Influence of interdisciplinary teaming on teachers in an urban high school

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INFLUENCE OF INTERDISCIPLINARY TEAMING ON TEACHERS IN AN URBAN HIGH SCHOOL

by

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A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Education in Instruction and Curricular Studies

Department of Instruction and Curriculum University of Nevada, Las Vegas December 1994
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ABSTRACT

INFLUENCE OF INTERDISCIPLINARY TEAMING ON TEACHERS IN AN URBAN HIGH SCHOOL

This study explored the influence of interdisciplinary teaming on high school teachers in a southwest urban high school. The influence of interdisciplinary teaming on teachers' feelings of isolation and collegiality was examined. The construction of teachers' knowledge and development of personal meaning for interdisciplinary teaming were also studied.

Participants were four team teachers in three subject matter areas. The teaching experience of the teachers ranged from one year to thirty-two years. Two of the teachers had no prior experience teaching on an interdisciplinary team. The other two teachers had one year of experience teaching on an interdisciplinary team.

A case study method was used to examine the influence of interdisciplinary teaming on high school teachers. Formal and informal interviews were
conducted with the teachers in the study. Other sources of data were observations and collection of documents relevant to the study. Observations were conducted with the teachers as they met in informal and formal meetings as well as during staff development meetings.

Data revealed that the teachers were unprepared for interdisciplinary planning. Isolation decreased and collegiality increased as teachers interacted. The teachers constructed personal practical knowledge through three of the natural mentoring processes. The three types of mentoring were social informal mentoring, collaborative mentoring, and clerical mentoring. Implications for administrators, interdisciplinary teaming, teacher collegiality, and teacher isolation were drawn.
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To the memory of
my mother
Ouida Estelle Giesecke Burks
CHAPTER ONE

Introduction

Vignette: Example of Collaboration

As Susan and Lucy walked down the hall toward their interdisciplinary team meeting, they discussed the topic that was uppermost in their minds. The topic of discussion was the Greek history and Greek literature lessons they had planned together.

Susan was saying "I began the Iliad today. It was great not having to explain where Greece was located geographically. This is the first time that I have ever been able to skip a geography and history lesson in conjunction with my literature. Thank you so much for introducing Greek history at the beginning of the week, it has really made my job much easier!"

They entered the room to find the science teacher, Ted, and mathematics teacher, John, already in the room. They sat down and shared the lessons they had planned. John reported that he had introduced the Pythagorean theorem to his students, and had given them a little background about the Greek mathematician Pythagoras. Ted reported that he was still trying to find some way to incorporate something
from ancient Greece into his science lessons.

The discussion continued as they decided to approach the art teacher. "Maybe she can talk about how Greece influenced art. You know, all those Greek statues had to come from somewhere!"

The team discussed other ways of getting the teachers that were not members of the team involved with the theme of the lessons. "Yes, and we could approach the P. E. teacher about athletes in Greek times. Maybe she could include that in her lessons this week; and maybe even the music teacher could do something. I seem to remember from music history class that the music was monotonic. You know, one part, with no harmony. As a matter of fact it was the basis for most religious music if I remember correctly." And so the conversation and planning continues.

This is one example of how teachers might work together as an interdisciplinary team. The collaboration that is denoted above demonstrates teachers using a topic or theme that is incorporated into the various classrooms so that students make connections across subjects (Beane, Toepfer, & Alessi, 1986; MacIver, 1990; Lear, 1989).

Interdisciplinary Teaming/Integrated Teaching

Lear (1989) uses the words interdisciplinary and integrated interchangeably to describe the
interdisciplinary programs he studied. He also describes interdisciplinary teaching to include team teaching\(^1\) in some schools. He further suggests interdisciplinary teaching to be an evolving process. Integrating teaching and interdisciplinary teaming involves "rethinking how you perceive knowledge, how you talk about it, and how you make it available to students" (p. 37). Integrated teaching and interdisciplinary teaming mean a collaboration where the teachers retain subject-specific responsibilities, while achieving coherence. This includes planning that enables the students to make connections from one subject to the next.

Interdisciplinary teams may use common material, data, and information across their classes rather than simply pointing out connections. However, interdisciplinary teaming and integrated teaching may have a broader meaning. Content for study emerges from broad topics or issues. Therefore, instruction is not based on the demands of a specific subject since each of the teachers takes responsibility for all parts of the course content (Lear, 1989).

\(^1\)Meehan (1974) writes that team teaching also has different meanings for different people. For the purposes of this study, team teaching will be given the definition of two or more teachers who have the responsibility of the education of a larger group of students than is usually considered a normal class size.
Interdisciplinary Teaming/Collaboration

Stavro (1992) describes interdisciplinary teaming as teachers collaborating as they engage in common planning time or engage in meetings on a regular basis to offer support and encouragement to each other as well as to discuss the progress of the students they commonly teach. Collaboration means that awareness of interdependence will be built. Thus, collaboration will lead to commitment and accomplishment of goals.

Interdisciplinary teaming may include teachers collaborating to plan appropriate themes and concepts by using a common denominator for learning, such as the thinking process (Worsham, 1986). The teachers may develop an interdisciplinary program using thinking skills (rather than content, concepts, or themes) as the basis for team planning.

Interdisciplinary teaming implies that teachers work together collaboratively in a collegial setting (Alexander and George, 1981; Cohen, 1981; Little, 1982; MacIver, 1990; Rosenholtz, 1989; Worsham, 1986). That is, they talk with each other, share professional skills, and develop lessons together. Thus, teachers develop interpersonal relationships. When teachers begin to collaborate with other teachers, they find teaching becomes a rewarding experience; generally,
morale and self esteem among teachers improve (McClean, 1991).

Research on interdisciplinary teams of teachers in middle schools and elementary schools has shown that teacher collegiality is enhanced by interdisciplinary teaming (Arhar, Johnston, & Markle, 1988; Arhar, Johnston, & Markle, 1989; Mills, Powell, & Pollack, 1992). However, whether this is true at the high school level is yet unclear.

**Interdisciplinary Teaming/Isolation**

Interdisciplinary teaming in middle schools has been shown to increase collegiality and decrease isolation (Arhar, Johnston, & Markle, 1988; Arhar, Johnston, & Markle, 1989; Mills, Powell, & Pollack, 1992). Few studies report on the influence of interdisciplinary teaming on teacher collegiality in high schools.

In contrast to collegiality, however, some teachers have stated that they feel isolated, with little or no interaction with other teachers in the building. (Bettencourt & Gallagher, 1990; Chandler, 1983; Cusick, 1983; Fimian, 1982; Johnson, 1990; Lortie, 1970; Murphy, 1982; Tye & Tye, 1984; Silberman, 1970; Zielinski & Hoy, 1983). Many high school teachers work totally independent of other teachers. Therefore, since teachers at high schools seldom work in collaborative settings, the teachers
generally know little about their colleagues' relationships with students, educational beliefs and job competence (Tye & Tye, 1980).

Teachers often report that they are thrown into "sink or swim" situations, where they enter their classrooms for the first time, close the door, and are on their own, with little or no help from other teachers (Goodlad, 1984; Heath, 1971; Lortie, 1975; Silberman, 1970; Toch, 1984). Such isolation is often mitigated when teachers become members of an interdisciplinary team (Lear, 1989). MacIver (1990) suggested that interdisciplinary teaming at the middle school level decreased teachers' feelings of isolation. However, Mills, et al. (1992) found that middle school teachers working together on interdisciplinary teams often become so involved with their team that they do not interact with teachers on other teams who teach the same age or content, thus they felt isolated from these colleagues. These two studies suggest that interdisciplinary teaming at middle schools may result in enhanced collegiality among teachers on the same team.

Studies of interdisciplinary teaming at high schools are more limited. Therefore, we are unsure whether interdisciplinary teaming at high schools will give results similar to those found with elementary and middle schools. However, supporting the studies
at the elementary and middle school levels, research by Cunningham and Shillington (1990) suggests that interdisciplinary teaming at the university level results in greater collaboration. This collaboration yields positive personal interaction. The combined research on elementary, middle school, and university interdisciplinary teaming suggests that similar results of greater collegiality may occur within the high school setting.

Statement of the Problem

Evidence shows that interdisciplinary teaming influences the collegiality and isolation of teachers at middle and elementary schools (Erb & Doda, 1989; George & Oldaker, 1985; Meichtry, 1990). Research also indicates that successful programs at these levels must provide teachers with training for interdisciplinary teaming (MacIver, 1990; MacIver & Epstein, 1991; Meichtry, 1990; Whitford & Kyle, 1984). Teachers should be cognizant of factors that contribute to collaboration and collegiality such as: (1) adaptability, (2) flexibility, (3) commitment to teaming, (4) willingness to cooperate, (5) regular daily contact, and (6) similar philosophies of education (Meichtry, 1990). Meichtry indicates that when these factors are present, collaboration among teachers will result in support that ranges from
collegial to personal, therefore, decreasing the isolation teachers experience. In considering the research on the influence interdisciplinary teaming has on teacher collegiality and isolation at middle schools, more research is needed at the high school level to provide a clearer understanding of the similar influence which may result from interdisciplinary teaming at this level. This same research could then provide a clearer understanding of the effectiveness of such teaming for high school education.

Research Goals and Questions

Goals

One goal of this study was to explore and describe the influence of interdisciplinary teaming on urban high school teachers' feelings of collegiality and isolation. However, teachers on the interdisciplinary team must be aware of the factors previously described so that the collegiality may be enhanced and isolation may be alleviated. Hence, a second goal is to study the type of knowledge that teachers construct about interdisciplinary teaming during the school year. By studying interdisciplinary teaming at the high school level, we may better understand how teaming influence the
interaction among teachers and how this interaction helps them develop common meanings about interdisciplinary teaming.

Questions

1. How does interdisciplinary teaming influence teacher collegiality among high school teachers?
2. How does interdisciplinary teaming influence teachers' feelings of isolation?
3. What knowledge do teachers construct about interdisciplinary teaming over a school year?
4. What common meanings do teachers develop about interdisciplinary teaming as a result of their interaction?

Theoretical Framework

Symbolic interactionists assume that individuals' experiences are mediated by their own interpretations of experience, which are created by the individuals through interaction with others. Blumer (1962) points

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2 Interdisciplinary teaming in the school of this study does not encompass the entire school as only a small portion of the staff is on the interdisciplinary team. I could argue that the interdisciplinary teaming process will influence only the teachers involved with the teaming process, but when such a program is implemented into a school, the program's influences may be on teachers other than those directly involved with the team. I interviewed only teachers that were on the interdisciplinary team, but many of the teachers who were not members of the interdisciplinary team were present during the observations.
out that group life consists of "acting units developing acts to meet the situations in which they are placed." He further suggested that the most important element in interacting groups is the actions of the members of the group. Thus, one framework for studying the interaction among the members of interdisciplinary teams is symbolic interactionism. As team members interact with each other, their experiences will be mediated by the actions of their fellow team members as well as their interpretations of those actions. These interactions, according to Jacob (1987), are used by the individuals of the team to achieve specific goals.

According to Blumer (1972), as the team members interact they will interpret or define other members' actions. The response that the members make to others' actions will be based on the meanings they attach to such actions. Blumer further implies that actions are constructed rather than merely released. Each member of the team "aligns his action to the action of others by ascertaining what they are doing and what they intend to do — that is, by getting the meaning of their acts" (Blumer, 1972, p. 148). This alignment of action allowed the members of the team to develop common meanings about interdisciplinary teaming.
With the use of symbolic interactionism as the framework for this research, I was able to study the actions of the interdisciplinary team. Symbolic interactionism provided a framework within which to record the common meanings the team developed about interdisciplinary teaming that resulted from the interactions of the team.

Methodology

In this year-long case study, I used methods that allowed me to examine the influences that interdisciplinary teaming had on the interaction among the team members. These methods of data collection are similar to those of long term qualitative studies (Strauss & Corbin, 1990).

The primary source of data came from site-based interviews. I conducted interviews with four of the teachers on the interdisciplinary team during one semester of the school year. Each interview was approximately an hour in length and focused on the following areas: (1) teachers' knowledge about the interdisciplinary teaming process, (2) what the teachers were doing as a team, (3) the relationships of the teachers with their team members and with other teachers in the school, (4) any changes that may have occurred during the year that affected the interdisciplinary team, and (5) the interactions they
had with each other. Examples of the questions I used to inform my study are: (i) What prior experience of interdisciplinary teaming do you have? (ii) What does the interdisciplinary team mean to you? (iii) How well do you know the teachers in the school? (iv) How have changes in the administration effected the team? (v) How often do you meet? What do you discuss? As the interviews were transcribed and all data were examined, I employed the constant comparative method of data analysis (Strauss & Corbin, 1990) was employed.

A second method of data collection was observations with field notes taken after observations. I observed the teachers at school thrice weekly during the first two months of the study and at least once or twice weekly after the first two months. I observed the teachers during their attendance at two all-day staff development workshops, and during two team meetings. A third method of data collection was collection of documentation such as memos and handouts received by the team teachers during staff development. This documentation help to corroborate information received during the observations and interviews.

The multiple sources of data collection, referred to as triangulation, aided in insuring goodness of the study and aided in gaining different vantage points of
the study (Mathison, 1988). Triangulation also assured credibility, confirmability, and tested my predilection as strenuously as possible (Lincoln & Guba, 1985).

**Definition of Terms**

**Definition of Interdisciplinary Teaming**

Research reveals that there is not a common or general definition of interdisciplinary teaming at high schools. High schools use the term interdisciplinary teaming, but they form, schedule, and conduct the teams in diverse ways (Lear, 1989, Peters, 1989, Whitford & Kyle, 1984).

MacIver (1990) refers to interdisciplinary teaming as a team composed of teachers who share the same students, but teach different subjects. According to MacIver (1990) these teams meet to review students' progress and plan interventions. They also meet together to conduct activities and to discuss mutual problems so that they can find solutions to these problems. MacIver (1990) continues to describe interdisciplinary teaming to include teams who plan thematic units that allow students to make connections between ideas in different subjects.

Germane to the study of MacIver (1990), I have selected the following definition. Interdisciplinary teaming is defined as a group of teachers who share
the same students, yet teach different subjects. The teachers meet to discuss progress, problems, plan interventions and plan thematic units to help students make connections across different subject areas.

This definition does not exclude the possibility that interdisciplinary teaming may encompass more than sharing the same students. Other researchers describe the developmental stages through which teachers go. The final stage includes regularly planned meetings at which the teachers plan several thematic lessons to achieve curricular integration, share information and look of team solutions to problems (Erb & Doda, 1989; Pickler, 1987).

Definition of Collaboration

Teachers often collaborate as they engage in common planning time or engage in meetings on a regular basis to offer encouragement and support to each other and to discuss the progress of the students that they commonly teach (Stavro, 1992).

Collaboration is defined as teachers planning together to help students (Lear, 1989).

Definition of Collegiality

Teacher collegiality is defined to be the interaction of teachers with other teachers on the team in the sense that they talk to each other about professional and personal matters, sharing the problems and joys associated with teaching. This
personal and professional interaction develops camaraderie (Bettencourt & Gallagher, 1990). For this study, collegiality among team teachers refers to collegiality with fellow teachers on the team. This study also refers to the collegiality team members had with teachers who taught the same subject matter, but were not members of the team. The study refers to the collegiality teachers had with teachers who were not members of the team and taught different subjects.

**Definition of Isolation**

For this study, isolation refers to the separation of individual teachers from other teachers in a professional or personal sense. According to Bettencourt & Gallagher (1990) isolation is "teachers' lack of interaction with other professionals about professional matters, mainly those having to do directly with teaching and learning" (p. 3). Isolation will also refer to personal isolation that teachers may have. Isolation in the sense that they have little, if any, personal interaction with their fellow teachers. That is, they do not talk together or do things together, personally or professionally.
CHAPTER TWO

REVIEW OF RELATED LITERATURE

Introduction

Literature was reviewed that pertains to interdisciplinary teaming, collegiality, collaboration, and isolation among teachers. The literature was reviewed to provide a theoretical framework for the research questions and goals of the study.

The first section of the review focuses on interdisciplinary teaming. The purpose for this literature is to understand the process of interdisciplinary teaming and to provide an overview of interdisciplinary teaming. The second section of the literature review pertains to collegiality, collaboration and isolation. The third section of the literature review focuses on symbolic interactionism as the theoretical framework to determine how the group of team teachers is influenced by interdisciplinary teaming. The fourth section reviews ways in which teachers construct knowledge.
**Interdisciplinary Teaming**

**Introduction**

Social organizational theorists have investigated the social structure of schools and have consistently found that the individual classrooms (cellular) structure of schools creates a climate where teachers work in isolation from their colleagues. This isolation often causes feelings of uncertainty about their ability to positively influence student learning (Cohen, 1981; Feiman-Nemser & Floden, 1986; Goodlad, 1984; Little, 1982; Lortie, 1975; Meichtry, 1990; Rosenholtz, 1989).

Interdisciplinary teaming, an innovation of the 1960's, has gained recognition as an organizational arrangement that has the potential to reduce the isolation of teachers. Research shows that teaming is associated with greater interaction and interdependent work among team teachers. However, we cannot assume that interaction among teachers is an automatic outcome of teaming (Cohen, 1981; Cohen & Bredo, 1975; Little, 1982; Meichtry, 1990; Rosenholtz, 1989).

Human factors that are considered essential for successful interaction include interpersonal communication skills, cooperative attitudes, a willingness to think like a member of the group, and a professional commitment to teaming. Many of the skills that are necessary when working effectively in
small groups are behaviors that teachers have not learned due to lack of experience and training (George, 1984; Meichtry, 1990).

Interdisciplinary teaming is defined and implemented in a variety of ways. Since interdisciplinary teaming means different things for different people and schools, I have included a description and the organizational differences of four high schools that use some form of interdisciplinary teaming.

The body of knowledge of interdisciplinary teaming at middle and elementary schools is growing. Therefore, I will discuss interdisciplinary teaming and teacher interaction, collaboration, isolation, and collegiality at this level. Results and relationships that occur at middle and elementary schools may have implications for interdisciplinary teams at high schools. This study explored those implications.

Interdisciplinary Teaming - Elementary and Junior High/Middle Schools

Introduction

Interdisciplinary teaming was highlighted as a keystone for effective education when recommendations for reforming middle school education were made. However, these reform recommendations did not provide necessary guidelines for schools to follow. Despite
the lack of guidelines, interdisciplinary teaming is viewed as a method of easing the transition from elementary school into middle schools and high schools (Alexander and George, 1981; DiVirgilio, 1972; MacIver 1990; MacIver & Epstein, 1991; Meichtry, 1990).

In theory, when interdisciplinary teams are formed, the teachers are able to respond more quickly, personally, and consistently to the individual needs of the students. The team knows (in theory) what the students are doing in all of their classes and this can lead to increased integration of content areas. Teaming also makes it possible for teachers on the team to meet with parents to discuss the progress and problems of students who are commonly taught by the team teachers (Alexander & George, 1981; MacIver, 1990; Worsham, 1986).

Teaming allows the team members to take advantage of each of the team teacher's strengths. Although teacher autonomy is limited so that the team can function consistently, teaming increases staff morale and it increases staff confidence. However, interdisciplinary teaming takes more time than traditional teaching (George & Oldaker, 1985; Gitlin, 1981; Hall & Rutherford, 1976).

Interdisciplinary teams usually have team leaders who are directly responsible for directing and organizing the team activities. These leaders usually
serve as an intermediary between the team and the administration. However, decision making by team leaders who are the primary members of the teams to have interaction with the principal may cause other team teachers to feel the decision making puts distance between other team members and the principal (MacIver & Epstein, 1991; Whitford & Kyle, 1984).

Team Meetings

When the teams meet, Whitford & Kyle (1984) noted that some teams are joined by the curriculum coordinator, sometimes they are joined by the counselor assigned to the team, or occasionally the principal joins the team. Most often, however, the teachers will only meet with other members of the team.

Most researchers agree that the amount of team planning time has a great impact on the probable success of the interdisciplinary team (Alexander & George, 1981; Erb & Doda, 1989; MacIver, 1990; Puglisi & Shurr, 1989; Whitford & Kyle, 1984). Common planning periods for teachers are planning periods where all members of the team have planning the same period. Many interdisciplinary teams find it difficult to meet if they do not have common planning. However, when interdisciplinary teams have common planning, longer planning time is associated with greater benefits.
Teams with only one planning period may meet for the last thirty minutes of the planning period to utilize their time to discuss team concerns and plan integrated lessons or projects. However, teams do not always use their common planning time wisely. When team members are provided with only one planning period, many team teachers grade papers, plan individual lessons, and prepare individual tests, rather than use the time for team planning (Erb & Doda, 1989; MacIver, 1990; Puglisi & Shurr, 1989; Whitford & Kyle, 1984).

Research indicates that during the team meetings, the team teachers discuss their common students. These discussions may include academic problems or academic success. Teachers plan the integration of academic responsibilities and share information about their own content (MacIver, 1990; MacIver & Epstein, 1991; Whitford & Kyle, 1984). They may discuss behavioral or personal problems of the students they share. During these meetings there are administrative details that must be handled, such as school-wide duties, procedures of the team, and student schedules (Whitford & Kyle, 1984).

Although it is generally agreed that planning time is very important to the success of the teams, only about ten percent of the schools that have interdisciplinary teaming programs at the seventh
grade level provide at least two hours per week of common planning time for their members. Only about ten percent of the team members at this level use more than a little of the planning time for coordinating activities that strengthen the effects of interdisciplinary teams (Center for Research on Elementary and Middle Schools, 1990).

**Development of Interdisciplinary Teams**

George (1982) notes that there are four phases of interdisciplinary team organization. He lists them succinctly as organization, community, team teaching, and governmental power sharing. Others list the phases more completely. Moosbruker (1988) indicates that group development models may have three, four or five stages, although the stages look much alike. According to Moosbruker (1988), a shortened generalized model may look like the following:

**Stage 1:** Orientation Of The Group To The Task. This is associated with connecting. The members of the group are formed, they find support, and they learn who is in and who is out of the group.

**Stage 2:** Conflict Over Control Among The Group's Members And With The Leader. This stage is associated with competition. The members are engaged in confronting, controlling, positioning, learning who is up and who is down.
Stage 3: Group Formation And Solidarity. The group begins to collaborate, accept, differentiate, and accommodate each other. They begin to learn to live and let live.

Stage 4: Differentiation And Productivity. This is the stage where the members of the group began to care. They are encouraging, developing, supporting, and contributing to each other, according to ability and interest. They are learning to give and take on one's merit.

Moosbruker's (1988) stages describe groups in general. Pickler (1987) lists the stages that interdisciplinary teams go through. These stages are specific to interdisciplinary teaming, although they are much like Moosbruker's stages. For purposes of my research, these stages of interdisciplinary teaming need to be shown. The following are the summarized stages:

Stage 1 - The members of an interdisciplinary team do not know each other's first names. They don't meet together as a team and they do not see the benefits of the team.

Stage 2 - The team members begin to meet for parent conferences, but they do not prepare for the conferences as a team. It is during this stage that the team members began to meet occasionally, but when they meet the meetings are not very productive.
Stage 3 - The team members are beginning to develop a rapport, and they meet more often. They begin to develop a set of team rules and procedures during this stage. The members begin to try to coordinate their test dates and they meet together prior to attending any parent conferences so that they can plan for the conference.

Stage 4 - It is during the fourth stage that the members truly become compatible. They begin to meet on a regular basis, and their meetings are structured, purposeful, and productive. They have a common set of team rules and procedures for the students. They develop a team calendar so that they can coordinate activities such as tests, major projects, and team activities. They share student information and look for strategies to deal with problems that they are having with the students. They begin to implement some positive reinforcement strategies and plan parent conferences well in advance. The teachers begin to work to establish a sense of team identity for the students. They correlate instruction when content areas overlap and sometimes eat lunch together at school.

Stage 5 - It is during this last stage that Pickler (1987) feels they truly become a team. In this final stage they cooperate with and support each other. They establish a team identity for the
students during this stage if it has not been accomplished before. Teachers have regularly scheduled team meetings, they follow an agenda, they follow up on decisions that are made, and they divide the work that is to be done. Teachers have a team calendar that has posted dates of tests, major projects, and team activities. They share information and concerns and look for team solutions to problems. They share information for the purpose of recognizing those students who are doing well. Teachers establish team goals and plan reinforcement activities between subject areas when desirable. The teachers meet with students as a team and discuss problems or provide positive reinforcement to the students. During this last stage that they plan one or two thematic units during the year. The parent conferences are well planned, productive, and have a positive tone. The teachers often eat together at school—and sometimes even are together on non-workdays.

Several of these stages seem to overlap, but Pickler (1987) implies that the teaming process is one that slowly develops as the teachers begin to know each other and interact with each other.

According to Meichtry (1990), human factors play an important part in the successful operation of a team. To develop successfully, the members must be adaptable, flexible, and spontaneous. For the group
to develop effectively there must be understanding between the teachers. The teachers should have mutual agreement and identification regarding the primary task to be accomplished. The teachers on the team should have good interpersonal communication skills. Open communication with mutual support among the teachers is recommended. The team should be able to manage the human differences that exist. Teachers must have appropriate member skills and should be willing to think like members of a group, having a cooperative attitude with professional commitment to teaming. Finally, the teachers must make good use of the planning and instructional time (Burke, 1988; Clark & Clark, 1990; Cotton, 1982).

Problems that Hinder Interdisciplinary Teaming

When teachers become members of an interdisciplinary team they frequently learn through their experiences. If the teachers are not adequately prepared for the interdisciplinary teaming process, they are frequently confused and have a feeling of dislocation. This lack of preparation often results in an unsuccessful instructional unit (Garner, 1976; Whitford & Kyle, 1984).

Insufficient training is only one problem that is associated with interdisciplinary teaming. Researchers indicate that planning is an important facet of interdisciplinary teaming; therefore another
frequently occurring problem that is associated with interdisciplinary teaming is the insufficient planning time that the teachers have. During the first year as team teachers, the teachers often feel confused and report that teaming requires too much paper shuffling.

A third problem associated with interdisciplinary teaming is scheduling. Flexible modular scheduling benefits both teachers and students. However, when regrouping of students become expedient or necessary, school scheduling often prevents flexibility for regrouping students.

A fourth problem indicated by teachers is that interdisciplinary teaming increased their work load. In spite of the heavier work load a few teachers indicated that this was not a problem, since the work load was shared by others (MacIver, 1990; Meehan, 1973; Parker & Lumpkin, 1987; Whitford & Kyle, 1984).

Teachers also indicated sustained cooperation was difficult and personality clashes often occur. The teachers often prefer working with teachers as peers, but do not want to be involved in the team approach¹ (Cotton, 1982; Davis, 1987).

¹ When the teachers spoke of working with peers as opposed to being involved in the team approach, they were referring to working with teachers who teach the same subject matter as opposed to working with teachers who teach different subjects as found with interdisciplinary teaming.
Research reveals that many teachers concur that it is difficult to teach what they are expected to teach in their own subjects. They feel that themes\(^2\) are too difficult to develop and follow. Often teachers indicate that they spend long hours developing inferior themes and inferior integrated projects (Worsham, 1986).

**Summary of Interdisciplinary Teaming at Middle/Junior High Schools**

Researchers generally agree that interdisciplinary teaming provides an effective transition for students moving from elementary school to middle school. Research indicates, however, that interdisciplinary teams go through certain stages before they become a cohesive and effective team. This procedure may take several years before teachers reach this goal.

Effective teaming relies upon human factors such as spontaneity, adaptability, and flexibility. The teachers must be willing to work as members of a team with good interpersonal and communication skills. For the team to be effective the members must be committed to the teaming concept and must be willing to meet often for planning and discussion.

\(^2\) One example of a theme is that of change and progress. This theme is used by each teacher who endeavors to integrate change and progress into the various subjects taught.
Problems occur when the members of the interdisciplinary team are not sufficiently trained for the teaming process. Other problems that may hinder the teaming process are scheduling, heavier workload, lack of common planning time, and sustained cooperation.

Research shows that although problems occur when teachers collaborate and interact on interdisciplinary teams at junior high schools, middle schools, and elementary schools, there are many benefits that result from interdisciplinary teaming. Many of these benefits are for students, but one of the benefits for teachers is the decrease of isolation. The decreasing of isolation encourages greater collegiality among team teachers (Alexander and George, 1981; Armstrong, 1977; Clark & Clark, 1990; Cotton, 1982; George & Oldaker, 1985; Gitlin, 1981; DiVirgilio, 1972; MacIver, 1990; MacIver & Epstein, 1991; Meehan, 1973; Moosbrucker, 1988; Pickler, 1987; Whitford & Kyle, 1984; Worsham, 1986).

Interdisciplinary Teaming At High Schools

Although data are limited on interdisciplinary teaming at high schools, Jenkins and Tanner (1989) describe four high schools that are members of the
Coalition of Essential Schools. These high schools have undergone restructuring that includes interdisciplinary teaming and integrated teaching.

**Thayer Junior-Senior High School**

Thayer Junior-Senior High School has approximately 300 students and is located in a small rural community. The teachers are members of a three person team, at each of the grade levels. Each team is responsible for four academic areas, math, science, social studies, and computers. For example, the Ninth Grade Team has a math, science, and computer teacher, and they each share responsibility for social studies. Each team is supported, guided and assisted in curriculum planning from a non-team teacher certified in the team's "fourth" area. A special education teacher or special education aide is also a team member, as all special education students are mainstreamed.

Each team runs a separate schedule and the teachers, during team periods, may use any organizational arrangement of students, teachers, space and time that they wish. The schedule that they follow varies from week to week (Lear, 1989).

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3 For a description of the nine common principles of the Coalition of Essential Schools, see page thirty-nine of Jenkins & Tanner's *Restructuring for an Interdisciplinary Curriculum*.
Each team adopts a theme for the year, which they integrate into their classes. One teacher describes integration as "knowing what others are doing and [knowing] that the whole is coherent" (Lear, 1989, p. 30). The students, however, see integration when they use materials, such as data from science class, to make graphs in math.

Forsyth Street

Forsyth Street is the site of a Satellite Academy that serves "at-risk" students in New York City. The school has an enrollment of 190 students and these students stay at the Academy for an average of one-and-a-half years. The school operates on four cycles a year, with most of the courses running for one cycle. Interdisciplinary themes began when the school was opened nineteen years ago. During the last five years there has been a formal commitment to integrated teaching.

The school's weekly schedule is broken into one and two-hour blocks with one part of the day set aside for integrated classes. Before this structural change the staff took time for meetings to discuss the team and interdisciplinary teacher (this is what they called it at the time). Now they discuss assessment, student learning habits, common learning for all kids, and content during their meetings (Lear, 1989). All members of the staff work on a team for part of each
day. Some members of the staff choose to do all of their teaching in teams. Most of the integrated classes meet together at the end or beginning of the period. After meeting together they split into groups to do project work.

The teachers do not always work with the same team throughout the year. They tend to shift with the cycles. The teachers indicate that they like the variety of working with new colleagues. They feel this promotes their own professional growth. Many of the classes have all the students and all the teachers in the room at one time. One teacher commented about this method of organization,

That doesn't get the numbers down, but it does change things. More than one adult in the same room makes it possible to look at different things. One of us can watch the movement of the course and content, another the mood of the day, while a third can work with individual kids. Our goal is to have it be as fluid as possible in the room (Lear, 1989, p. 33).

University Heights High School

University Heights is located at a Bronx Community College in New York. In 1986 it was created as a middle college. A middle college is a school where students attend high school but get the benefits that may be derived from a college environment.
University Heights has an enrollment of 165 students and offers the students the opportunity to get college credit for high school courses.

Since the inception of the school, interdisciplinary thematic seminar courses have been central to teaching and learning at the high school. University Heights has a schedule similar to Forsyth's schedule, but more time is built in for family group meetings.

Teachers work together to teach specific courses. Some teams remain constant over the year, while some of the teams change members when new courses begin each semester. When teachers join to teach a course, the teachers plan the course and arrive at one grade. The credit for the course is split among two or more academic areas.

One class has an enrollment of fifty students, and a team of three teachers. The students receive credit for English, social studies and art. This course was originally designed as an interdisciplinary course in American history and English composition for community colleges, then an art component was added. Each of the teachers focuses on a different aspect of the course (Lear, 1989)

Elizabethtown Area High School

Elizabethtown Area High School changed its structure from the traditional high school to an
interdisciplinary teaching team. Each team has four teachers, an English, math, science, and social studies teacher. These teachers share a common group of students. The school has a seven period schedule, with two team classes in the morning and two team classes in the afternoon. The members have three common planning periods, in which they have time for tutorial work, planning, and team meetings. They do not have any other supervision assignments during the day.

Elizabethtown made a commitment for a whole school, rather than the "school-within-a-school" concept. Elizabethtown started with three teams, grades 9, 10, and 11, because they have a vision that interdisciplinary teaming was for the entire school (Peters, 1989).

Peters (1989) also suggests that interdisciplinary teaming complements departments and provides balance. The natural barriers that occur in most high schools because of the grouping of the teachers around departments are broken down. The subject area departments remain as a "product control." They raise questions about scope, content, and sequence; and the departmental members still address issues such as curriculum budget and staffing. Interdisciplinary teaming and interdisciplinary teaching become an instructional process as the school
strives to improve the learning environment. This kind of teaching will gradually move the focus of instruction from a single subject to a bigger picture.

Summary of Interdisciplinary Teaming at High Schools

Four high schools and their interdisciplinary teaming programs are described above. They all have a student population ranging from the mid-one hundreds to three hundred. All four schools have different interdisciplinary teaming programs. Although the schools are different in the way they have organized their interdisciplinary teams, they have similarities.

Lear (1989) and Peters (1989) report that certain conditions must exist for interdisciplinary teaming at high schools to succeed. Both agree that the principals of the schools play a crucial role and that time for planning and dialogue of interdisciplinary units of study must be available for the teachers. Lear reports that Forsyth spends more time at the beginning and ending of a course rather than the middle, Thayer's team members work in the summer and after school or in the evening, and University Heights' teachers meet regularly in the evening and after school. Elizabethtown team members are expected to spend a minimum of two summer staff development meetings to plan interdisciplinary units.

Lear (1989) suggests that summer staff development needs to be made available to those
teachers who are interested in the program and that principals must respect the difference in readiness among the staff. Staff development and planning play important roles in all four of the high schools.

However, another important factor suggested by Lear (1989; also see Peters, 1989) is scheduling. They report that scheduling must support programs of interdisciplinary teams and integrated teaching.

**Conclusions on Interdisciplinary Teaming**

This literature review informed my study by enabling me to examine the influences that interdisciplinary teaming had upon the teachers of the study. I was able to examine the team and the teaming process that the teachers in the study have experienced.

By reviewing the stages that interdisciplinary teams go through, I observed the interdisciplinary team of the study to determine if they advanced through similar stages. I was able to determine the amount of meetings and planning sessions they were involved in. I used this data to compare their time with the time recommended by researchers. This review allowed me to gain an understanding of whether the interdisciplinary teaming process of this study was in alignment with the teaming process that is described in the review.
**Collegiality, Collaboration and Isolation**

Studies show that interdisciplinary teaming programs may have positive effects on both students and teachers (Arhar, Johnston, & Markle, 1988; Arhar, Johnston, & Markle, 1989). Studies also indicate that the positive effects on teachers are due to increased interaction between teachers on interdisciplinary teams and increased interdependent work among teachers on interdisciplinary teams (Cohen, 1981; Little, 1982; Rosenholtz, 1989).

Research indicates that interdisciplinary teaming encourages collaboration and greater collegial relations among team teachers. However, we must note that interdisciplinary teaming allows but does not compel collaboration among the team teachers (Arhar, et al., 1988; Arhar, et al., 1989; Clark & Clark, 1990; DiVirgilio, 1972; Erb & Doda, 1989; Erb, 1987; Mac Iver, 1990; Mac Iver & Epstein, 1991; McClean, 1991).

**Isolation**

Teachers have worked in isolated classrooms for many years (Cuban, 1993; Lortie, 1975). Teacher isolation was an accepted way of life for teachers who worked in one-room school rooms in isolated areas during the late nineteenth and early twentieth centuries. Therefore, throughout the historical
development of schools in the United States, isolation of teachers from their colleagues has been a constant feature (Cuban, 1993; Lortie, 1975). The one-room classrooms were the norm for many years. Then schools became "multiple distinct classrooms" (Lortie, 1975, p. 14). The multiple distinct classrooms limited opportunities for mutual consultation during the working day and the teachers' major obligations made contact between them a secondary need.

In the 1950s, isolation was not recognized as a problem associated with teaching but rather as a characteristic of teaching because of social constraints and because of the physical/architectural constraints. These physical constraints were those such as teachers working in separate rooms and each teacher working with her own group of parents and students. One social constraint was an informal rule against one teacher entering another teacher's room while she was teaching. Teachers felt that entering another teacher's classroom while she was teaching would effect the teacher's own authority in some way or be employed against the visiting teacher. The affect on authority was so feared that teachers would not do it (Becker, 1953; Lortie, 1975).

Bettencourt and Gallagher (1990) reported that there was a lack of research on the effects of teacher isolation until the late sixties and seventies. At
this time research on the effects of isolation and the
effects of isolation on teachers and teaching
developed. Research indicated that the relationship
(or lack of relationship) among teachers was
considered to be an educational problem (Miller,
1969).

Research from the seventies indicated that lack
of ability to discuss problems or success with
colleagues was prevalent and that teachers also fail
to get "meaningful help" from supervisors. Where
there was no intercommunication of purposes, there was
very little educative atmosphere, and much teacher
isolation. Research at this time suggested that there
was little teacher talk during the day, and that the
time, place, willingness and substance of conversation
had to be created (Heath, 1967; Miller, 1969;
Silberman, 1970).

Later research supports these findings, noting
the relationship and socializing among teachers are
related to student achievement and school climate.
Research suggested that there are profound educational
costs resulting from teacher isolation. Teacher
isolation may affect teacher morale, low self-esteem,
and thus hinder student progress. Isolation is one
source of teacher stress and has been identified as
one of the principal reasons for teacher attrition
(Bettencourt & Gallagher, 1990; Fimian, 1982; Murphy,
Cusick (1983) in his book *The Egalitarian Ideal and The American High School*, states that "... faculty did not develop curriculum together, nor were they unified in any way" (p. 100). This type of isolation is common in most urban high schools. Wynne (1980) found that the degree of socialization among school faculty varied from school to school with one-third each having high, indifferent, and poor levels of socialization. Other studies support the claim that teachers do not tend to share ideas, work in collaborative ways, or observe each other's performance. Although teachers meet in department meetings or at lunch (and this is a frequent practice in many high schools), they laugh and joke but do not discuss teaching and learning (Bettencourt & Gallagher, 1990; Chandler, 1983; Zielinski and Hoy, 1983).

Research indicates that teachers have some associations with other teachers when taking college courses, attending staff development meetings or meetings of educational organizations. However, these associations are brief and teachers rarely visit teachers from other schools or receive visitors from other schools. Data indicates very few collaborative endeavors such as district projects and few exchanges
of ideas or practices across schools, or even with individuals in the same school. The teachers rarely work together on school wide problems (Goodlad, 1984).

When teachers have little interaction with fellow teachers, this isolation may breed indifference about the intra-staff relationships. Teachers work alone in their classrooms and do not receive help from fellow teachers. Many teachers feel they have total decision-making power in their classrooms, and they like it. This lack of interaction implies that many teachers know little about their colleagues' educational beliefs, their relationships with students, or job competence. This type of isolation is widespread (Chandler, 1983; Tye & Tye, 1984; Zielinski & Hoy, 1983).

Although some teachers may like complete decision-making power in their classrooms, others feel isolated. They have no time to discuss intellectual matters and they feel they have no time to share common problems. There is an overwhelming number of teachers who have close relationships with only a few teachers, sometimes only with those in a room close beside them. Teachers who are located in different locations from other teachers feel left out, so isolation is linked to classroom location (Boyer, 1983; Johnson, 1990; Whitford & Kyle, 1984).
Classroom location is usually determined by the subject (department) teachers teach. This departmental organization by subject matter in high schools often encourages isolation. The official status of the departments is to content organization. Thus, the teachers' loyalty is to content specialization. The faculty in the departments have content in common and little else. They do not have common planning period and they see themselves as relatively independent individual staff members. They share few responsibilities with others, nor do they want to do so. This lack of joint structure offers little opportunity for task or reward interdependence. They meet only to discuss the subject matter they hold in common. If they share the same students, they do not have time to discuss the needs of the students (Arhar, Johnston, & Markle, 1988; Jurenas, 1980; MacIver & Epstein, 1991; Whitford & Kyle, 1984).

Teachers' inability to seek mutual solutions to classroom problems and their inability to share ideas are sources of major frustrations in their work. However, isolation may be self-imposed due in part to the teachers' unwillingness to expose themselves to the criticism and censure of their colleagues. Thus, high schools may be denied benefits when these teachers work in isolation (Arhar, et al, 1988; Lear, 1989, Toch, 1984).
There are three consequences of isolation. They are listed below:

1. The teachers will lack a shared technical culture of teaching.

2. The teachers are deprived of the professional help and support of their fellow teachers.

3. The teachers may be plagued with feelings of uncertainty about their abilities to improve student learning (Meichtry, 1990).

It is agreed by most researchers that teachers who are members of interdisciplinary teams do not work in isolation. Therefore, interdisciplinary teaming may eliminate feelings of isolation (MacIver, 1990; MacIver & Epstein, 1991; Peters, 1989; Whitford & Kyle, 1984).

When teachers are having problems with students, discussions with team members alleviate the isolation teachers may experience. When teachers make decisions about participation in some activity that is planned by the team, the decision-making autonomy itself may serve to enhance linkages among the team. Therefore, the decision to participate or not to participate reduces individual teacher isolation.

Interdisciplinary teaming may eliminate the isolation that is experienced by teachers in middle school and high school departmentalized settings. However, since team meetings replace departmental
meetings, teachers teaching the same subject matter may have little opportunity to share ideas that might enhance instruction in their field (MacIver, 1990; MacIver & Epstein, 1991; Peters, 1989; Whitford & Kyle, 1984).

**Summary of Isolation**

Isolation was not considered to be an educational problem until the mid-nineteen hundreds. Educators accepted isolation because of physical constraints. In the 1960s research began to develop on isolation and its effect upon teachers.

Researchers found that some teachers enjoy the autonomy of their classroom and do not feel isolated. However, other teachers do feel isolated. Isolated teachers are deprived of the professional help and support of fellow teachers. Teachers may have feelings of uncertainty about their abilities when they are isolated.

Physical constraints such as location of classrooms often cause isolation. Location of classrooms is usually determined by the department or subject matter that is taught. Teachers seldom see other teachers outside their departments. As teachers interact, this interaction is generally social interaction. They seldom discuss educational topics and problems. Therefore, teachers experience much professional isolation.
Collaboration and Collegiality

Research has shown that a positive side effect of researchers working closely with teachers is that the teachers examine their teaching more carefully when answering the researchers' questions. Research notes that collaborative relationships strengthen the professional commitment of those involved in the collaboration. Collaboration leads to individual and group actions that improve teaching and learning (Campbell, 1988; McClean, 1991). This research implies that similar results may occur for teachers in high schools who collaborate.

Such collaboration is shown in schools that are exemplary schools. These schools have faculties that cooperate and act as a team rather than as separate departments. This collaboration enables the faculty to cope with problems and implement school improvements (Gilbert, 1985).

Some schools have been restructured so that such collaboration becomes easier (Lear, 1989, Newmann, 1993). This type of restructuring has created small communities such as teams, families, or divisions of teachers and students that stay together over an extended period of time. If students and teachers become aware that they will have face-to-face contact for a large part of the day and if they know that this will continue for a year, they will be able to develop
trust and personal bonding (Lear, 1989; Newmann, 1993).

Researchers studying interdisciplinary teaming at middle school and elementary school levels found that teachers who collaborate develop a greater sense of professional pride. This sense of professional pride is needed so that the gap between the way schools are and the way educators would like them to be will be closed (Barth, 1985; Rosenholtz, 1988).

Teachers who collaborate on interdisciplinary teams have high levels of collegiality with teachers who teach different subjects. Teachers who work together frequently develop strong bonds and easy camaraderie. The bonds and camaraderie are not limited to other teachers of the same subject matter, but may be shared with teachers who teach other subjects. Interdisciplinary teaming and any resulting collegiality provide a supportive environment that overcomes isolation (Erb & Doda, 1989; George & Oldaker, 1985; George, Spreul & Moorefield, 1987; Lear, 1989; MacIver, 1990; Newmann, 1993).

Teacher practices are influenced by the collaborative nature of their interactions. These interactions result in support that ranges from collegial to personal. Collaboration and collegial relations that may result from interdisciplinary teaming cause the teachers to place trust in one
another. This trust is built as the teachers plan together and share organizational skills. They share and develop judgments about how a course needs to proceed or the best approach with a particular student (Lear, 1989; Meichtry, 1990).

Research has shown that when teachers talk often, this teacher talk becomes more intellectual, more abstract, and more informed by reflection. As members of interdisciplinary teams, teachers decide which curriculum goals and activities are appropriate. All team members help decide what is best for the child. Teacher talk of this kind improves intellectual stimulation and professional development.

Colleagues work together in groups to discuss common problems, common students, and direct activities. As team teachers plan thematic lessons, instruction becomes more effective. Discussions among team members develop at times other than team meetings. Teachers begin to recognize the support that they get from each other. Teaming and resulting teacher talk is reported to create a special type of professional support that often becomes personal. This support sometimes come in the form of social support and understanding from other members of the team (Alexander & George, 1981; Arhar, et al, 1989; Boyer, 1983; Carnegie Council on Adolescent Development, 1989; Erb, 1987; Davis, 1987; Lear, 1989;

Collaborative efforts center on decision making with regard to instruction, discipline, and evaluation of the team's students. Teachers discuss practices and beliefs as well as sharing sentiments about work-related issues. Teams view the personal support they receive to be as vital as the professional support (Arhar, et al, 1988; Johnston, Markle, & Arhar, 1988; Meichtry, 1990).

Research indicates team teachers who teach different subjects collaborate for joint planning of content, evaluation, and instructional activities. When students are grouped by ability the amount of collaboration is reduced. Thus, the collegiality among team teachers is reduced. Collegiality among teachers is increased as teachers began to integrate different subjects (Meichtry, 1990).

Collaboration at Thayer High School is described as a "division of labor." The teachers collaborate, yet each teacher takes responsibility for their own subject matter. The teachers plan together to help the students make connections as they go from class to class, from one subject to the next (Lear, 1989).

Collaboration at Forsyth and University Heights is described differently. The knowledge is not departmentalized (subject specific). The instruction
is not based on the demands of the subject in the conventional sense. Each teacher (although there are some exceptions) takes responsibility for all parts of the course content (Lear, 1989).

Collaboration in high schools helps develop collegial relations. As teachers work together, they frequently develop strong bonds and easy camaraderie, both in school and after school hours. Collegial relations increased as teachers worked on interdisciplinary teams (Lear, 1989).

Schools that have successfully implemented interdisciplinary teaming assure that the teachers have the time and opportunity to talk, share ideas and share planning. These schools indicate collaboration is a source of team building and decision making by team teachers helps build morale. The interactions with colleagues, the cooperation among teachers, and the utilization of team concepts encourage teachers to perform their best. Collegial interaction may enhance teacher efficacy as it creates an atmosphere of support. Teachers discover ways of working together, learning to defer to one another on matters closely related to expertise. They share, help and are helped by others (Anderson, 1987; Ashton & Webb, 1986; Arhar, et al, 1988; Brodinski, 1984; Clandinin, 1993; Clandinin & Connelly, 1988; Clark, 1980; Johnson, 1990; Stavro, 1992).
Summary of Collaboration and Collegiality

Research has shown that a positive side effect of interdisciplinary teaming is increased collaboration and collegiality. Teachers work together to solve problems and implement school programs. Teachers who collaborate develop a greater sense of professional pride.

Interdisciplinary teaming promotes collegiality that ranges from personal to professional support. Collegiality increases as teachers integrate subjects. As collegiality creates an atmosphere of support it may enhance teacher efficacy.

Conclusions of Collaboration, Collegiality, and Isolation

High levels of isolation are present in most high schools. Although this was not seen as a problem until the mid-nineteen hundreds, research has shown that the isolation teachers experience causes uncertainty, loss of professional support, and low morale.

Interdisciplinary teaming has been shown to decrease isolation. Teachers work together in collaborative settings, planning lessons, discussing discipline and other professional topics. Collaboration may develop into relationships that
often become personal as well as professional. Strong bonds and trust among teachers are often developed.

The literature reviewed on teacher isolation, collegiality, and collaboration informed my study by indicating ways interdisciplinary teaming increases collaboration and collegiality and decreases isolation. I was able to observe the team to determine whether similar influences resulted from the interdisciplinary teaming process.

Interaction and collaboration among teachers give the opportunity to find and share beliefs about interdisciplinary teaming. Actions that were previously independent and autonomous now become part of the group structure, and thus, have effects on the patterns and symbols of interaction that occur. Literature shows that teaming is associated, not only with increased interaction among teachers, but also with increased interdependent work and relationships (Cohen, 1981; Cohen & Bredo, 1975; Little, 1982; Little & Bird, 1984; Rosenholtz, 1989; Whitford & Kyle, 1984).

**Symbolic Interactionism**

Symbolic interactionism is the theoretical framework that allowed me to examine the influences that interdisciplinary teaming had on the teachers.
There are three central principles of symbolic interaction. These principles are:

1. Human beings act toward things on the basis of the meanings that the things have for them,
2. This attribution of meaning to objects through symbols is a continuous process, and

Culture develops as action builds among a group of people. However, just as people continually change so does the process by which the culture changes. Thus, the culture of the group undergoes a continual change, also.

Meanings are seen as social products, but this social behaviorism is different from the behaviorism associated with Watson (1913) or Skinner (1953). When people react to others by involuntary movements of defense, training their responses, or by habitual activity, this behavior is a reaction by instinct and without thought. However, much activity by individuals is symbolic, involving construction and interpretation both within self and others (Woods, 1972).

The interpretative process that occurs within an individual modifies socially derived meanings. The interpretation may be made as a
result of actions or words and this interpretation will guide the actions of individuals (Blumer, 1962). Symbols can be both verbal and nonverbal. Language increases our powers of reflectivity and our ability to interpret the interaction that takes place in social groupings (Woods, 1972).

Symbolic interactionists believe that the individual and society are inseparable. If you understand one, you understand the other (Jacob, 1987). Symbolic interactionists are concerned with the participants' points of view, that is, covert behavior. They are also concerned with the processes by which behavior develops.

An example of how group life creates rules is demonstrated as we watch young children grow. Children learn a set of meanings and values that is shared by society. They are required to learn these meanings and values if they are to participate in society. Symbolic Interactionist see the role models that children follow, not as a prescriptive list of behaviors from which the child makes selections, but rather as a more abstract model, offering general guidance. A young girl may like to climb trees, play rough, or fight. As she grows older she becomes more conscious of her sex role, and her conduct may be inhibited. If this occurs, she will have "taken the
role of the other." She will have seen herself as others view her. The girl has constructed her response by interpreting what is appropriate conduct for a female, not because of her inclinations. In this way, males and females make interpretations that are dictated by their sex (Woods, 1972).

Blumer (1962) takes the stand that it is the social process in groups and group life that upholds and creates rules, not the rules that uphold and create group life. "Symbolic interaction sees group life as a process in which people, as they meet in their different situations, indicate lines of action to each other and interpret the indications made by others" (Blumer, 1962, p. 52).

Within a symbolic interaction framework therefore, the personal meaning that teachers develop from being on an interdisciplinary team is contingent upon the actions of the other team members and on the dialogue that takes place with other team members. This means that teachers will see their own behavior not only from the viewpoint of other team members, but also in terms of generalized norms, values, and beliefs of the team (Woods, 1972). The symbols, both verbal and nonverbal (i.e. the actions and words of the team) will influence the teachers' meanings about the interdisciplinary teaming process and each other.
Summary of Symbolic Interactionism

There are three central principles of symbolic interaction: (1) meanings are developed as a result of actions, (2) this meaning is a process, and (3) this meaning is a product of social interaction. The meanings that are developed are a result of construction and interpretation, both within self and others.

The interpretative process modifies socially derived meanings, and may be a result of words or actions. This interpretation is unconscious, rather than conscious. The social process in groups upholds and creates rules as behavior develops.

Literature review on symbolic interactionism enabled me to observe the team teachers' interactions from within this framework. I observed the actions and the results of the unconscious interpretations of these actions. Thus, I was able obtain a clearer understanding of the common goals and common meanings the group developed about interdisciplinary teaming.

Construction of Knowledge

Connelly & Clandinin (1986) have coined the phrase "personal practical knowledge" to describe the personal knowledge that teachers construct about teaching. Personal practical knowledge is constructed as a result of interaction with students, teachers,
administrators, and other school workers (Powell & Mills, 1994).

When teachers interact as members of interdisciplinary teams, the varied interactions encourage a natural mentoring process. Personal practical knowledge is gained through this natural mentoring. Natural mentoring is unlike contrived mentoring. Contrived mentoring is that which is mandated by school districts, states or other agencies, pairing experienced and novice teachers together so that the novice teachers may receive support and assistance from more experienced teacher (Bey & Holmes, 1990; Cole, 1991; Torrence, 184; Wasley, 1991). This type of mentoring is less likely to help the teachers to form "significant relationships." Cole (1991; also see Wasley, 1991) indicated that significant relationships with at least one other teacher were formed with self-selection.

Teachers on interdisciplinary teams often become mentors to each other. Knowledge gained from this natural mentoring process is gained in five different ways. Powell & Mills (1994) categorized these five types of natural mentoring. These five types of mentoring are collaborative, clerical, professional teacher, interdisciplinary content, and social informal
Collaborative mentoring is present when the teachers demonstrate a willingness to learn from each other. When teachers want to learn and share ideas, they request information or information is volunteered in informal conversation. This sharing of information provides ideas on which the teachers can build their personal practical knowledge (Powell & Mills, 1994).

A second type of mentoring, that of clerical mentoring occurs when teachers help other teachers learn clerical activities such as completing regular reports on students, setting up grade books, and other bureaucratic procedures. Clerical mentoring involves knowledge about planning lessons, procedures for team meetings, and coordinating test schedules and class projects. Clerical mentoring also "provided teachers with a powerful springboard for exchanging deeper views, beliefs, attitudes, and values for teaching and learning" (Powell & Mills, 1994, p. 18).

Encouraging each other on a professional level occurred during the next type of mentoring, that of professional teacher mentoring. Informal conversation and discussion of professional goals lead teachers to plan professional development inservices. The team teachers may discuss student achievement and plan activities that will assure the achievement of all students, and extend their professional expertise to
other teachers who are non-team members (Powell & Mills, 1994).

The fourth type of mentoring, that of interdisciplinary content mentoring results when teachers plan unit lessons, student activities, or instructional strategies. The teachers feel they learn about other subjects as they engage in these activities. They learn curriculum content as well as curriculum strategies because of the influence of other team teachers (Powell & Mills, 1994).

The last type of mentoring is social informal mentoring. Social informal mentoring occurs throughout the day as teachers share information, eat lunch, and spend time together as they walk from place to place. As teachers spend more informal time together they freely give suggestions and ask for advice. They view the members of the team as supportive resources for problem-solving and encouragement.

Summary of Construction of Knowledge

Personal practical knowledge is constructed by teachers about teaching though interactions in the school setting. This knowledge is gained from natural mentoring as teachers associate and interact with each other in their daily work.

According to Powell & Mills (1994) there are five types of mentoring. They are collaborative, clerical,
professional teacher, interdisciplinary content, and social informal.

**Conclusion**

Research at middle and elementary levels of education has shown that interdisciplinary teaming influences teacher collegiality and teacher isolation. Usually, as teachers on an interdisciplinary team interact, isolation decreases and collegiality increases. The limited studies of interdisciplinary teaming at high schools indicate that teacher isolation and teacher collegiality are also similarly influenced by interdisciplinary teaming. However, we must be aware that interdisciplinary teaming means different things for different schools.

Research indicates that there is a high level of teacher isolation at high schools. Teachers working within a department organizational school structure have few interactions with other teachers, especially with those teachers who teach different subject matter. Though some teachers report that they like this independent, autonomous method of instruction, research shows that isolation among teachers affects teacher morale and self esteem.

Collaboration has been shown to alleviate the isolation that teachers experience. Interdisciplinary teaming implies but does not compel collaboration.
However, when collaboration is present teachers find that greater collegial relations, camaraderie, and trust develop among team members.

Within the symbolic interactionist framework this study will explore the influence of interdisciplinary teaming upon collegiality and isolation at the high school level. As the team members meet, the interaction with other teachers will cause each team member to interpret other's actions and develop their own meanings about the interdisciplinary teaming process. As the social process of meeting continues, and symbols develop, the team members will begin to work toward common goals.
CHAPTER THREE

METHODOLOGY

Introduction

The purpose of this chapter is to describe the methodology that I used to explore the influence interdisciplinary teaming has on teachers in one high school setting. Section one of this chapter describes the context of an urban high school. A description of the research participants and why these participants were selected for the study is included in section two.

In section three I discuss the research methods and data collection procedures. In section four, I give a description of the data analysis methods, and in section five I discuss the goodness of the study. Sections six, seven and eight include the assumptions, theoretical sensitivity, and limitations for the study respectively.

Research Context

The high school that I selected for this research study, Raider High School (RHS)\(^1\), is in a large urban

\(^1\) All names of schools and persons are fictitious.
area in the desert southwest United States. The school has in recent years been an academically talented school in this city. RHS was (and still is, though with a much reduced enrollment) the site of the prestigious International Baccalaureate (I. B.) program.² In the school year of 1990-1991, the school housed 3175 students and from this population there were eleven national merit scholar semi-finalists. In the school year, 1991-1992, a neighboring suburban high school opened and many of RHS's students became students of the neighboring high school. The senior class remained at RHS.

Seniors from RHS have attended prestigious colleges across the nation. MIT, Stanford, Annapolis, UCLA, and other colleges were the selected institutions of higher learning for graduates from RHS. During the years of high enrollment in the I. B. program, RHS was not considered to be an inner city school. That is, it did not have many of the similar problems that some inner city schools have. However,

² The International Baccalaureate program is one in which the students must enroll in Distinguished Scholars classes for the last three years of high school. At the end of their senior year, they must have passed an international test in various academic areas. These are graded at the national level and they must score a specified amount on each exam. They must accumulate a required amount of total points and they must write an extended essay to receive the International Baccalaureate Diploma.
during the transition period when many of the I. B. students left to attend the new high school, there were no national merit scholars, and fewer graduating seniors were accepted into prestigious colleges. This transition left RHS with more of the characteristics of an inner city school.

As a result of new school openings, the administration at RHS changed. In 1992, a new principal, Ms. White, was assigned to RHS. As she witnessed the changing population of the school, she began to search for ways to maintain the high academic standards that previously had been present at the school. She read about the Accelerated Schools Projects\(^3\) that were being implemented in elementary schools around the nation. As a result of this reading, she felt that some of the precepts could be implemented in "her" high school. Interdisciplinary teaming was one of the precepts she implemented. As a result of this interdisciplinary teaming, teachers who teach different subject specialties would be working together with a common group of students.

Interdisciplinary teaming was new to RHS as it would be to most high schools, since traditionally most teachers in secondary schools work more closely with

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\(^3\) For a more comprehensive explanation of the Accelerated Schools Project see Appendix D.
other teachers who teach the same subject specialty (Whitford & Kyle, 1984).

In the fall of 1992, Ms. White implemented a pilot program of interdisciplinary teaming and continued the program for the school year 1993-1994. Therefore, this was the second year of the interdisciplinary teaming program at RHS. I conducted a pilot study during the first year of the program. During the pilot study I observed specific problems surface for the interdisciplinary teams. The problems for both teams were related to student discipline.

As a result of these problems, the program changed so that the interdisciplinary structure of the school changed. Approximately ninety students were selected randomly from the freshman class for the program during the 1993-1994 school year. Eleven teachers were selected to serve as the team teachers for these ninety students. There are three teams of teachers. Two teams consist of a math teacher, science teacher, two social studies teachers, and two English teachers. The third interdisciplinary team has one science teacher, one English teacher, and one social studies teacher. Scheduling problems made it impossible for a math teacher to serve on this team.

As indicated above, two interdisciplinary teams had six teachers on each team. Math and science teachers were constant on each of the two teams. The
pre-algebra and earth science teachers shared the same students. They, formed the math-science component of one team. The algebra and biology teachers shared the same students, forming the math-science component of the second team. The English and social studies teachers shared students with both of the math-science interdisciplinary team teachers.

One group of students attended an algebra class together and then at some time during the day they attended a biology class together. The same arrangement occurred for the second group of students. These students attended a pre-algebra class then attended an earth science class together. The two groups intermingled to attend their English and social studies classes. They had classes with the whole student body for the two elective classes.

The third team of students attended the science, English, and social studies classes together, then they attended classes with the student body at large for math and the two elective classes. The three teams are called the "family" by administrators and team teachers.

During the school year 1993-1994, Ms. White was assigned to another new school. She left for her new assignment at the end of December and RHS now has a new principal, Ms. Lake.
Research Participants

The interdisciplinary teaming organization of RHS consisted of the three teams of teachers described above. I selected my teacher participants from the two six-member teams. I discuss the rationale for the selection of the four participants below.

Selection of Participants

There were 4 teacher participants in this study. Of the eight teachers on the two teams, only two teachers had prior experience in the program. The other six teachers were new teachers in the program and three of these were new teachers at RHS. A key feature of the participants of the study was that only two of the teachers had prior experience with interdisciplinary teaming. I selected these two teachers as two of my participants. I then selected two additional participants from different subject areas and with different levels of experience. Since these teachers were not in the program during its pilot year, this selection gave me the opportunity to study the influence interdisciplinary teaming had on teachers who had previous experience with interdisciplinary teaming and the influence the program had on teachers with no prior experience with teaming.
Work Experience

The two participants who had experience in interdisciplinary teaming have had continual work experience in public schools since their entry into schools as beginning teachers. The two teachers who have not had prior experience in interdisciplinary teaming have had work experience outside educational settings. Table one (p. 68) gives a brief summary of the experiences of the teachers selected for the study.

Three different subject specialties were taught by these teachers, and two of them (the two with prior experience in the program) taught the same subject specialty. This selection of participants allowed me to examine influences on isolation and collegiality among teachers who taught different subject specialties, as well as allowing me to examine influences on teacher isolation and collegiality of teachers of the same subject specialty.

The four teachers came from varied backgrounds and teaching experiences. Sharla, the English teacher, had one year of teaching experience. Sharla had worked in business for ten years prior to returning to college so that she could complete the educational requirements for teaching. The energy and enthusiasm that she demonstrated during her first year as a teacher suggested that she would be an excellent
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<th>Years Teaching</th>
<th>Years of Team</th>
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<td>7</td>
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<tr>
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<td>5</td>
<td>0</td>
<td>5</td>
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<td></td>
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<tr>
<td>Science (Dave)</td>
<td>32</td>
<td>6</td>
<td>26</td>
<td>1</td>
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Table 1: Experience of Teachers on the Disciplinary Team
candidate, not only as an English teacher in the program, but also as an important member in the study. In addition to being a member of the interdisciplinary team, Sharla taught the Advanced Placement (A. P.) English classes.

Linda, the mathematics teacher, returned to teaching after ten years of temporary retirement. She taught junior high school five years before her retirement. She left teaching when she became a mother, returning to teaching after her children entered school. During her time away from the classroom, Linda attended various classes at the university. This university attendance kept her abreast of the current trends and issues in education, in addition to keeping her teacher certification current. Linda's teaching assignment also included teaching classes of trigonometry and pre-algebra.

Dave was the Biology teacher on the team. He has thirty-two years in education including eight years in administration. After early retirement from education in a different state, Dave joined the staff at RHS, where he has taught for three years. He has been the Department Chair (D. C.) of the science department for two years. Dave was a member of the algebra-biology interdisciplinary team in the pilot year.

Brad was the youngest member of the team in age chronologically. He has spent all five years of his
teaching experience at RHS. Brad taught five periods of earth science and in the fall he was an assistant football coach for the varsity football team. He was the earth science teacher on the team. Brad was the science member of the pre-algebra-science team in the pilot year of the program.

Case Study Research Method

The interdisciplinary teaming program at RHS was unique. The school was the only site in this school district that had such a program. Knowing this, there is a need to better understand how the program worked at this site, and the influence that the program had upon teachers. There is also a need to look at the implications this program has for other high schools in the future. As the program of interdisciplinary teaming has not been implemented at other sites, it is difficult to use methods that attempt to capture and generalize the findings to other high school settings. The characteristics of the study as well as the questions suggest that a qualitative research design is needed.

Theoretical sensitivity (Strauss & Corbin, 1990) gained through teaching on one of the interdisciplinary teams during the pilot year enabled me to study the influence of interdisciplinary teaming on the teachers at the school site (Erickson, 1986).
I studied the program during the second semester of the pilot year, interviewing teachers and observing teachers on two teams.

A case study design with multiple data sources enabled me to show triangulation. The use of multiple sources of evidence is a major strength of data collection, far exceeding other strategies (St. John, 1982; Strauss & Corbin, 1990). Data was collected weekly during one semester. As the researcher, I scheduled interviews and observations with the selected teacher participants of the study.

**Interviews**

LeCompte & Preissle (1993) state that interviews are advantageous over other, less obtrusive, measures such as questionnaires, since the researcher can guide the revelation of information. The interviews provided a personal interaction with teachers on the interdisciplinary team, thus enabling me to address the questions of the study.

An initial interview approximately one hour long was conducted at the beginning of the study with each of the participants. Oakley (1981) suggests that engagement in dialogue should have warmth and the personality exchange of a conversation. Open-ended interviews were designed to stimulate further inquiry. The information acquired during the open-ended
interview aided in the development of a general interview guide. Additional interviews were conducted throughout the study, as suggested by data collection. At the beginning of case study research, knowing a finite number of interviews was problematic. However, upon entering the field and as data was initially collected the number of interviews were driven by the needs of the study. Interviews were conducted consistently throughout the study so that I did not lose touch with the research context.

The interviews were used as a primary source of evidence. Two kinds of interview were used. These included both formal and informal. Formal interviews were conducted at predetermined locations and times and were audio taped, then transcribed.

During the initial interview, the teachers were questioned about their teaching and work experience and about the inservices and preparation they had been given for interdisciplinary teaching. During the second and following interviews, using the interview guide found in Appendix C, I asked questions about (1) collegial relations of the interdisciplinary team teachers with other teachers, (2) any isolation that was experienced by the team teachers, (3) knowledge that the team teachers have about interdisciplinary

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4 The consent form for these interviews is found in Appendix B.
teaming, and (4) what the teachers were doing as a team.

The interview guide was developed after the initial interviews and served as an aide during the following interviews to insure that all relevant topics were covered by the respondent.

Spontaneous conversations developed into conversational interviews, yielding evidence that was recorded at the end of the interview (Oakley, 1981); because of the nature of these interviews, they were not audio taped. This type of interview was so well embedded within the conversation that the respondent may not have been aware of being questioned (LeCompte & Preissle, 1993).

Observations

I made observations of team planning meetings throughout the semester. Meetings that I was unable to attend were taped. Frequent visits to the case study site created the opportunity for direct observation, and according to Yin (1989) "[observations] can range from formal to casual data collection activities " (p. 91).

The purpose of these observations was observe the informal and formal interactions among the team teachers. The observations provided additional information about isolation and collegiality that had
a relationship to the interaction among team members (Yin, 1989). The data that was accumulated as a result was logged as field notes. I also observed the interdisciplinary team during two staff development workshops they attended. The purpose of the staff development was to guide the teachers through the planning of their first integrated project.

**Documentation**

Documentation is an important source of information when used by researchers (St. John, 1982). The usefulness of documentation for this study was to corroborate and augment evidence that resulted from other sources (Mathison, 1988; Yin, 1989). Documents such as memos, workshop handouts, personal records, and any other documentation received by the teachers was used as a source of evidence.

Documentation of this type (1) was a source of inferences about the nature of the interdisciplinary team and (2) documented and corroborate information received from other sources. These inferences were not definitive findings, but rather clues worthy of further investigation (Yin, 1989).

**Data Analysis**

Within a symbolic interactionist framework and using the procedures suggested by Strauss and Corbin (1990), I used the constant comparative method of data
analysis. The constant comparative method included coding or analysis that enabled me to generate key concepts that explained general trends relating to the research context and questions (Strauss & Corbin, 1990).

The constant comparative method suggests that data analysis begins as data are collected. As I reviewed field notes of observations and as I reviewed interview transcripts I searched for categories, themes, or key concepts that were indicators of teachers' construction of knowledge about interdisciplinary teaming, indicators of teacher collegiality, indicators of teacher isolation, and indicators of the meanings that the teachers developed about interdisciplinary teaming. As I collected additional data and as I coded this data, I compared existing themes, categories, and key concepts with those that were newly generated and then continued to search for existing themes in new data to determine if the themes were valid over time.

Coding

Two types of coding suggested by Strauss & Corbin (1990) were used to analyze the data. They were open coding and axial coding.

During open coding, I named and categorized phenomena by close examination of the data. That is,
as I reviewed interview transcripts, field notes of observations, and various documents that I had collected during the study, I sorted the data into themes or categories that represented the specific questions of the study (Strauss & Corbin, 1990).

After breaking the data into categories and patterns, I began searching for common threads between these themes and categories. As new categories and themes emerged, existing categories and themes were modified. Strauss & Corbin (1990) call this type of coding, axial coding.

Goodness of the Study

Part of the phase of evaluating the data is to test for informational transferability, dependability, credibility, and confirmability (Lincoln & Guba, 1985). Lincoln & Guba (1985) refer to the trustworthiness of a study as establishing the "truth value" (p. 290) of the study. Methods to meet the four criteria in this study are summarized in Table two. (p. 77)

Transferability

Findings of this study is a thick description and interpretation of the given context, thus it does not have general applicability. The study was set in a social/behavioral, naturalistic inquiry, and the
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transferability of the study was context bound. The results should be transferred only to similar participants in a similar context.

**Dependability**

The case study data base is separate from the case study report. Yin (1989) suggests that the data base should be in a retrievable form. This formal data base may be used by other researchers to review the evidence that was collected. The data base includes the researcher's field notes, documents, and interview transcripts. The guidelines of the University of Nevada, Las Vegas and its Human Resources Department will be followed and all audio tapes will be destroyed after two years.

**Credibility**

Triangulation (Mathison, 1988) was the primary means for assuring credibility for this study. Multiple sources of data was used. These sources were interviews, observations of the teacher participants, and varied documents.

**Confirmability**

According to Lincoln and Guba (1985) triangulation of data assures confirmability. Using of a variety of methods, collecting data from a
variety of perspectives, and using a variety of sources tested my predilection as strenuously as possible.

**Assumptions**

As the researcher, I entered the research with certain assumptions about the study. These assumptions were grounded in the theoretical framework of symbolic interactionism and also in the methodology that I selected to explore interdisciplinary teaming.

First, from the framework of symbolic interactionism, I assumed that the interdisciplinary teaming process would cause the teachers on the interdisciplinary team to develop personal meanings about the program, about teaching, and about the other members of the team. I further assumed that they would act on the basis of the meanings they perceived, and these actions would cause them to work toward common goals.

Because of the theoretical sensitivity I had gained as a member of an interdisciplinary team, I assumed that there was some teacher isolation among the teachers on the interdisciplinary team, and that as a result of the interaction among the teachers, this isolation would be decrease.
Theoretical Sensitivity

During the first year of the program, I was a member of the interdisciplinary team at RHS. Since I was a member of the interdisciplinary team, I participated in all interdisciplinary team activities and I interacted with other teachers from other subject specialties. This experience as well as eighteen years of teaching gave me the theoretical sensitivity to develop the research questions for this study and to understand the context within which the teachers work. This theoretical sensitivity was an aid to interpreting the data, enabling me to write the results from the voices of the participants.

Significance of the Study

Many high school teachers are discontented and unhappy in their position; their morale and self esteem are low (Carnegie Foundation for the Advancement of Teaching, 1989; McCarthy, 1992b). When teachers begin to collaborate with other teachers, they find that teaching becomes a rewarding experience; thus, morale and self esteem improve (McClean, 1991). This study provided information on the type of collaboration and/or isolation that resulted from implementing interdisciplinary teaming at an urban high school. Since interdisciplinary teaming was new among most teachers in this study,
this project adds to the body of knowledge about the influence of interdisciplinary teaming on high school teachers and it adds to the body knowledge about the influence of interdisciplinary teaming in general. The study also adds to the body of knowledge on Symbolic Interaction as I observed teachers develop common personal meanings that enabled them to work toward a common goal.

**Limitations**

**Limitation 1: Limited Contact**

I had limited contact with the field since I was not in the school every day. Therefore, my observations were limited in number and data was constrained by this phenomenon. However, due to the results from the pilot study conducted at this school site, I was present in the school at times when the teachers on the team had optimum opportunity for interaction.

**Limitation 2: Focus of the study**

By focusing on the influence that the interdisciplinary team has upon the teachers, the scope of the data collection was limited. However, the goal of this study, seems most valuable as most research indicates the influence upon the student, and
gives limited results on the influence that is found on teachers.
CHAPTER FOUR

THEMES IN INFLUENCE OF INTERDISCIPLINARY TEAMING ON SECONDARY TEACHERS IN AN URBAN HIGH SCHOOL

Introduction
Chapter four presents findings of the influences of interdisciplinary teaming on secondary teachers in an urban high school. Four questions guided the data collection.

1. How does interdisciplinary teaming influence teacher collegiality among high school teachers?
2. How does interdisciplinary teaming influence teachers' feelings of isolation?
3. What knowledge do teachers construct about interdisciplinary teaming over a school year?
4. What common meanings do the teachers develop as a result of their interactions?

As the data were collected and analyzed, salient themes began to emerge. The reporting of data with the use of emerging themes is recommended by qualitative researchers (Marshall & Rossman, 1989; Strauss & Corbin, 1990) and is used by other
researchers (Borko & Livingston, 1989; Furtwengler, 1991; Powell, 1990; Powell, 1992; Powell, 1993). Thus, this method of organizing and reporting data was used to communicate the findings of this research to others.

The amount and kinds of staff development to prepare the teachers for interdisciplinary teaming is first discussed. This examination was warranted, since the amount and type of preparation that were given to the teachers appeared to influence the knowledge they constructed about the team, the meanings they developed about interdisciplinary teaming and their desire to interact as a team. The six themes that emerged from the data are discussed. They are (1) lack of teacher commitment, (2) lack of teacher interest, (3) student discipline/student behavior, (4) administrative support (5) isolation and (6) collegiality.

Preparation for Interdisciplinary Teaching.

Entry Level Knowledge/Staff Development

Of the eleven teachers in the family¹ program, only two had prior experience teaching on an interdisciplinary team. These two teachers knew, for

¹ The teachers referred to the interdisciplinary team as the "family" and the program as the "family program" throughout the research.
the most part, what was expected of team members and they began the year looking forward to a successful year as an interdisciplinary team as Dave indicated in the following:

Basically they are a great group of teachers. Given the teachers in the program, I expected the program to work.²

The following remarks from Brad indicated his expectations for the interdisciplinary team.

We had nothing else to do this year but move on, if the team stayed in place. Last year we took the whole year getting the discipline under control and this year we should be able to move on.³

The pilot study that I conducted in the spring of 1993 revealed that these two teachers had attended interdisciplinary teaming staff development meetings during the summer and fall of 1992. The purpose of the staff development meetings had been to prepare the teachers for their initial year as interdisciplinary

² Initial interview, January 11, 1994
³ Initial interview, January 14, 1994
team teachers. Therefore, both Dave and Brad had some knowledge of interdisciplinary teaming. They were aware, through these staff development meetings, what was expected of teachers on an interdisciplinary team. However, this was not true of the nine remaining members. These nine members did not have any prior experience with interdisciplinary teaming. Linda described her reactions to the first meeting.

Our very first meeting in August was kind of a waste of time [she gave a little laugh] because it was geared more toward reading teachers. And it wasn't just RHS, but it was all of the schools and all of the teachers who were involved in the learning strategies program. The family group are all involved in this program, so it kind of overlaps.4

Further discussion with Linda revealed that the interdisciplinary team had not met prior to the staff development workshops on learning strategies. This staff development was attended by the team members, but also was attended by teachers from other schools in the school district. Subsequent interviews with the other team teachers corroborated this information.

Sharla's comments revealed her thoughts on the staff development.

We were sent a letter during the summer that they wanted us to attend some workshops, and that there would be three or four of them. Now these are not about interdisciplinary teaming, but reading strategies. We found out after school started in August, at our first meeting, that it was to be an on-going thing for three years! With lots of articles to read and respond to, none of us were happy campers about that! Most of us don't have time for this kind of thing!5

Because the family was an identified group, they all arbitrarily became members in two other programs that were implemented at RHS during the school year of 1993-1994. Members of these two programs were to attend staff development meetings on learning strategies6 and alternative assessment. While discussing the kinds of staff development that the

5 Initial interview, January 5, 1994.

6 The members of the interdisciplinary team also referred to the learning strategies group as the reading strategies group, since most of the workshops promoted the use of reading and vocabulary in all classrooms, not just in classrooms teaching English and social studies.
interdisciplinary teachers attended, they all made frequent references to these staff development meetings.

The members of the team attended subject specific sessions at the alternative assessment workshop, rather than attending the workshop as a group. Sharla was not pleased with the session she attended. Her comments indicated she would rather have attended the math session with Linda.

It was okay. The math was really interesting, Linda said. Ours was, well she talked about Bloom's taxonomy and alternative assessment. And I know all of that, but Linda said they did all kinds of alternative assessment. I have done portfolios and such, although I do very little with the family.\(^7\)

The last statement was the only reference Sharla made regarding the interdisciplinary team and alternative assessment. Comments by the teachers who were new to interdisciplinary teaming indicated that they did not have any preparation for working as members of an interdisciplinary team. During the initial interviews I inquired about attendance at

\(^7\) Follow up interview, March 5, 1994
staff development meetings on the subject of interdisciplinary teaming. Linda replied

There were no workshops on interdisciplinary teaming per se. I suppose that the administration felt like, well, if we got together for the learning strategies or alternative assessment this would help us as a team. I really don't know why [emphasis added] we didn't have any on teaming. We really have kind of learned about it as we have gone along.8

Team Meetings

Observations of team meetings indicated that the teachers had little knowledge that actual planning of integrated curriculum could be accomplished when they met. During team meetings they frequently discussed the learning strategies staff development or the alternative assessment staff development. They seldom discussed topics related to interdisciplinary teaming. One notable exception was their discussion about the use of vocabulary as an integrated part in each of their classes. This was a spin-off of the discussion they had been having about the learning strategies staff development. The following is a portion of the

8 Initial interview, January 6, 1994
dialogue between two teachers during the team meeting as they discussed the possibilities of using vocabulary as a connection across their classrooms.

Teacher One:

I suppose it would help if we all used the same vocabulary and stressed their meanings. There must be some vocabulary that we all commonly use, such as compare and contrast.

Teacher Two:

Well, we can discuss that the next time we meet, we can't get it together now. We don't have time. We can bring in the finished list and pass it around to all the teachers. I don't even know if vocabulary from math can be used by anyone but math.9

The discussion continued in this vein for two or three minutes. This discussion indicated that they tried to connect the learning strategies staff development with the team planning. However, they fell short of actual planning, and the vocabulary integration they had

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9 Observation, January 8, 1994
discussed never came to fruition as Dave indicated in the following:

Yeah, well we dropped the ball on the vocabulary thing. I guess we dropped the ball on a lot of things.\textsuperscript{10}

Another indication that the teachers were poorly prepared to be members of an interdisciplinary team is their lack of knowledge about the importance of meeting as a team. However, during one interview with Brad, he revealed that he understood the value of frequent meetings.

I told them that meetings at least [emphasis added] twice a week was very beneficial, just like the meetings we had as a team with the entire class, were beneficial.\textsuperscript{11}

The teachers on the team did not have common preparation time. Therefore, they had to meet after school. The literature review indicated that frequent

\textsuperscript{10} Final interview, May 31, 1994
\textsuperscript{11} Initial interview, January 14, 1994. The reference to meetings with the entire class was a reference to the previous year of interdisciplinary teaming.
meetings gave the teachers time to get to know each other and time to plan. The time the teachers spent together would aid them in constructing their personal practical knowledge.

The team had a lack of knowledge about how often they should meet. This became evident during an interview with Dave. He felt they met often.

Oh, we met at least six or seven times this year, quite a bit really. Our biggest concern was that not everyone attended every meeting.12

Dave implied that six or seven meetings were enough. However, the literature reviewed indicated that daily meetings between teachers are a necessary part of interdisciplinary teaming.

Linda and Sharla indicated they were not disturbed about the infrequent meetings. They had little desire to meet more often, giving time constraints to support their reasoning. This data revealed that Brad was the only team member who understood that frequent meetings would be beneficial to the whole team.

12 Final interview, May 31, 1994
The teachers planned their first interdisciplinary project in March. At this time they had two days of staff development meetings led by Brenda.\textsuperscript{13} Brenda's goal was to teach them to prepare an interdisciplinary project. As the teachers were planning, they continually made remarks such as, "I really am not sure what we are doing." And "I am kind of lost as to what is going on. Will it become clearer as the day [meaning the day of the workshop] goes on?" These remarks were made eight months after the interdisciplinary team had been formed, clearly indicating the lack of preparation for participation in an interdisciplinary teaming program.

Summary of Preparation of Teachers

Interviewing teachers indicated they were under-prepared to participate as members on an interdisciplinary team. They were given staff development meetings to prepare them for reading in the classroom and on alternative assessment, but they were not prepared for the intricacies of acting as members of a group. The staff development meetings they did attend were resented, perhaps because the

\textsuperscript{13} Brenda was the leader of the learning strategies program. She had worked with them during several workshops on learning strategies. However, this was the first time she had taught them anything about interdisciplinary teaming.
earlier staff development meetings were frequently announced too late for the teachers to prepare for their absence from class. Sometimes the announcement was made as late as the morning they were to attend.

The teachers did engage in planning one interdisciplinary project. However, this staff development was provided for the teachers until March, two and one-half months before school was to end. Since Brenda was directing the workshop, there was less interaction among the teachers and more interaction with Brenda during the actual planning of the project. All the teachers indicated that it was an exercise in futility, both for them and for the students since the school year was almost at its end and the program was not going to continue for the next year.

During these staff development meetings they learned briefly how to plan for an interdisciplinary project, but they were still not prepared for being teachers on an interdisciplinary team. They met only one other time after the staff development. This meeting was called by Sharla "in desperation." On May 31, 1994, during the last interview, these are the words that Linda used to describe the reason the meeting.
meeting, the team teachers realized that Victor\textsuperscript{15} was not doing his part. The teachers had not been prepared to confront such a situation. This occurred during the last month of school, and they simply chose to continue the project without him.

Lack of preparation for interdisciplinary teaming meant that teachers on the team had not developed the group skills necessary to cope when members did not complete the designed plans for interdisciplinary projects. The meetings of the teachers had been too infrequent for supporting, encouraging and helping teachers on the team, when such support and help were needed.

The natural mentoring to which Cole (1991), Powell and Mills (1994) referred, was limited for the teachers in this study. Since most of the teachers were unaware of the necessity for frequent meetings, interactions among the teachers were minimal.

However, some clerical mentoring occurred, even though the teachers met infrequently. This occurred briefly during the staff development meetings as teachers planned the interdisciplinary project and as they coordinated the time line of the project.

\textsuperscript{15}Victor was a social studies teacher on the team, but not a participant in the study.
Theme One: Lack of Teacher Commitment

The first theme to emerge from the data was lack of teacher commitment. The first indication that the majority of the teachers were not committed to the program was found in Sharla's words.

I told Ms. White at the end of last year that I didn't want to be a part of the interdisciplinary team. I didn't know until the first day we reported back that she had made me a part of it anyway. It wasn't a very pleasant surprise!16

At the end of the pilot year of the interdisciplinary teaming program, Linda and Joan Dunn17 discussed the possibility of Linda joining the team. The administration did not contact her to reaffirm that she was on the team until the beginning of the 1993-1994 school year. Her comments were:

Since they hadn't gotten back with me at the end of last year, I just assumed that I would not be teaching in the program, so I really wasn't even thinking about it. To be perfectly honest, I

16 Initial interview, January 5, 1994

17 Joan Dunn was the vice principal over-seeing the interdisciplinary team.
didn't want to think about it. They didn't seem very committed to the program, I thought they might even can [discontinue] it. I was really surprised that it was still in place. 18

Of the four teachers interviewed, only Brad showed commitment to the program. As indicated earlier, he believed that the program could advance positively, and at the beginning of the year, tried to encourage the other teachers.

I explained how we did things last year, and I was looked at like, "You are nuts. You mean to say that you guys met every week on Wednesday and Friday? And you sometimes didn't leave here until 3:00?" ...I told them I saw nothing but positives looking back. They laughed and said that I was too committed [emphasis added] to the program. I really ought to relax and not take it so seriously. 19

Brad's statements demonstrated his commitment, but also revealed the lack of commitment by other team teachers. This lack of commitment to the program was

18 Initial interview, January 6, 1994
19 Initial interview, January 14, 1994
not surprising since only three of the teachers had agreed to be on the interdisciplinary team. The other teachers were informed at the beginning of the school year that they were members of the team, or as Linda suggested, membership on the team was a condition of employment.

There are a lot of new teachers on the team. As a matter of fact, six of the eleven teachers in the family program are new to RHS. One teacher told me that she was offered the job on the condition that she would become a member of the family. She wanted out of where [previous teaching position] she was so bad[ly], that she told me she would have agreed to almost anything. After all, she said it would only have to be for one year. Then, she would bow out.\textsuperscript{20}

Appointed (compulsory) membership in the program did not promote commitment to the program. Instead, it may have caused the opposite to be true. The teachers resented the program and they resented the staff development they had to attend as a result of being in the program. Whether they would have resented any workshop, regardless of the topic is

\textsuperscript{20} Initial interview, January 6, 1994
unclear. However, resentment of the staff development meetings they did attend is evident from the following comments from Sharla:

You know, we do this reading strategies and alternative assessment which are in connection with the family. Everyone sits around and complains about having to attend. All of the teachers resent the time spent in these meetings. General consensus is that if they weren't members of an identified group, they wouldn't have to do all of this other junk.\footnote{Initial interview, January 5, 1994}

Linda also made the following comments about the commitment to the program.

You know of the three English teachers involved in the program, Sharla is the only one remained in it the whole year. One teacher taught three weeks and quit. I don't know if the family was the cause of her quitting, but Sharla told me it definitely influenced her decision, she was the one who was hired if she would agree to be a
teacher in the family. She showed real lack of commitment and responsibility.\textsuperscript{22}

After the English teacher quit, a substitute taught the family group for almost six weeks, then a new English teacher was hired in October. After the new English teacher was hired, Brad made another effort to encourage the team members to meet.

When we finally got an English teacher in place, I tried once again to get everyone to meet regularly, she [the new English teacher] kept on saying she really didn't know what was going on with the family thing, and everyone just kept on telling her that it didn't matter, because no one knew what was going on. I suggested that we get together and meet and everyone had this and that to do. I was doing this during football season, which is hard, but I would make that commitment if everyone would agree. And they wanted to meet "just when we need to." Well, doing things that way, no one is committed and you never meet or get things done.\textsuperscript{23}

\textsuperscript{22} Final interview, May 31, 1994

\textsuperscript{23} Initial interview, January 14, 1994
Theme Two: Lack of Interest

The lack of commitment shown by the teachers may have been a result of the lack of interest in the interdisciplinary teaching program. For all the teachers involved, the interdisciplinary team and the family group were not high priorities. The interviews gave evidence that their interest was elsewhere. The following comments by Linda indicate where her interest lay. Linda had a student teacher, Terri, during the first semester. When Terri became responsible for teaching her first class, Linda quickly assigned her the family class. She was much more reluctant to let Terri teach her trigonometry class.

You know I had a student teacher during the first semester, I made sure that she took over that class [family] first. You know she took over one class, then another, then another, I just decided that she needed to handle the family situation first. I didn't want to give up my Trig/PreCalc at all, but I had to give up one of them, since Terri had to teach four classes. 24

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24 Follow Up interview, March 31, 1994
Sharla's comments indicated her interest did not lie with the family group.

I do very little with the family. The family is just not my priority. I spend most of my time on my A. P. classes. They really are fun, but are very time consuming, they require a lot of work.

Dave was more blunt with his comments.

What can I say? I hate the family, I hate the kids. It is a thorn in my side.

The lack of interest that the teachers had is made evident by the following comments from Dave.

I have trouble getting the social studies teachers together for the meetings. The last three meetings they have missed. One is a soccer coach, so you can just write him off, he is never around after school. The other forgets [italics added] to come, even though I put a note in his

25 A. P. classes are advanced placement classes. These classes are college classes taken at high schools. Some colleges give college credit if the student is capable of passing the A. P. exam at the end of the school year.

26 Follow Up interview, March 5, 1994
mailbox the day before and [emphasis added] on the mornings of the meetings.\textsuperscript{28}

Brad's comments follow.

We met in our meeting and a lot of things came to a head. And what the problem was, is that we have a bunch of teachers who do not believe in what they were doing, so they weren't going to do it. They didn't value the family group thing. They were really negative about it, because they had no interest in it.\textsuperscript{29}

During observations of the March staff development meetings on the integrated project, observations indicated that the team had never become a cohesive unit. They vented about the program for the first two hours and accomplished nothing. Brenda, the director of the program was patient and let them vent. After much time had passed, they began to work on a theme of change and progress for the project and discussed how the teachers would introduce the theme into their classrooms. The first meeting ended with

\textsuperscript{27} Initial interview, January 11, 1994
\textsuperscript{28} Initial interview, January 11, 1994
the appearance that the teachers were interested and eager, although many of the teachers appeared to be uncertain of what was expected of them.

One week later they met again to work out the final details and to develop a time line for the project. The meeting began with the teachers complaining about the program. During this observation, I felt that the group moved backward in the development of group dynamics, the development of trust among interdisciplinary team teachers, and the commitment of the teachers. My feelings were confirmed during the next interviews. Dave had these comments to make:

'It was painful. I finally had to tune them out, because I was sick of messing with all of those people [the teachers on the team]. They asked some of the gosh-darndest things I ever heard in my life. Brad, Melanie, and I would kind of hold on to our heads to keep them from throbbing. They went through all that stuff again that I thought we were past, like "How do we all make this thing work?" You know they were saying things like, "I can't do that on Wednesday, that

29 Follow up interview, April 4, 1994
is my video day," or "I can't do that on Tuesday, because we free-read that day."\textsuperscript{30}

Dave's disgust with the first half of the meeting ended with this final statement.

I thought we were way past all that. It ought to serve as a good reminder that we talk a lot about working together and integrating our stuff, but when it comes down to putting it on paper as "On Monday, I am doing this and you are doing that, we have all kinds of problems."\textsuperscript{31}

Sharla made the following comments about the interdisciplinary project.

Victor [social studies teacher] has no interest in anything but money. He sat in my room and told me so! He and I were supposed to carry the biggest load on our project. He did nothing, I had to go back and do every bit of his part. I will never ever [emphasis added] carry another teacher on my back because they refuse to do their part!\textsuperscript{32}

\textsuperscript{30} Follow up interview, March 21, 1994

\textsuperscript{31} Follow up interview, March 21, 1994
Dave corroborated her statement with his statement about the interdisciplinary project.

I did not even give grades on the packet. I devoted 4 or 5 different days on the visual aides. I gave them individual extra points, because they did pretty good. Victor did not do anything. 33

Brad's comments indicated that he agreed with Dave and Sharla.

I think it was so much lip service, a lot the teachers didn't carry their part. You could tell by listening at the meeting that they didn't know what they were doing and what was really going on.34

Lack of interest and lack of commitment influenced the outcome of the interdisciplinary project and it influenced the outcome of the interdisciplinary team. In the words of Brad

32 Final interview, June 1, 1994
33 Final interview, May 31, 1994
It was doomed from the start, no one wanted to commit to the time needed for meeting, no one wanted to be in the program. I'm not happy with the way it went this year. Many thought it was a childish program that should never have been put into place in the high school. I felt like the sole survivor from last year, and I got tired of trying to make them see the positive side. So, I gave up too, I couldn't carry it myself, without any commitment or interest from the other teachers.35

Summary of Teacher Commitment and Interest
Data revealed that Brad was the member of the team who appeared to have interest and commitment to the program. Comments from the teachers indicated that three of the teachers, Dave, Brad, and Linda were interested at the beginning of the year, since they were the members that had agreed to be on the interdisciplinary team. However, Dave and Linda lost interest more quickly than Brad, who persisted for a

34 Follow up interview, April 4, 1994
35 Final interview, June 1, 1994
short time in trying to interest his fellow team members in meeting more often.

During the initial interview with Brad, he discussed the students that had been in his class during the pilot year of the interdisciplinary teaming program. He discussed the discipline problems that he and his fellow team members had experienced. His comments follow:

They come by to see me all the time. Arlene [student in the program during the pilot year], do you remember how bad she was? We didn't think she would make it through the year without dropping out [of school]. Well, here she is, involved in the leadership program, joining clubs. And you know, they all hated each other last year. But they all run together all the time, this year. They really bonded.... Just seeing all of this is worth the frustrations that go on as you are teaching them. It could have been a great program this year.36

Brad continued to express regret and sadness that he was the "sole survivor" of his team. As he spoke

36 Initial interview, January 14, 1994
of his former students, he became emotional and upset that he could not convince his current team members that the results were worth the extra time and effort spent planning and meeting.

However, the actions of the teachers who had no desire to participate in the program negatively influenced the other team members. Observations and interviews revealed that as the team met informally during the school day, their actions were interpreted in such a way that all the teachers, including Brad, began to expect failure from the program.

Brad indicated that the team was doomed as early as October or November because of the lack of interest and commitment of his fellow team members. At this time he, too, decided to quit trying to "make the family program" succeed.

Lack of interest by the teachers on the interdisciplinary team led to lack of commitment. Appointed membership on the team encouraged feelings of resentment by teachers who had been appointed to the interdisciplinary team.

**Theme Three: Student Discipline**

As I reviewed the data, one topic of discussion that occurred numerous times during each interview was

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37 Initial interview, January 14, 1994
The teachers indicated that they thought student discipline and student behavior were much worse in the family group than in any of the other classes they taught. Linda's comments support this.

I had them sixth hour and they were animals. Because they all had the same fifth period class, they all went to lunch together and then they all came to my class. I think the discipline was worse. I had many more discipline referrals. The first week of school I would have three students in my class when the tardy bell rang. There was a lot ditching too, they just wouldn't come back.\footnote{Final interview, May 31, 1994}

Sharla had the students first hour and she did not have as much trouble with the students as the other teachers as she indicated in the following:

I have them first hour, so they are really pretty good for me. But you know, all first hour classes are better than other classes. They are still half asleep through the class.\footnote{Initial interview, January 5, 1994}
Although the students were calm during first period, any trouble that began during that period or between classes, built as the day progressed. Dave gave the following suggestion as the reason the discipline was so poor in the later classes.

The number one liability is that the kids do not want to be together four periods. And if they don't want to be together, then minor problems become magnified, day after day and week after week. That is exactly what happens.40

Linda supported Dave's suggestion. She and the other teachers felt that support from the deans41 was poor. Linda told of the problems they had.

You know what a poor excuse for a dean Sue is. Well, she is our designated dean. She might handle the family fairly well, but she is so bad with the rest of our classes that we all hate to send anyone to her. Besides so many of the

40 Initial interview, January 11, 1994

41 The deans are the administrators in charge of handling discipline in this school. There are two deans at Raider High School. However, all the referrals from the family group were handled by one dean.
problems, well you hate to send the kids to the deans. One big problem was the bickering, that class went crazy, they acted like they were brothers and sisters. I couldn't talk to one student without another student jumping in to put their two cents worth in.42

Not all the problems involved bickering among the students. Often the problems developed became more serious. Dave relates one such incident.

Ninety percent of the, so-called problems that I ever encounter in that class, I encounter because of the fact that it started the second period or third period or first period, and then they come to me fourth. So the day I was gone and there was a fight, it just went on for three or four periods and it just escalated and it boiled over in fifth period and they just went at it. Every passing period they had been needling each other and it just boiled over. And they were suspended for a week.43

42 Final interview, May 31, 1994
43 Follow up interview, March 21, 1994
Poor student behavior among these students caused problems for the teachers because this lack of discipline required the teachers to try to find ways to deal with this problem every day. Dave relates the cost to him in the following:

The discipline in that class, well let's say I put more personal and physical energy into that class, trying to do something with them, than with other classes. Therefore it is a drain on my energy. And I know the other teachers are the same way. It is such an energy drain.\textsuperscript{44}

One of the most impressive demonstrations of how strongly the teachers felt about the poor discipline was during my observations of the interdisciplinary project workshop. They sat at the table for two hours and discussed the discipline of the students. They were all in agreement that the discipline was worse in this class than any other class they taught. Many teachers who had taught for several years commented that the discipline was worse in the family group than any class they had ever taught.

During the team meetings I attended, the primary topic of conversation was discipline of the students.

\textsuperscript{44} Follow up interview, March 21, 1994
They discussed both the group as a whole and individual students. They always discussed the poor discipline in some way. It was frequently the first thing they discussed in the interviews. Dave began his first interview with these words.

The discipline is so gosh-danged awful. You know, it gets to the point that you simply don't know what to do with them. All they do is bicker and fight. It makes me hate the family and makes me hate the program.45

Summary of Discipline of Students

The poor discipline in the family classes affected the teachers as a team. During team meetings, staff development, and interviews the first topic that was discussed was the poor discipline of the students, how much the students hated being in the same classes together, and how much the students began to dislike each other as the year progressed.

This constant attention to discipline decreased the time the teachers spent on more positive aspects of interdisciplinary teaming such as planning integrated lessons and projects. Many of them could not see anything positive in interdisciplinary teaming

45 Initial interview, January 11, 1994
because of the poor discipline of the classes. During the final observation on the last day of school, two team teachers were discussing the family group, and as usual, they began to discuss how poorly the students behaved in class. During a lull in the conversation, I asked them if they could identify any positives about the program. Before I had completed my sentence, one of the teachers began to walk away. I asked why he was walking away. His reply was, "If we are talking about positives about the program, I'm through, cause I don't see any." He laughed and walked back to the group. However, this indicates how strongly the student discipline influenced the teachers' attitudes about interdisciplinary teaming.

The theme of student discipline is an indicator of the knowledge the teachers constructed about the interdisciplinary team as a result of social informal mentoring. The poor behavior of the students and the discipline problems that arose as a result of this behavior caused the teachers to develop antipathy to the concept of interdisciplinary teaming. Yet, as they discussed the student behavior and possible means of disciplining these students, they learned classroom management strategies that otherwise would not have been shared. However, they seemed unaware that discussing the behavior of the students and finding
methods of dealing with this behavior increased their knowledge about classroom management.

They met as a team with the dean to discuss methods of handling the discipline problems. As indicated earlier, they were not pleased with results from the dean. Therefore, they had to develop strategies of their own. Observations indicated that on days when the behavior was especially poor, the teachers met in the halls and visited each other in classrooms to discuss discipline strategies for the next day.

These informal meetings and discussions (social informal mentoring) allowed the teachers to construct knowledge. They developed an aversion for the concept of interdisciplinary teaming. However, they gained valuable knowledge about classroom management.

Theme Four: Administrative Support

The principal, Ms. White, was the promoter of the interdisciplinary program. It was at her insistence that the program be continued during the school year, 1993-1994. She had originally had other ideas about the program as Dave revealed in the following:

You know we were all a little leery of continuing the program this year. But Ann [Ms. White] insisted. You know she really wanted it to
become an Accelerated Schools thing, cause she brought in that professor from UNLV.... Anyway since she couldn't get that to fly, she decided to keep it like it was [he laughs] or close to what it was anyway.46

Brad, felt that the support Ms. White had shown had really helped him to be a better teacher during the initial year of the program.

My first two years ... I really didn't have too much of an idea of what I was doing, because I was a new teacher. Then Ann [Ms. White] came in and got me involved in different things. And if you are making her look good, that's okay.47

Although Ms. White wanted the program to continue, she did not prepare the new teachers in the program for interdisciplinary teaching, as we have discussed earlier. Her support in the program began to wane as the year progressed. She accepted the position as a principal of a new high school and left RHS in December to take over her new responsibilities.

46 Initial interview, January 11, 1994
47 Initial interview, January 14, 1994
The influence this move had on the teachers became evident as I listened to Brad's comments on her move.

Well, after she knew she was going to make the move to Stanton [the new high school] it became pretty clear that her priorities were elsewhere. And then you know that she is taking Joan [the assistant principal over the interdisciplinary team]. So that leaves us without anyone to even check up on us.  

When Ms. White decided to move from RHS, she was allowed to take two administrators with her. One of those administrators was Joan Dunn, the administrator who was in charge of the interdisciplinary team. This change in the administration also had an impact on the team and the team's desire to work together. Brad's comments summarize what happened to the team.

It was no longer a priority. And [Ms. White] didn't push it because she had other things to

48 Initial interview, January 14, 1994
do. When I tried to get people together at the beginning of the year and they didn't want to, I just decided that if they didn't want to, I thought, okay, I'm not going to push it.... If you leave it up to the teachers, well, everyone has more than enough to keep them busy. To do this [being a member of an interdisciplinary team] you are going to go a little extra mile and a lot of people won't do that.50

When the new principal, Ms. Lake, began working in January, it became obvious that she had little interest in the interdisciplinary program. This lack of support negatively influenced the interdisciplinary team and the morale of the team. The following are comments from Brad:

There was no one looking from the top, because Ann [Ms. White] had other things to do, and the next one [speaking of Ms. Lake] comes in and says, "I think that this is a childish idea." What are we supposed to think? As far as morale goes, what do you think? It fell to the bottom.

49 Pseudonym for vice-principle at RHS
50 Initial interview, January 14, 1994
I was really surprised at some of the teachers' comments, but it takes all kinds I guess.\textsuperscript{51}

Linda's reactions to the new administration follow:

She [Ms. Lake] didn't even meet with us until the first week in March. I guess she had too much to do, or too little support. She called a meeting of the family last week, and we all decided to can [discontinue] the program. She wasn't really in favor of it herself, she said she didn't believe it had a place at high school. The teachers were pretty vocal. They began to talk about the kids, how bad the program was, everything. They all declared they hated it. It was a pretty much unanimous thing to can the program for next year.\textsuperscript{52}

In spite of the lack of support by the current administration, the program continued to limp along. During March the interdisciplinary team attended two staff development meetings to help them plan for their

\textsuperscript{51} Follow up interview, April 4, 1994
first interdisciplinary project. The decision had already been made to discontinue the interdisciplinary teaming program for the coming year. Therefore, the teachers had little support in learning how to develop an interdisciplinary project. All of them were aware that the interdisciplinary team would not be continued the following school year, many of them indicated that the interdisciplinary project seemed to be an exercise in futility. Linda expressed the following:

The kids thought it was joke. But I guess this was just a reflection of what the teachers thought. Some of them didn't do anything, so why should the kids take it seriously. For that matter, why should we take it seriously, we will never do it again. Just something to do we will never do again.\textsuperscript{53}

The teachers spent the first two hours of the workshop for planning an interdisciplinary project on complaining and discussing the students, the lack of discipline, and how much they disliked the program. After they had expressed their opinions, they began to work and appeared to be enthusiastic during the latter

\textsuperscript{52} Follow up interview, March 31, 1994

\textsuperscript{53} Final interview, May 31, 1994
part of the first workshop. However, planning did not progress as it should have as much time was spent discussing discipline and the general dislike of the program. The time spent discussing the discipline made the completion of planning impossible. Therefore, the teachers made the decision to meet again.

I inquired about my attendance at the workshop, indicating that perhaps I should discuss this with Ms. Lake. Dave, who was the team leader, laughed and gave this reply.

I don't see any reason why you should. This is not her baby. She doesn't care what happens. She doesn't even care if we attend. Ann [Ms. White] had all of this set up last fall before she left. Ms. Lake would just as soon it wasn't happening, because she doesn't like the program. She won't stop it because it is forward motion and it might make her look bad.54

These attitudes and opinions were shared almost universally by the teachers on the team. Ms. Lake gave little support to the program and the teachers inferred this to mean she had little interest in them as teachers. They criticized everything about her,

54 Follow up interview, March 10, 1994
from the way she walked down the hall to the way she dressed. The following describes how Sharla felt about the new principal.

You never know how good someone is until they leave. Let me tell you, Ann [Ms. White] left a big hole. Ms. Lake walks around the halls like she is afraid that she is going to get jumped. Talk about lack of authority!55

Brad was even more scathing.

She has no idea of how to build the morale of teachers. I don't care how much she disliked the program, calling it childish was very unprofessional. I don't like the woman, and I can hardly wait to get out of here.56

Dave's comments follow:

She dresses like she is going on a hike, she comes to school in the gosh-darndest clothes. You would think she found them at a garage sale.57

55 Follow up interview, March 5, 1994
56 Final interview, June 1, 1994
Linda was a little less blunt with her comments.

Well, she was willing to listen to the teachers in our meeting. Of course, if we had wanted to keep the interdisciplinary program going, well, I don't know what she would have done. Because it was obvious that she [emphasis added] didn't like the program, and we all agreed with her. I don't know what the result would have been if we hadn't agreed. She doesn't appear to be a very strong leader.58

This attitude about Ms. Lake was not universal across the staff. During my observations at the site, I talked with and observed teachers who were in the program and I talked with and observed teachers who were not in the program, many of whom I knew personally as colleagues and friends. The teachers who were not in the family program were much kinder in their comments about the new principal.

The consensus among these teachers was that Ms. Lake appeared to be giving them breathing space. One department chair said "Ms. Lake didn't want to come in

57 Final interview, May 31, 1994
58 Final interview, May 31, 1994
like a new broom, sweeping everything clean. Given
time I think she will be a good principal." Most
teachers not on the team were willing to give her more
time before passing judgment on whether she was a
"good" or "bad" principal. Only the members of the
interdisciplinary team developed such strong distaste
or dislike for the new principal. Such strong
feelings encouraged them to seek teaching positions
elsewhere.

Three of the four teachers who were interviewed
for the study accepted teaching positions from Ms.
White. They will teach at the new high school under
her administration. The other teacher who was
interviewed for the study, has interviewed at a
different high school in the district, but is unsure
at this time whether she will get the position.

All the teachers who participated in the research
study were vehement in their determination never to be
a part of an interdisciplinary team again. During the
final interview, I asked each of the teachers if they
would be willing to work on an interdisciplinary team
at their new high schools. Their answers were all the
same. The following is Dave's reply:

I will say no [he shouted the word] under no
circumstances. And then I will say a strong
expletive, one you wouldn't want to hear. Or I
might say it first, *before* [emphasis added] I say no.\textsuperscript{59}

**Summary of Administrative Support**

Observations and interviews reveal that lack of administrative support influenced the team members. Three of the four teachers are leaving the school to teach elsewhere the following year, and the fourth is seeking a teaching position elsewhere.\textsuperscript{60} All four of these teachers have chosen to leave the school. They all indicated that one of the several reasons for leaving was a distaste for working under the present administration. They were all adamant that they had no desire to teach on an interdisciplinary team again.

Although the members of the team never formed a cohesive unit, they unconsciously developed loyalty to the team. This became evident as they discussed the new administration. Although Ms. Lake expressed the same opinion about the interdisciplinary teaming program as the team members, the team interpreted her actions in such a way that they developed doubt

\textsuperscript{59} Final interview, May 31, 1994

\textsuperscript{60} It is the policy of this school district to allow teachers to seek other teaching positions within the school district.
(common meaning) about her abilities as an administrator.

Themes Five and Six: Isolation and Collegiality

The themes of isolation and collegiality are discussed together. Interaction among the team teachers caused collegiality to increase and feelings of isolation to decrease.

The departmentalized structure of RHS does not promote interaction among the teachers. Dave commented on his difficulty interacting with teachers in other departments.

In a school like this, it is crazy. When I first came here to take over May's place when she had her baby, I never went to the science department. That is all I had done all my life, was science. Every day or so I would think, I will go over there and check it out, but I never did.

Linda supported Dave's idea that it was difficult to get to know people outside the department by her comments.

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61 Dave was a long term substitute for May when he first moved to the city.

62 Final interview, May 31, 1994
You know before this year I bet I didn't know more than three or four teachers who were not math teachers.

Sharla stated that she knew several teachers outside the English department. Her isolation appeared to be more from the teachers within the department of which she was a member. She indicated that the lack of collegiality and camaraderie in the English department was one of the reasons she had chosen to leave RHS.

The English department doesn't [get along]. That is one reason I would like to leave RHS. There are people in the English department that cause more trouble than you would believe possible. I don't deal well with that. The one person that is causing problems with me will never leave RHS, because no one would hire her. And I don't know if I can stand another year with her.

This lack of interaction with her department led Sharla to seek associations outside the department.
Well, sometimes I eat in the mailroom with the counselors and secretaries, since I don't eat in the workroom. I chaperoned dances and football games and I see teachers at places like that. But you see the same people. I do see the other English teachers occasionally, but very seldom.

Brad had feelings of isolation when he first began to teach.

You know when I first began teaching, I was in the pit.\textsuperscript{63} I didn't see anyone except the coaches after school. I didn't know what I was doing, I wasn't happy with how I was teaching, but there wasn't anyone to help me.

Brad was the only teacher interviewed who intimated the interdisciplinary team caused isolation from teachers who were not members of the team.

Those outside the family. They are kind of jealous. They feel you are being treated special. They\textsuperscript{64} look at you, even if it is not

\textsuperscript{63} This was a large lecture hall that is located away from the other classrooms.

\textsuperscript{64} Brad was referring to the coaches he works with after school when he says "they."
true, that you are considered to be a step above the other teachers, by the administration anyway, because you are doing something special, and you were picked to do something special. They joke around but I feel very uncomfortable, and try to avoid that kind of thing, even if it means avoiding them.65

Brad also felt some alienation from the other science teachers.

I kind of feel that every once in a while from the science department, like you know, that they don't want to have much to do with you. Because, well you are in that family thing and you did these workshops on alternative assessment and reading strategies. I took a lot of kidding about that. ... Dave said he didn't have the same problem, but after all he is the D. C.66 and he works a little closer with them. They have [emphasis added] to be a little more careful with him.67

65 Follow up interview, April 4, 1994
66 department chair
All the teachers on the team, including Brad, stated that they felt they knew more of the teachers than they had at the beginning of the year. Sharla stated:

I would never have gotten to know Brad, and he is such a nice man, and Linda or Dave. I feel like I really know them well.68

The teachers did not get to know each other immediately. Because of the structure of the program, they had difficulty learning which teachers shared the same students. Brad comments were:

Throw in the fact that when we started out we really didn't have a clear idea who was on the same team, because of the switch from last year. There were so many circumstances that wouldn't let us bring it into the second year, because there were so many people who left and those of us who were here, we weren't really clear who was on whose team.69

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67 Follow up interview, April 4, 1994
68 Follow up interview, March 5, 1994
Although the members of the team had a difficult time learning who was on what team, they did occasionally interact as a team. The result of this interaction was greater collegiality than they had experienced in the past. Dave commented on this.

You know we didn't work as a team, but we did work in pairs. Sharla and I did this thing with the global lab. We planned a unit together and everything. We would never have done that had we not been on the team together.70

Sharla also commented on the collegial activity that developed.

Dave and I have worked together, I teach ethics and morals, and he talks about that in genetics. We share information because we have mutual kids. And Victor with discussing persuasion, but he never really wanted to work together, all he did was talk about it.71

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69 Initial interview, January 14, 1994
70 Initial interview, January 11, 1994
The teachers also were brought together as a team by the discipline of the students in the family. The following are comments from Sharla.

We meet more with the discipline thing. He [Victor] really just vents. He knows that we have the same students, and he needs an outlet, so he comes to my room and just talks. I usually just push back, put my feet up and listen. It really helps to get it off your chest.72

Linda also indicated that the topic of discipline was what brought the teachers together.

You know I often meet the other family members in the copy room, when we are running off papers. Because we are teachers in the family program and share the same students, we discuss the discipline thing. Brad has really helped. He said there were similar problems last year. But that in the long run the program helped the kids. It really helps you get a different perspective. We know we are not alone in this thing.73

71 Follow up interview, March 5, 1994

72 Initial interview, January 5, 1994
During my many observations at RHS, I became aware of the difficulties the school plant caused the interdisciplinary team members. The four teachers interviewed teach in three different pods of the building. The school is built with circular pods extending from the administrative offices. These pods caused isolation as they separate the classrooms from each other by long halls. If any collegiality or any interaction among the teachers was going to exist, the teachers had to make a deliberate effort to find the other team teachers. I observed Sharla, the English teacher on the team, in the math hall several times. She would seek out the math teachers because she used the computer in the math office. She felt this was one advantage of knowing other teachers in the building.

You know, I discovered that the math teachers didn't mind me using the computer in their office. Not just the team teachers, but all of the math teachers. They are really a great bunch of people. They all get along well together and
eat lunch together. If I had second lunch\textsuperscript{74}, there is no doubt that I would eat lunch with them.\textsuperscript{75}

The interviews and observations revealed that becoming a member of the interdisciplinary team changed the members' attitudes about teacher collegiality and teacher interaction. They no longer wanted to be an isolated entity or an isolated department. It was not uncommon to see Dave, Brad, Sharla and Linda conversing with other teachers in the halls after school. These teachers were not always members of the interdisciplinary team. Linda's comments were:

I didn't really know anyone, but since I have worked on this team and been involved in the learning strategies and alternative assessment, I have discovered how valuable it is to know other teachers in the building. I encouraged, no, I insisted that Terri [student teacher] visit other

\textsuperscript{73} Follow up interview, March 31, 1994

\textsuperscript{74} There are two lunch periods at RHS. The English and social studies had first lunch, the math and science teachers had second lunch. The lunch period was determined by the location of the classrooms.

\textsuperscript{75} Final interview, June 6, 1994
classrooms, and not just math classrooms. There are a lot things that she can learn from other teachers in other departments.\textsuperscript{76}

Sharla intimated that she was leaving RHS because of the difficulties with her department. The collegial relations that she built with the team made her want to work more closely with other teachers in her department. She often remarked on the closeness of the math staff. Indicating that she felt "cheated that we don't work together like the math department does."\textsuperscript{77} Linda also indicated that working on the interdisciplinary team had encouraged her to work more closely with the other people in her department. Working closely with other teachers in her department had a domino affect. The teachers that Linda worked with, began to work and plan with other teachers in the department.

Betty [math teacher] and I planned all of our units in PreAlgebra together. All of the other PreAlgebra teachers joined us. Betty decided to get James [math teacher] to work with her on Algebra II. We all began to work closer

\textsuperscript{76} Initial interview, January 6, 1994

\textsuperscript{77} Follow up interview, March 5, 1994
together. We always eat together ... but now we work closer together.\textsuperscript{78}

\textbf{Summary of Collegiality and Isolation}

The teachers on the interdisciplinary team met in formal team meetings infrequently. At their meetings, they always discussed discipline of the students and these discussions enabled them to feel less isolated as they dealt with their problems.

They met more often informally in the halls, copy room, and office to discuss the student discipline. The student behavior and student discipline had twofold results. They caused the team teachers to develop an aversion toward interdisciplinary teaming and it caused the teachers to develop greater collegiality.

When the teachers met informally in the halls, copy room, and classrooms to discuss the student behavior, they developed professional and personal relationships. They developed friendships and bonds that would not have developed if they had not been members of the team. One of the English teachers withdrew from the team soon after the second semester began. She had complications during her pregnancy that led to the premature birth and subsequent death.

\textsuperscript{78} Final interview, May 31, 1994
of her baby. All the teachers who participated in the study casually mentioned her at least once during the second interview, expressing sadness over her loss. Linda said, "She is such a sweet girl, she has taught here as long as I have, and I never knew her until this year. She really wanted that baby." The team members visited Vicki\(^79\) in the hospital, as well as sending flowers and cards. Sharla mentioned this casually then said, "She was special because she was one of us."

Their antagonism toward the new administrator as well as the adversities they felt they endured because of the poor behavior of the students helped them develop closer bonds of collegiality. They met most often to discuss problems, but the discussion of problems encouraged greater collegiality. I observed them in the hallway as they would leave shaking their heads saying, "At least I'm not alone!" Isolation decreased and collegiality increased as a result of these informal meetings.

\(^{79}\) Vicki was an English teacher that withdrew from the program. She was not replaced, but because of her illness she did not participate in the interdisciplinary project that was developed in March. The social studies teacher taught her portion of the project. She was not a participant in the study, but she was one of the teachers who had common students with the other teachers who did participate in the study.
The few times they met and discussed academic concerns led them to seek closer collegial relations with other teachers. They discussed methods of using vocabulary in their classrooms to make connections. They did not develop the vocabulary project, but they indicated that they were more conscious of the vocabulary they used in their classrooms. They also paired up to work together on different projects. An example is the global lab project planned by Dave and Sharla.

The small amount of planning the teachers engaged in as a team inspired one of the teachers, Linda, to seek closer collegial relations with other teachers in the math department. Interdisciplinary teaming encouraged greater collegiality with other teachers who were not on the team.

**Summary of Themes**

The six themes acted much as a whirlpool. The center of the whirlpool was the lack of administrative support. As the eddies moved out they began to encompass the other themes. The lack of preparation influenced their support and commitment. Since they lacked interest and commitment, they seldom met. Therefore, the collaboration that frequently results from interdisciplinary teaming was hindered.
They had as few as six meetings during the entire school year. Had they been prepared to be teachers on an interdisciplinary team, they all would have been aware that meeting as infrequently as six times a year was inadequate time for planning and discussing team concerns.

The discipline of the students influenced the collegiality of the teachers. They began to seek each other out when difficulties arose among the students. Their meetings were not always planned, but when they did meet, they discussed the discipline of the students in the family group and were often reassured by the discovery that others were having similar discipline problems.

Despite the dislike of interdisciplinary teaming the teachers developed, becoming members of the interdisciplinary team positively influenced the teachers. The teachers felt less isolated and were willing, even eager, to seek out the team members and other teachers for discussions about academic concerns.
CHAPTER FIVE
SUMMARY, WORKING HYPOTHESES, AND IMPLICATIONS

Introduction

This exploratory study examined the influences of interdisciplinary teaming on teachers in an urban high school. The study specifically explored the teachers' feelings of isolation and collegiality that occurred through the influences of interdisciplinary teaming. The study further explored the knowledge and meanings the teachers constructed about interdisciplinary teaming developed as they interacted with team members, administration, students and other school personnel.

A summary of the findings from the study follows. The working hypotheses (Lincoln & Guba, 1985) that emerged from these findings are then discussed. Finally, implications for interdisciplinary teaming, teacher collegiality and isolation, and further research are drawn.
Summary of Findings

Teacher's preparation for interdisciplinary teaming. There was a relationship between the amount and type of preparation for interdisciplinary teaming and the commitment and interest of the teachers on the interdisciplinary team. The kinds of staff development the teachers received influenced their discussions and their desires to work as an interdisciplinary team. The relationship between staff development and teacher commitment is reported by Peters (1992; also see Lear, 1992; MacIver, 1990). In this study this relationship was found to indicate the amount and type of staff development caused the teachers to lose interest in interdisciplinary teaming.

Construction of knowledge about interdisciplinary teaming through natural mentoring. The teachers reported they did not receive staff development that was directly related to interdisciplinary teaming. Therefore, they had little theoretical and practical knowledge about interdisciplinary teaming as they began the program. Much of the knowledge about interdisciplinary teaming was constructed through the natural mentoring process which occurred as they interacted with fellow team members, students, and administration.

Collaborative mentoring occurs when teachers demonstrate dispositions to learn from each other and
share knowledge (Powell & Mills, 1994). The teachers demonstrated this willingness to learn from each other during the planning of the interdisciplinary project. As the teachers planned the interdisciplinary project they shared and discussed methods of presenting the final product before they decided which method they would use. They also demonstrated this willingness to learn from each other as they discussed student discipline. During these discussions they shared different classroom management strategies and collaborative mentoring occurred.

Clerical mentoring involves sharing procedural knowledge, planning lessons, coordinating class projects, and the subtle information that is exchanged among the teachers (Powell & Mills, 1994). The teachers coordinated the interdisciplinary project, developed a time line and discussed how the project was to be graded. As they coordinated the project and developed a time line they exchanged information about the procedures in their classrooms and their methods of recording and averaging grades. The teachers were involved in clerical mentoring.

Social informal mentoring (Powell & Mills, 1994) was the most influential method of developing personal practical knowledge as a result of interacting with their fellow team members. The teachers met infrequently in formal team meetings. However, they
met informally more often. During these informal meetings they always discussed student behavior and student discipline and occasionally they discussed student achievement. During these informal short meetings they exchanged ideas and knowledge about classroom management strategies. This social informal mentoring was a powerful tool to help them manage the frustrations of their unruly students.

**Development of personal meaning about interdisciplinary teaming.** The teachers' personal meaning for interdisciplinary teaming was developed as a result of interaction with the team teachers, students, and administration. The team members met infrequently, the administration was not supportive, the students in the family were unruly, and the majority of team teachers were reluctant team members. The combination of these negative factors caused the team members to develop feelings of animosity toward interdisciplinary teaming. All the teachers in the study were adamantly opposed to teaching on an interdisciplinary team in the future.

However, the personal meaning the teachers developed for planning and interacting with other teachers was more positive. They desired a closer professional relationship with other teachers who were not members of the team. This attitude was developed as a result of the interdisciplinary teaming program.
In spite of their adverse reaction to interdisciplinary teaming, their interactions and their interpretations of each other's actions led them to seek greater collegiality with teachers who were not on the interdisciplinary team.

Collegiality. Collegiality increased as a result of interdisciplinary teaming. Since the teachers were members of the interdisciplinary team they were also involved in two other programs they were required to attend staff development on learning strategies and alternative assessment. This involvement enabled them to leave the isolation of their classrooms and interact with a larger group of professional peers. During the staff development workshops as well as both informal and formal meetings, teachers discussed professional and personal concerns.

As the collegiality among team teachers increased, they began to seek collegial relations with teachers who were not on the interdisciplinary team. One example is Linda planning math lessons with other math teachers. Another example is Sharla's desire to teach at a different school site so that she could work more closely with other English teachers. In both instances, the teachers sought closer collegial relationships with teachers who were not on the interdisciplinary team.
Isolation. As the collegiality increased, isolation decreased. The physical arrangement of the classrooms caused much isolation. The team teachers were physically isolated from each other as a result of the location of their classrooms. However, interdisciplinary teaming enabled them to break the physical barriers as they left their classrooms to interact during staff development workshops and in impromptu and formal meetings. The informal meetings and the discussions during those short meetings decreased the teachers' feelings of isolation. Sharing common students enabled the teachers to share common concerns. Thus, teacher isolation was decreased as a result of interdisciplinary teaming.

Working Hypotheses

From the findings of these data, a series of inductively generated working hypotheses emerged (Lincoln & Guba, 1985; Marshall & Rossman, 1989). The working hypotheses are transferable only to similar research contexts and to similar samples of participants. The working hypotheses may be useful in discussing the influences of interdisciplinary teaming on teachers in high school settings. However, the primary purpose of the hypotheses is a springboard for further study.
Hypothesis One

Staff development that is directly related to interdisciplinary teaming and is given to teachers during the early part of the school year will better serve the needs of the teachers who are members of an interdisciplinary team.

Although the teachers in the study attended staff development workshops at the beginning of the year and the staff development continued intermittently throughout the first semester, the topics discussed were not directly related to interdisciplinary teaming. The staff development for interdisciplinary teaming was held shortly before the end of the school year. At this time the teachers had already developed negative attitudes about interdisciplinary teaming and the administration had decided to discontinue the program for the next school year. Teachers viewed the staff development as unproductive and unnecessary since the school year was near the end and the program would not be continued the following year.

If the teachers had attended staff development for interdisciplinary teaming during the early part of the school year, they would have been able to use the information from the staff development during the entire year. A reasonable hypothesis is that early staff development would have better served the teachers on the interdisciplinary team.
Hypothesis Two

Administrative support of interdisciplinary teaming influences teachers' morale, commitment, and interest in the program.

This study provides evidence that lack of administrative support greatly influenced the teachers' interest and commitment to interdisciplinary teaming. The administrators' lack of interest discouraged the teachers. Teachers with and without positive expectations lost interest during the first nine weeks of the school year. All the teachers in this study sought teaching positions in other schools the following year. This suggests a deterioration of morale among the team members.

Hypothesis Three

The development of teachers' personal meaning about interdisciplinary teaming is reflected by the interactions among team teachers and the interest among teachers and the school's administration.

The data in this study revealed that the majority of the teachers were appointed to be members of the interdisciplinary team. The reluctant teachers began the school year with a dislike for interdisciplinary teaming because they had been appointed. Furthermore, this negative view had great influence on the much smaller group of teachers who voluntarily became
members of the team. The teachers who voluntarily became members of the team had entered the program with positive expectations. However, the actions of the appointed teachers along with lack of support from administration caused the teachers who had positive expectations to develop similar attitudes toward interdisciplinary teaming as those held by the appointed teachers.

**Hypothesis Four**

Interaction among high school team teachers promotes social informal mentoring, collaborative mentoring, and clerical mentoring as suggested by Powell & Mills (1994) for the middle school.

Most interaction among the team teachers was informal. The teachers met without prior arrangement in hallways, copy room, and classrooms. During these impromptu meetings, information about classroom management was shared and exchanged. This social informal mentoring occurred more frequently than other types of mentoring. However, the teachers engaged in collaborative mentoring as they worked together in pairs and as they planned the interdisciplinary project. The teachers also engaged in clerical mentoring during staff development as they developed a time line and procedures for the interdisciplinary project.
Hypothesis Five
Interdisciplinary teaming in high school decreases isolation and increases collegiality among teachers.

As members of the interdisciplinary team the teachers left the isolation of their classrooms to interact with each other. During staff development workshops they interacted with team members and with teachers from other school sites. Although the teachers met infrequently as a team, these meetings moved them farther from isolation and closer to collegial relations. The impromptu meetings among team teachers further encouraged greater collegiality as they discussed student behavior and student discipline. Furthermore, the teachers sought closer collegial relations with other teachers who were not on the team as a result of interdisciplinary teaming. As the teachers interacted, isolation decreased and collegiality increased.

Implications for Administrators
1. Challenge administrators to support interdisciplinary teaming programs that have been implemented in their schools.

The teachers reported the administrators gave little support to the interdisciplinary program. The out-going principal lost interest as her priorities
changed from her present administrative position to her new position. The in-coming principal gave limited support to a program that she had not implemented. Lack of administrative support for the interdisciplinary program encouraged lack of teacher interest and lack of teacher commitment for interdisciplinary teaming.

Peters (1989) suggests that one of the conditions that must exist for interdisciplinary teaming at high schools is involvement of the principal in the scheduling, curriculum development, and instructional processes of the interdisciplinary team. This was not the case in this project.

The lack of staff development for interdisciplinary teaming clearly influenced the teachers on the team. They were uninformed about the expectations for the team as they had no clear guidelines to follow. They met sporadically, and those meetings resulted in little, if any actual planning by the team.

If the members of the team had been prepared for interdisciplinary teaming, they would have been aware that frequent planning is important to the success of the team. Proper staff development would have better prepared them to work as a team.

This study supports the findings of Whitford & Kyle (1984) who note that lack of preparation accounts
for much confusion and dislocation. This study also supports the findings of Garner (1976), who recorded that when interdisciplinary teaming is unsuccessful, one reason may be that team members are unprepared to develop as a unit.

Clearly, staff development for interdisciplinary teaming was not a high priority for the administration. However, the administration did provide staff development on learning strategies and alternative assessment. The teachers attempted to integrate these strategies into their classrooms. This demonstrates that teachers are amenable to programs that receive administrative support.

2. Challenge administrative appointment of teachers who are reluctant to be members of an interdisciplinary team.

The teachers who were appointed to the interdisciplinary team exhibited resentment as well as lack of interest and commitment to the program. On the other hand, the teachers who had volunteered to be members of the interdisciplinary team began with a much more positive attitude about interdisciplinary teaming.

The majority of the teachers were appointed. Their lack of interest and commitment to interdisciplinary teaming quickly influenced the teachers who had higher expectations. As early as
October, the team member with the highest expectations was influenced to feel the program would fail. This indicates that teachers who are reluctant participants of an interdisciplinary team have adverse influences on other team members.

Implications for Interdisciplinary Teaming

1. Forming a team of high school teachers who share common students does not assure that interdisciplinary planning occurs. The teachers in this study were members of a team and they shared common students. However, little interdisciplinary planning occurred. The team concept encouraged pairs of teachers to work together on projects and encouraged the team members to discuss common problems, but very little planning occurred which involved all team members.

The teachers did work as a team when they planned late in the year. The team members were directed by an outside advisor who taught them how to plan as an interdisciplinary team. This was the only instance the teachers acted as a cohesive unit. Therefore, forming a team of teachers and giving them common students does not necessarily assure that teachers will perform as an interdisciplinary team. Interdisciplinary teaming at high schools involves more than a team of teachers sharing common students.
2. High school teachers should be allowed to have a common planning time to discuss common concerns and plan for interdisciplinary lessons and projects.

The high school teachers in this study did not have common preparation time. Furthermore, they did not share a common lunch period. The only time available for the team to meet was after school, evenings, or week-ends. Several of the teachers coached athletics or were advisors to high school clubs. This limited the time that was available for meetings. Since the teachers had no common preparation period, they decided to meet when the need arose. Time constraints assured that the teachers seldom met. If the teachers could have met as a team during a common preparation time, they would have been able to engage in team activities such as the discussion of common problems and integrated planning of lessons and projects. Common planning is especially needed at the high school level when teachers have other commitments such as coaching or advising school clubs.

3. Provide program suggestions for interdisciplinary teaming that involves only a small number of teachers and students if this kind of program is to be feasible at large urban high schools.
The interdisciplinary teachers in this study had no guidelines to follow. The teachers learned about interdisciplinary teaming as they interacted with each other, students, and administration. Without guidelines or administrative guidance the teachers' attempts at interdisciplinary planning failed. However, when they were given guidelines late in the year the teachers successfully planned and completed an interdisciplinary project.

Entire high schools of no more than three hundred students have successfully implemented interdisciplinary teaming according to Lear (1989). However, the practice of successfully introducing a smaller program of interdisciplinary teaming into large urban high schools where a small group of students and faculty is involved has yet to be proven.

As this was the second year for the interdisciplinary teaming program, teams with experience would have been available as valuable resources had the entire school been involved in interdisciplinary teaming both years. However, only a small portion of the large high school's student body and faculty was involved in the interdisciplinary program during the two years. Since there was only one interdisciplinary team this meant that other, more experienced interdisciplinary teams were not available as a resource for the new inexperienced team.
Therefore guidelines for small interdisciplinary teaming programs in large urban high schools should be provided so that interdisciplinary teams understand what is necessary for the program to succeed. If guidelines are provided, then perhaps a small program of interdisciplinary teaming at large urban high schools will be successful.

**Implications for Teacher Isolation**

High school teachers become more aware of the undesirable effects of isolation when the isolation is alleviated.

Most of the teachers in the study indicated they had experienced high levels of isolation prior to entering the interdisciplinary teaming program. As teachers teach in isolated classrooms, they are denied the personal and professional benefits of interacting with their peers. As the teachers in this study indicated, many times they were unaware of being isolated, until that isolation was alleviated.

The natural mentoring that occurs when teachers interact cannot exist when teachers work in isolation. The professional growth and knowledge that is gained by natural mentoring will never be enjoyed by the isolated teachers.
Implications for Teacher Collegiality

Interaction among high school interdisciplinary team teachers foster closer collegial relations with other teachers who are not members of the interdisciplinary team.

One of the influences that the interdisciplinary teaming program had on the team teachers, was to encourage collegiality among the teachers and to encourage collegiality with other teachers who were not members of the interdisciplinary team. Collegiality was enjoyed among team members when they met to plan for the integrated project and when they paired up to integrate topics for teaching. These interactions caused the teachers to seek closer collegial relations with other teachers who were not on the team. Teachers in high schools benefit from working in collegial settings with other teachers. Although many teachers appear to be happy working in isolation, they may simply be unaware, as the teachers in this study were, of the benefits and encouragement that awaits those who seek collegial relations with their peers.

Implications for Research

Methodological Issues

Quantitative data gathered during the pilot study provided indicators that the interdisciplinary program
met the goals and expectations the administration had established. However, the qualitative data collected during the pilot study indicated that teachers involved in the interdisciplinary teaming program deemed the program unsuccessful. An indicator of this assessment lies with the retention of only two teachers for the program. The teachers who were not retained voluntarily moved to other school sites or asked to be excused from the program because they thought it was unsuccessful. To further explore the influences interdisciplinary teaming had on teachers, I chose qualitative research methods. The case study and interview data gave me insight into influences interdisciplinary teaming had on the teacher participants in the study. Therefore, to explore the influences of programs on teachers, qualitative research methods are recommended.

**Peer debriefing.** Throughout the study I maintained an ongoing peer debriefing dialogue with other doctoral students. This peer debriefing helped me to gain thoughtful insights into the data. The peer debriefing was used as means of establishing credibility for the study.

**Reflective notebook.** The reflective notebook was a way of establishing internal validity, and was invaluable to me as I reviewed the notebook to
delineate findings, possible hypothesis, and implications for the study.

**Theoretical Issues**

This study was made to determine the influence of interdisciplinary teaming on teachers' feelings of collegiality and isolation, the personal meanings that the teachers in the program developed and the construction of knowledge that the teachers in the program engaged in. However, I made no attempt to compare the development of personal meaning and the construction of knowledge with other teachers who were not members of the interdisciplinary team. Nor did I attempt to compare the team teachers' feelings of collegiality and isolation with other teachers who were not members of the interdisciplinary team. Studies are needed, which will compare interdisciplinary team teachers and teachers who are not members of an interdisciplinary team.

**Student outcomes.** Since the focus of this study was on the teachers of the interdisciplinary teaming program, I did not research the influences that interdisciplinary teaming had upon the students. Interdisciplinary teaming at middle and elementary school levels decreases student misbehavior. However, in this study the teachers indicated that student behavior and student discipline was a major problem during the school year. There is much evidence that a
longitudinal study is needed to determine whether an interdisciplinary teaming program at the high school level will have positive long-lasting effects on students.

Teacher mentoring. The study explored the knowledge that the teachers constructed as they interacted with their team members. This study indicated that three kinds of mentoring occurred. Further study is needed on teacher mentoring and the possible benefits of teacher mentoring. This is especially true of the natural mentoring processes that occurred in this study. More research is needed to compare natural mentoring with formal mentoring. Research is needed to determine ways in which administrators can encourage natural mentoring in schools that do not have interdisciplinary teaming programs.

Appointment of reluctant teachers to school programs. This study touched briefly on the effects of appointing reluctant teachers to the interdisciplinary teaming program and showed that teachers who were reluctant members of the interdisciplinary team began the year with antipathy to interdisciplinary teaming. Further research is indicated in this area. How do teachers respond when they are appointed, yet are reluctant to participate in programs?
Conclusions

There has been a resurgence of interdisciplinary teaming in schools during the 1980s. Most of these programs have been implemented at middle school and elementary school levels. However, educators are now considering ways to foster the transition for middle schools to large high schools.

Moving interdisciplinary teaming into high schools may be one answer. However, the introduction of interdisciplinary teaming at the high school level brings with it questions such as (1) the influence that interdisciplinary teaming may have on teachers at the high school level, (2) the successful transitions of students into large urban high schools, (3) the kind of staff development that is needed, and (4) the feasibility of interdisciplinary teaming at high schools. This study attempted to address some of these questions.

At the high school in this study the program was called interdisciplinary teaming. Yet, the study revealed little interdisciplinary planning was involved. Although the teachers seldom met in prearranged meetings or worked together as a team, they were influenced by the interdisciplinary teaming program.

The teachers developed a dislike for interdisciplinary teaming and were unaware of the
program's positive influence on them. As a result of becoming members of the interdisciplinary team, the isolation of the teachers was alleviated and they sought closer collegial relations with team members as well as with other teachers who were not members of the interdisciplinary team. They also constructed knowledge from the natural mentoring process as a result of interaction with team teachers.

However, since limited interdisciplinary team planning occurred, further research is needed before valid claims can be made regarding the construction of knowledge and the increased collegiality that results from the introduction of interdisciplinary teaming at high schools.

Finally, administrative support is a necessary factor for the successful implementation of interdisciplinary teaming into high schools. Some of the administrative support should be in the form of sufficient and timely staff development for interdisciplinary teaming. Without administrative support as well as sufficient and timely preparation, the teachers must develop such strategies as they deem necessary to work as an interdisciplinary team. Administrative guidance and support are extremely important for the success of any interdisciplinary team.
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Appendix A

Interview Guide
Interview Guide

Name:

Position:

1. How many years have you taught?
   Probes:
   High school?
   Junior High?
   What prior experience of interdisciplinary teaming do you have?

2. How were you selected to be a member of this disciplinary team?
   Probes:
   Were all the teachers selected in the same way?

3. When do you see the other teachers on the disciplinary team?
   Probes:
   Do you eat lunch together?
   Do you spend time other than team meetings together?
   Do you seek them out when problems arise with the family?

4. How well do you know the teachers in the school?
   Probes:
   your department?
   the interdisciplinary team?

5. How well have you known teachers in other schools where you have worked?
   Probes:
   your department?
6. What does the interdisciplinary team mean to you?
   Probes:
   Other teachers?
   Students?
   Counselors?
   Administrators?
   Deans?

7. Have your teaching habits changed as a result of the teaming process?
   Probes:
   How?
   What was the influence?

8. Have you ever observed your team teachers while they teach?
   Probes
   If so
   Why?
   whose idea?

9. Do you have a team leader?
   Probes
   If you have one
   how selected?
   good choice?

10. How often do you meet as a team?

11. Do you plan lessons with the other team teachers?

12. Do you have a common planning period?

13. Do you have common discipline policies?
   Probes
different from the school's discipline policy?
are they successful?

14. How have changes in the administration effected the team?

Probes
How often did you meet with administration?
What did you discuss?
Appendix B
Consent Form
CASE STUDY CONSENT FORM

Investigator: Amy Gaskins
Durango High School
Home: 457-3228 Work: 799-5850 ext. 824

The purposes of this project are:
1. to collect data for dissertation
2. to learn how Accelerated Schools principles influence teachers and school climate of the "Family"

I,___________________________________________________, understand that

1. The information obtained during this project will be used to write a case study which may be read by the respondents, the members of the doctoral committee.
2. Real names will not be used during data collection or in the written case study.
3. I am entitled to review the case study before the final draft is written and negotiate changes with the investigator.
4. I may withdraw from this study at any time by notifying the investigator in writing and the data will not be used in the study.

I agree to participate in this case study project according to the preceding terms.

Respondent:______________________________________________

I (do/do not) grant permission to be quoted directly in the case study report.

Respondent:______________________________________________

Date: ____________________________________________________

Any concerns or questions are to be directed to Amy Gaskins or Dr. Jane McCarthy.
Appendix C
Figure 1

Accelerated Schools Model

Curriculum
- language across subjects
- higher order skills sources
- related to experience
- common curricular objectives
- enriched approach—interdisciplinary/thematic
- related to experience

Instruction
- active learning
- primary
- projects
- peer tutoring
- cooperative learning
- educational technology
- school-based assessment grouping
- affective issues

ACCELERATION

Organization
- collaborative decision-making
- parents in partnership
- flexible scheduling
- faculty committees for inquiry
- principal as facilitator
- community resources

Decision-making with Responsibility

Unity of Purpose

Building on Strengths

From Accelerated Schools Project, Stanford University, March 1990.
Appendix D
Accelerated Schools Movement

The Accelerated Schools movement is a process implemented to address the needs of the disadvantaged youths directly, rather than assuming that raising general standards will meet the needs of all students (Levin, 1987). Current reforms raise standards at the secondary level, but do not provide strategies or resources to help disadvantaged youths meet these standards (Levin, 1987; Tanner, 1989). The Accelerated Schools movement is a comprehensive approach to accelerate the learning of the at risk students so that "they are able to perform at grade level by the end of elementary school in order to take advantage of mainstream secondary school instruction" (Davidson, 1992, p. 68). Accelerated Schools provide a vehicle to accelerate learning rather than remediate learning (McCarthy, et al, 1991; Levin, 1987).

Guiding Principles of Accelerated Schools

Accelerated Schools have three guiding principles—(1) unity of purpose, (2) empowerment coupled with responsibility, and (3) building on strengths (Levin, 1987a, b, 1988a, b). The first
principle refers to developing a vision that meets the agreement of teachers, students, and parents so that all will be focused on a common goal (Levin, 1988a). This is an important part of the Accelerated School movement and serves as a unifying framework for all organizational, curricular, and instructional endeavors. This contrasts the disjointed planning and implementation of reforms or educational planning where members of the school community have different educational goals (Davidson, 1992).

The second principle, empowerment coupled with responsibility, refers to empowerment of the participants to make important decisions both in the home and at the school level so that the education of the student is improved (Levin, 1988a). Empowerment and responsibility will break the present stalemate in which teachers, administrators, parents, and students tend to blame each other for the poor educational outcomes of students (Davidson, 1992). Thus, this principle requires that a shift be made to site-based decision making, where teachers, parents, and the administration take on new roles.

The third principle, building on strengths, refers "to utilizing all of the learning resources that students, parents, school staff, and communities can bring to the educational endeavor" (Levin, 1988a, p. 23). Therefore, education will build on strengths
rather than weaknesses of the student and the community.

Features of the Accelerated School

As Levin (1988a) describes the Accelerated Schools process, he identifies the following as prominent features of the Accelerated School:

1. School-based Governance. The teachers and other school staff share the decision making with the administrator.

2. Goals. The goals that are established by the governing body of the school must be in conjunction with the school district and school board.

3. Pupil and School Assessment. Two types of assessment are made. One is the assessment needed to evaluate the performance of the students at school entry to set a direction for meeting the overall school goal. The second assessment is a school-wide system that measures the progress of the teacher and student attendance, student participation, and parental involvement.

4. Nutrition and Health. Children's capacity to learn is influenced by their poor nutrition (Davidson, 1992). The services of the public and private social service agencies of the
community should be utilized to provide nutritional and health care should the disadvantaged students need such care.

5. Curriculum. The curriculum is heavily language-based, including mathematics and science.

6. Instructional Strategies. The instructional strategies should "reinforce the curriculum approach and build on techniques that have shown effectiveness with the disadvantaged" (Levin, 1988a, p. 29)

7. Community Resources. Urban schools do not take full advantage of the resources of the community.

8. Parental/Family Participation and Training. Parental involvement is an important feature of the Accelerated Schools, and the schools give parents many opportunities to become involved. However, since many of the children in today's society are not cared for by the parents, parental involvement will sometimes include more than the mother and/or father of the child.

9. Extended Daily Session. At the end of the normal school day, the extended-day program would provide a time for doing independent
assignments, rest period, physical activities, and the arts.

The Accelerated Schools Project is not a prescription for all schools. Each school will differ according to its needs. "No one single feature makes an accelerated program but rather a set of curricular, instructional, and organizational practices are used to create an Accelerated School" (Davidson, p. 80). The comprehensive approach of the Accelerated Schools movement for change is illustrated in Figure 1.

(insert figure 1 here)

Summary

The Accelerated Schools movement involves a restructuring process by which each school goes through a period of (1) taking stock, (2) establishing a vision, (3) identifying areas where the present conditions to do not meet the expectations set forth in the vision, (4) establishing a governance system, (5) engaging in a "collaborative inquiry process in which they a) attempt to understand the nature of their challenge area; b) search for possible solutions inside and outside the school; c) synthesize solutions; d) pilot test selected solutions; and e) evaluate the effectiveness of these solutions" (McCarthy, Hopfenberg, & Levin, 1991; Levin, 1988c, as cited in McCarthy, 1992, p. 7).
INFLUENCE OF INTERDISCIPLINARY TEAMING ON TEACHERS IN AN URBAN HIGH SCHOOL

This study explored the influence of interdisciplinary teaming on high school teachers in a southwest urban high school. The influence of interdisciplinary teaming on teachers' feelings of isolation and collegiality was examined. The construction of teachers' knowledge and development of personal meaning for interdisciplinary teaming were also studied.

Participants were four team teachers in three subject matter areas. The teaching experience of the teachers ranged from one year to thirty-two years. Two of the teachers had no prior experience teaching on an interdisciplinary team. The other two teachers had one year of experience teaching on an interdisciplinary team.

A case study method was used to examine the influence of interdisciplinary teaming on high school teachers. Formal and informal interviews were
conducted with the teachers in the study. Other sources of data were observations and collection of documents relevant to the study. Observations were conducted with the teachers as they met in informal and formal meetings as well as during staff development meetings.

Data revealed that the teachers were unprepared for interdisciplinary planning. Isolation decreased and collegiality increased as teachers interacted. The teachers constructed personal practical knowledge through three of the natural mentoring processes. The three types of mentoring were social informal mentoring, collaborative mentoring, and clerical mentoring. Implications for administrators, interdisciplinary teaming, teacher collegiality, and teacher isolation were drawn.