0	40.1	8.2	3.7

Chi-square = 22.34   p = .01*   Cramer's V = .15

Subject Area						
Total	1.6	.77	48.5	39.7	8.1	3.7
Social studies	1.6	.67	48.2	41.1	10.7	0.0
English	1.5	.82	57.4	34.0	2.1	6.4
Mathematics	1.8	.74	35.4	50.8	10.8	3.1
Science	1.7	.82	49.1	35.1	12.3	3.5

Chi-square = 17.37   p = .04*   Cramer's V = .14

*p<.05

Table D-18

Component 3k.   Develop a Community Atmosphere

				Response%		
Group	M	sd	1	2	3	4
Position						
Total	1.6	.74	53.6	32.2	12.1	2.1
Administrator	1.5	.64	55.2	36.5	8.3	0.0
Counselor	1.4	.69	66.1	22.3	11.6	0.0
Teacher	1.7	.83	47.4	35.2	13.7	3.7

Chi-square = 20.23   p = .01*   Cramer's V = .14

Subject Area						
Total	1.7	.83	47.4	35.3	13.6	3.7
Social studies	1.7	.76	42.9	41.1	14.3	1.8
English	1.6	.88	55.3	27.7	11.7	5.3
Mathematics	1.8	.82	40.0	40.0	16.9	3.1
Science	1.7	.81	47.4	36.8	12.3	3.5

Chi-square = 6.93   p = .64   Cramer's V = ---

*p<.05

Table D-19

Component 4. One Administrator and Counselor Assigned to
Each Team

| | | | | Response% | | |
Group	M	sd	1	2	3	4
Position						
Total	2.0	.85	34.4	33.5	27.8	4.3
Administrator	1.7	.74	39.2	43.3	16.5	1.0
Counselor	1.7	.84	45.5	32.5	19.5	2.4
Teacher	2.2	.91	27.4	30.5	35.7	6.4

Chi-square = 31.95   p = .01*   Cramer's V = .18

Subject Area						
Total	2.2	.91	27.9	30.5	35.3	6.3
Social studies	2.3	.84	17.9	32.1	44.6	5.4
English	2.1	.93	31.9	27.7	35.1	5.3
Mathematics	2.1	.93	29.7	29.7	34.4	6.3
Science	2.1	.95	29.1	34.5	27.3	9.1

Chi-square = 6.58   p = .68   Cramer's V = ---

*p<.05

Table D-20

Component 4a.   Coordinating Strategies to Address Students'
Needs

				Response%		
Group	M	sd	1	2	3	4
Position						
Total	1.7	.76	44.5	39.4	13.4	2.7
Administrator	1.5	.69	53.1	35.4	11.5	0.0
Counselor	1.5	.71	57.4	31.1	10.7	0.8
Teacher	1.8	.82	35.6	44.6	15.4	4.5

Chi-square = 24.36   p = .01*   Cramer's V = .15

Subject Area						
Total	1.8	.81	35.6	44.8	15.2	4.4
Social studies	2.0	.73	25.0	46.4	28.6	0.0
English	1.8	.85	41.1	43.2	9.5	6.3
Mathematics	1.9	.84	33.3	47.6	12.7	6.3
Science	1.8	.81	39.3	42.9	14.3	3.6

Chi-square = 15.90   p = .06   Cramer's V = ---

*p<.05

Table D-21

Component 4b. Communications Serve as an Early Warning
System of Students' Problems

			Response%			
Group	M	sd	1	2	3	4
Position						
Total	1.6	.71	52.4	36.3	8.6	2.7
Administrator	1.4	.59	64.6	30.2	5.2	0.0
Counselor	1.4	.63	67.2	26.2	5.7	0.8
Teacher	1.7	.81	41.3	43.1	11.2	4.5

Chi-square = 33.86   p = .01*   Cramer's V = .18

Subject Area						
Total	1.7	.80	41.9	42.6	11.0	4.4
Social studies	1.8	.69	32.1	50.0	17.9	0.0
English	1.7	.84	44.2	42.1	7.4	6.3
Mathematics	1.8	.84	39.1	45.3	9.4	6.3
Science	1.8	.82	50.9	33.3	12.3	3.5

Chi-square = 12.20   p = .20   Cramer's V = ---

* p<.05

Table D-22

Component 5. Leadership Positions Available on the Team

			Response%			
Group	M	sd	1	2	3	4
Position						
Total	2.2	.84	22.8	38.1	33.1	6.0
Administrator	2.0	.81	25.8	43.3	27.8	3.1
Counselor	2.0	.84	27.9	40.2	27.9	4.1
Teacher	2.3	.87	19.5	35.2	37.5	7.9

Chi-square = 11.46   p = .07   Cramer's V = ---

Group	M	sd	1	2	3	4
Subject Area						
Total	2.3	.87	19.6	35.2	37.4	7.8
Social studies	2.3	.92	19.6	35.7	33.9	10.7
English	2.1	.90	26.6	34.0	33.0	6.4
Mathematics	2.4	.81	12.5	37.5	42.2	7.8
Science	2.4	.84	16.1	33.9	42.9	7.1

Chi-square = 6.89   p = .64   Cramer's V = ---

Table D-23

Component 6. Teachers Participate in Recruiting and
Selecting New Teachers

			Response%			
Group	M	sd	1	2	3	4
Position						
Total	2.2	.91	27.3	31.6	33.7	7.4
Administrator	2.1	.78	23.7	41.2	34.0	1.0
Counselor	2.3	.98	26.2	25.4	37.7	10.7
Teacher	2.1	.95	29.1	31.0	31.7	8.2

Chi-square = 13.39   p = .03*   Cramer's V = .11

Subject Area						
Total	2.1	.93	29.5	31.0	31.4	8.1
Social studies	2.2	.96	25.0	19.6	46.4	8.9
English	2.3	.95	37.9	31.6	23.2	7.4
Mathematics	2.0	.90	18.1	39.1	32.8	9.4
Science	2.1	.92	32.1	32.1	28.6	7.1

Chi-square = 15.57   p = .07   Cramer's V = ---

                                          * p<.05

Table D-24

Component 7. New Teachers Given Support by Team Members

			Response%			
Group	M	sd	1	2	3	4
Position						
Total	1.6	.75	50.2	37.1	9.6	3.1
Administrator	1.4	.63	57.7	35.1	7.2	0.0
Counselor	1.6	.75	53.3	45.2	9.0	2.5
Teacher	1.7	.82	46.1	38.7	10.8	4.5

Chi-square = 8.44   p = .20   Cramer's V = ---

Subject Area						
Total	1.7	.82	46.3	38.6	10.7	4.4
Social studies	1.7	.65	39.3	50.0	10.7	0.0
English	1.6	.93	56.8	25.3	10.5	7.4
Mathematics	1.8	.81	39.1	45.3	10.9	4.7
Science	1.7	.79	43.9	42.1	10.5	3.5

Chi-square = 15.33   p = .08   Cramer's V = ---

Table D-25

Component 8. Peer Coaching and Supervision

				Response%			
Group	M	sd	1	2	3	4	
Position							
Total	1.8	.82	38.3	38.7	19.3	3.7
Administrator	1.7	.76	45.4	40.2	12.4	2.1
Counselor	1.8	.79	40.5	40.5	16.5	2.5
Teacher	1.9	.88	34.7	37.3	23.1	4.9

Chi-square = 9.68   p = .13   Cramer's V = ---

Group	M	sd	1	2	3	4
Subject Area						
Total	1.9	.87	35.4	36.9	22.9	4.8
Social studies	2.0	.76	26.8	48.2	23.2	1.8
English	1.8	.92	42.6	30.9	21.3	5.3
Mathematics	2.1	.94	29.7	34.4	28.1	7.8
Science	1.8	.84	38.6	38.6	19.3	3.5

Chi-square = 10.03   p = .34   Cramer's V = ---

CONTINGENCY TABLES, CHI-SQUARE ANALYSES, AND MEAN SCORES

FOR THE PROBABILITIES OF IMPLEMENTING EACH COMPONENT

The following tables present data relevant to the probability of implementing Components A1 through A8 on the questionnaire. Data include percentages, chi-square statistics, and mean scores by position and subject area. The items on the survey were coded as follows:

$$1 = \text{excellent chance}$$

$$2 = \text{good chance}$$

$$3 = \text{little chance}$$

$$4 = \text{no chance}$$

Data are based on the following $\underline{N}$'s:

<u>Total</u>	491
<u>Position</u>	
Administrator	96
Counselor	121
Teacher	274
<u>Subject Area</u>	
Social studies	56
English	95
Mathematics	65
Science	58

Table E-1

Component 1. Organizing Teachers onto Teams, Sharing the Same Teaching and Planning Schedule

			Response%			
Group	M	sd	1	2	3	4
Position						
Total	2.5	.76	9.0	33.2	49.5	8.4
Administrator	2.6	.72	7.8	28.9	56.7	6.7
Counselor	2.5	.78	10.3	29.3	52.6	7.8
Teacher	2.5	.78	8.8	36.4	45.6	9.2

Chi-square = 4.77   p = .57   Cramer's V = ---

Subject Area						
Total	2.5	.75	8.7	36.1	45.6	9.5
Social studies	2.5	.87	10.9	41.8	32.7	14.5
English	2.3	.81	15.7	37.1	41.6	5.6
Mathematics	2.8	.65	0.0	30.6	54.8	14.5
Science	2.5	.67	5.3	35.1	54.4	5.3

Chi-square = 22.55   p = .01*   Cramer's V = .16

* p<.05

Table E-2

Component 2.   Teachers Share the Same Group of Students

Group	M	sd	Response%			
			1	2	3	4
Position						
Total	2.5	.78	8.2	34.2	48.0	9.6
Administrator	2.5	.78	10.7	29.8	52.4	7.1
Counselor	2.5	.80	10.6	30.1	49.6	9.7
Teacher	2.6	.75	6.3	37.5	45.8	10.3

Chi-square = 5.69   p = .45   Cramer's V = ---

Subject Area						
Total	2.5	.79	6.3	37.3	45.9	10.6
Social studies	2.5	.82	9.6	40.4	38.5	11.5
English	2.4	.74	7.9	42.7	42.7	6.7
Mathematics	2.6	.67	1.6	26.2	57.4	14.8
Science	2.6	.76	5.7	37.3	45.3	11.3

Chi-square = 11.13   p = .26   Cramer's V = ---

Table E-3

Component 3. Teachers Jointly Plan the Educational Programs
for Students

| | | | | Response% | | |
Group	M	sd	1	2	3	4
Position						
Total	2.5	.76	8.2	38.0	46.0	7.7
Administrator	2.4	.81	12.5	33.8	46.3	7.5
Counselor	2.5	.73	7.7	32.7	52.9	6.7
Teacher	2.5	.74	7.0	41.7	43.0	8.3

Chi-square = 6.06   p = .41   Cramer's V = ---

Subject Area						
Total	2.5	.76	7.0	41.4	43.0	8.6
Social studies	2.4	.73	6.1	53.1	32.7	8.2
English	2.4	.76	9.3	43.0	40.7	7.0
Mathematics	2.7	.69	3.3	29.5	55.7	11.5
Science	2.5	.77	8.3	41.7	41.7	8.3

Chi-square = 10.30   p = .32   Cramer's V = ---

Table E-4

Component 4.   One Administrator and One Counselor Assigned
to Each Team

| | | | | Response% | | |
Group	$\underline{M}$	sd	1	2	3	4
Position						
Total	2.6	.77	6.1	33.2	48.8	11.9
Administrator	2.5	.76	6.0	39.8	43.4	10.8
Counselor	2.5	.84	11.1	38.9	38.0	12.0
Teacher	2.7	.70	3.8	28.3	55.7	12.2

Chi-square = 15.90   p = .01*   Cramer's V = .13

Subject Area						
Total	2.7	.71	3.8	28.0	55.6	12.6
Social studies	2.7	.77	6.1	26.5	53.1	14.3
English	2.7	.68	3.7	28.0	58.5	9.8
Mathematics	2.8	.71	1.7	28.8	52.5	16.9
Science	2.7	.70	4.1	28.6	57.1	10.2

Chi-square = 3.52   p = .93   Cramer's V = ---

* $p < .05$

Table E-5

Component 5.   Leadership Positions Available on the Team

			Response%			
Group	M	sd	1	2	3	4
Position						
Total	2.5	.70	4.5	40.4	47.8	7.3
Administrator	2.5	.73	7.1	42.9	42.9	7.1
Counselor	2.5	.72	4.8	46.2	40.4	8.7
Teacher	2.6	.66	3.4	37.0	52.8	6.8

Chi-square = 6.77   p = .34   Cramer's V = ---

Subject Area						
Total	2.6	.66	3.4	37.1	52.7	6.8
Social studies	2.7	.75	4.1	30.6	51.0	14.3
English	2.5	.62	3.7	38.3	54.3	3.7
Mathematics	2.6	.62	1.7	35.6	55.9	6.8
Science	2.5	.65	4.2	43.8	47.9	4.2

Chi-square = 7.97   p = .53   Cramer's V = ---

Table E-6

Component 6. Teachers Participate in Recruiting and
Selecting New Teachers

| | | | Response% | | | |
Group	$\underline{N}$	sd	1	2	3	4
Position						
Total	2.7	.75	4.7	30.7	51.1	13.6
Administrator	2.5	.77	9.3	34.9	47.7	8.1
Counselor	2.8	.77	4.8	26.7	51.4	17.1
Teacher	2.7	.71	3.0	30.9	52.1	14.0

Chi-square = 9.58   p = .14   Cramer's V = ---

Subject Area						
Total	2.7	.72	3.0	30.8	51.9	14.3
Social studies	2.8	.75	2.0	32.7	46.9	18.4
English	2.7	.68	1.2	31.7	53.7	13.4
Mathematics	2.7	.81	6.8	27.1	49.2	16.9
Science	2.7	.64	2.1	31.9	57.4	8.5

Chi-square = 7.00   p = .63   Cramer's V = ---

Table E-7

Component 7. New Teachers Given Support by Team Members

			Response%			
Group	M	sd	1	2	3	4
Position						
Total	2.1	.78	18.7	51.3	25.5	4.4
Administrator	2.1	.75	18.6	57.0	19.8	4.7
Counselor	2.1	.85	25.0	43.3	26.0	5.8
Teacher	2.1	.74	16.0	52.7	27.4	3.8

Chi-square = 7.14   p = .30   Cramer's V = ---

Group	M	sd	1	2	3	4
Subject Area						
Total	2.1	.74	16.0	52.5	27.7	3.8
Social studies	2.2	.72	12.0	62.0	20.0	6.0
English	2.1	.74	17.3	48.1	32.1	2.5
Mathematics	2.2	.73	13.6	50.8	32.2	3.4
Science	2.1	.77	20.8	52.1	22.9	4.2

Chi-square = 6.21   p = .71   Cramer's V = ---

Table E-8

Component 8. Peer Coaching and Supervision

				Response%		
Group	M	sd	1	2	3	4
Position						
Total	2.3	.76	10.7	47.0	36.2	6.1
Administrator	2.3	.76	11.9	51.2	31.0	6.0
Counselor	2.2	.78	13.5	50.0	29.8	6.7
Teacher	2.4	.74	9.2	44.2	40.8	5.8

Chi-square = 5.63   p = .46   Cramer's V = ---

Subject Area						
Total	2.4	.73	9.1	44.0	41.1	5.8
Social studies	2.5	.83	8.0	42.0	36.0	14.0
English	2.4	.70	9.8	39.0	48.8	2.4
Mathematics	2.5	.72	6.6	42.6	44.3	6.6
Science	2.2	.68	12.5	56.3	29.2	2.1

Chi-square = 15.20   p = .08   Cramer's V = ---

APPENDIX F

CONTINGENCY TABLES, CHI-SQUARE STATISTICS, AND MEAN SCORES

FOR LEVELS OF SATISFACTION

WITH THE DEPARTMENTAL ORGANIZATION

The following tables present data relevant to the levels of satisfaction with each specific component of Section C on the questionnaire. Data include response percentages, chi-square statistics, and mean scores by position and subject area. The items on the survey were coded as follows:

$$1 = \text{totally satisfied}$$

$$2 = \text{somewhat satisfied}$$

$$3 = \text{somewhat dissatisfied}$$

$$4 = \text{totally dissatisfied}$$

Data are based on the following $\underline{N}$'s:

Total	491
Position	
Administrator	96
Counselor	121
Teacher	274
Subject Area	
Social studies	56
English	95
Mathematics	65
Science	58

Table F-1

Satisfaction with the Departmental Organization in Meeting
Professional Needs

Group	M	sd	1	Response% 2	3	4
Position						
Total	2.2	.74	19.1	55.0	22.4	3.5
Administrator	2.5	.68	13.5	60.4	22.9	3.1
Counselor	2.0	.70	19.0	54.5	24.8	1.7
Teacher	2.0	.77	21.1	53.3	21.1	4.4

Chi-square = 5.21   p = .51   Cramer's V ---

Group	M	sd	1	Response% 2	3	4
Subject Area						
Total	2.1	.69	21.2	53.5	20.9	4.4
Social studies	1.9	.67	25.0	55.4	19.6	0.0
English	2.2	.81	16.8	54.7	20.0	8.4
Mathematics	2.0	.74	20.0	53.8	23.1	3.1
Science	2.0	.79	26.3	49.1	21.1	3.5

Chi-square = 3.86   p = .69   Cramer's V ---

Table F-2

Satisfaction with the Departmental Organization in Meeting
Students' Needs

Group	M	sd	1	Response% 2	3	4
Position						
Total	2.3	.70	9.9	49.8	36.3	4.0
Administrator	2.3	.68	10.5	51.6	35.8	2.1
Counselor	2.3	.68	7.4	57.9	29.8	5.0
Teacher	2.3	.71	10.0	50.0	35.9	4.1

Chi-square = 3.86   p = .06   Cramer's V ---

Group	M	sd	1	Response% 2	3	4
Subject Area						
Total	2.3	.68	9.9	49.8	36.3	4.0
Social studies	2.1	.64	10.9	60.5	26.8	1.8
English	2.4	.76	9.5	46.3	36.8	7.4
Mathematics	2.3	.69	10.8	46.2	41.5	1.5
Science	2.3	.69	8.8	49.1	36.3	4.0

Chi-square = 8.27   p = .50   Cramer's V ---

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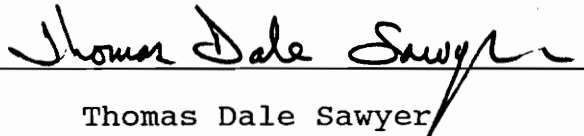with majors in social studies and secondary education, 1975.

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