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A case study of teachers' collaborative deliberations toward middle school curriculum restructuring

Martin, Kaye McSpadden, Ph.D.
The Ohio State University, 1994

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A CASE STUDY OF TEACHERS' COLLABORATIVE
DELIBERATIONS TOWARD MIDDLE SCHOOL CURRICULUM
RESTRUCTURING

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree of Doctor of Philosophy in the Graduate
School of The Ohio State University

By
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*****

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To John, Doug, and Katie
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CHAPTER I

INTRODUCTION TO THE STUDY

It has been widely recognized that teachers have great influence in determining the nature of the curriculum. Teachers have long been known to shape curriculum by choosing what instructional methods would be used to interpret content to students and by creating the context in which teaching and learning would take place. In recent years, however, the literature which has defined an expanded view of teachers' roles as professional decision makers has also described a larger curriculum responsibility for teachers (Zumwalt, 1989; Carnegie Task Force, 1986; Holmes Group, 1986).

Rather than being seen merely as instruments to deliver curriculum designed by others, teachers are increasingly seen as active participants in establishing curriculum purposes and goals, developing curriculum documents, and carrying out and evaluating curriculum activities in the classroom. In this view the teacher is seen as one who makes decisions based on a body of professional knowledge as it is adapted to a particular teaching situation, to particular students, and to the teachers' own insights, self knowledge, and
personal values (Reynolds, 1989). Because of teachers' fundamental involvement in curriculum development, any effort toward curriculum reform must take into account the knowledge, skills, and dispositions of teachers.

Nowhere are teachers' contributions to curriculum decision-making more crucial than at the middle school level. More than 30 years after middle schools began to appear, the curriculum has changed very little from that of the junior high schools they replaced (Beane, 1990; Lipsitz, 1984; Toepfer, 1992). At the same time middle schools are the focus of renewed attention marked by a widespread concern that current practices are not meeting the needs of today's students. Educators are trying to make middle school teaching more consistent with the nature and needs of early adolescents.

The attention of middle school educators has largely been focused on implementing instructional and environmental changes that would facilitate young adolescent development. Much less attention has been given to establishing what the content of middle school curriculum should be. Neither have the many recent national education reform initiatives been helpful in this regard. Few have addressed the concerns of middle school as a discrete level, and those that have done so, such as the Carnegie Council on Adolescent Development (1989), have dealt only briefly with outlining an approach toward curriculum. In the absence of curriculum leadership, teachers have, by default, been planning curriculum to respond to their perceptions of the failure of existing curriculum to meet the needs of middle school students (Toepfer,
Teachers may create curriculum directly by implementing new programs or adapting old ones or they may do it indirectly by resisting or ignoring imposed curriculum and substituting practices more compatible with their knowledge and beliefs (Olson, 1981). Teachers make such curriculum decisions based on a wide range of knowledge and beliefs. In order to understand how the actual curriculum unfolds in the classroom, we should examine closely the knowledge possessed and used by teachers and the mental constructs of teaching that guide their work (Clark & Peterson, 1986; Grossman, 1990; Shulman, 1986; Elbaz, 1983).

This study seeks to explore through interviews and participant observation the thinking of teachers as they work together as a team to restructure the curriculum of the middle school classes in which they teach. It examines the features of middle school settings and middle school curriculum recommendations which constitute variables that teachers must consider in their planning. It also examines how teacher-perceived needs and practical constraints influence curriculum development in a specific middle school setting. Throughout the study a primary focus of attention is on understanding the ways in which teachers draw upon their own knowledge, beliefs, and concerns in making curriculum decisions as a team and in interpreting the team's intentions in their own teaching.

The middle school is an ideal setting in which to study the process of
curriculum development by teachers. The absence of an established curriculum specifically appropriate for the middle school has led to experimentation with various curriculum patterns. Such experimentation is perhaps more acceptable in the environment of middle schools, which are themselves part of a reform movement, than it might be in elementary schools or high schools with more established curriculum traditions. Also, the unavailability of commercially prepared curriculum packages encourages teachers to plan and develop their own units of instruction. This need for teachers to create as well as to implement curriculum provides a chance to explore the process of teachers' curriculum planning.

The lack of consensus on the content of middle school curriculum should not be taken to mean that no curriculum change has been taking place at the middle school level. Instead, there is widespread change and experimentation being carried out by middle school educators and supported by professional groups and networks such as the National Middle School Association and the Middle School Curriculum Project. However, most middle school curriculum reform is occurring on a grassroots level, in single school districts, single school sites, or by only a few teachers within a single building. There are few detailed accounts of how these changes have been implemented or evaluated. We know very little that can help us to understand how curriculum decisions have been made or what kinds of knowledge teachers need to engage in this kind of planning.
There are many existing proposals from which teachers may draw in creating a distinct middle school curriculum (Vars, 1987; Beane, 1990; Arnold, 1985). These proposals are supported by the philosophy underlying the increasingly popular middle school movement. These curriculum recommendations, however, have been stated only in the most general terms. It remains for the teachers themselves to translate the broad outlines of these proposals to the complex realities of their own schools and classes. Teachers who undertake this task find few models from which to learn how others have approached the same challenges. Almost no research exists to describe in rich detail the many factors that will influence how the middle school philosophy is most effectively applied in particular situations. Teachers also will find little research on the various types of middle school curriculum arrangements which have been tried or on their effects in comparison with desired outcomes.

One type of research that is now readily available consists of surveys of existing middle school organizations and practices. One of the most comprehensive of these was carried out by the Johns Hopkins Center for Research on Elementary Schools in 1988 (Epstein & MacIver, 1990). This was a national survey of principals of middle level schools that contain grade seven. It provided information on the extent to which middle schools used organizational structures or practices recommended by well-known middle school reform initiatives. Some of these features were schools-within-a-school, interdisciplinary teams, flexible scheduling, homogeneous grouping, advisory
programs, exploratory courses, and instructional practices such as active learning and cooperative groupwork. The report concluded that most of the 22 most frequently recommended practices were not part of most programs in schools for early adolescents. Also, a picture emerged of a curriculum content still very much based on the traditional courses of the junior high school.

Why has the middle school proved so resistant to change in the fundamental area of curriculum? Beane (1990) has suggested that part of the reason for the increasing success of the middle school movement is, in fact, that it has been mostly limited to reorganizing and adding to the standard junior high curriculum rather than challenging old loyalties and mandating substantive curriculum change.

Another reason for the absence of significant curriculum reform is suggested by Cuban's statement that "the teacher...is the source of both curriculum change and stability" (as quoted in Clandinin & Connally, 1992). One reason for the failure of top-down approaches to curriculum change may be that such approaches have failed to take into consideration the knowledge and belief systems of teachers. When they are urged to follow prescriptions from externally developed curriculum or from research, teachers implement, or fail to implement, them in ways that are consistent with their own deeply held beliefs about teaching, learning, and students (Bussis, Chittenden, & Amarel, 1976). For this reason, curricular change efforts based on externally imposed prescriptions and workshops aimed at training teachers to implement
these prescriptions usually fail to effect significant long-term change.

Awareness of the importance of teachers' commitment to and participation in curriculum change efforts has resulted in increased attention to middle school staff development programs and the development of a literature devoted to helping teachers use team planning to create more effective middle schools (Merenbloom, 1986, 1988; Garvin, 1990). A strength of such programs and literature is that they provide practical assistance in initiating and organizing the change process within schools. They also introduce teachers to alternative approaches to organization of curriculum content. A limitation has been the lack of attention to the many practical and theoretical considerations which concern teachers when working out the details of curriculum as it is to be carried out by teachers and students.

An active role for teachers in all phases of curriculum development from initial planning to classroom enactment assumes that teachers possess the knowledge necessary to perform their tasks. This implies that the teacher is more than a manager, adapter, or implementor of curriculum. Teachers are the ones who must translate the theory implicit in the intended curriculum to the actual curriculum as it will be experienced by students. Teachers must also negotiate between curriculum intentions and the realities of practical situations while considering differences in values and perspectives of all those who have an interest in the outcomes of the curriculum (Bolin, 1987).

Bolin (1987) called this task of negotiation and translation "curriculum
praxis" (p. 97). Schwab (1970) referred to the same kinds of activities as curriculum deliberation. This is consistent with the view that teachers should be more than technicians (Zumwalt, 1989; Bolin, 1987; Holmes Group, 1986). They should be "able to make decisions and plans based on principled knowledge that is adapted to the particulars of their teaching situation" (Zumwalt, 1989, p. 173).

Lichtenstein, McLaughlin, and Knudson (1992) also connected the idea of teachers as curriculum makers with the existence of a professional knowledge base necessary for carrying out more complex responsibilities. Goodlad (1991) cited the existence of such a body of knowledge as one of the marks of a strong profession. Calls for specialized certification for middle school teaching are based on a belief among middle school educators that there is a knowledge base specific to the needs of teachers at this level. A number of studies have produced lists of the types of knowledge considered important by middle level educators (Scales, 1991).

A limitation of such studies has been that they have not explored far enough the meanings and values teachers place on the knowledge they espouse. These meanings are inextricably connected to the ways in which teachers implement curriculum. A list, however inclusive, of the content of teachers' knowledge, would not provide a sufficient understanding of how this knowledge is drawn upon and used by teachers in deliberative tasks such as curriculum planning. Teachers' practice is shaped by the content of their
knowledge, but also by the orientations within which their knowledge is held and by the implicit beliefs and theories that influence how they interpret it (Elbaz, 1981; Shulman, 1987). Therefore, this study is an attempt to look at how the deliberative work of a middle school curriculum development team informs and is informed by the knowledge, beliefs, and concerns of individual teachers.

**STATEMENT OF THE PROBLEM**

Recent calls for restructuring middle level education (Carnegie Council on Adolescent Development, 1989; National Middle School Association, 1992; National Association of Secondary School Principals, 1986) have focused increasing attention on the need to establish schools that are responsive to the unique needs of middle school students. Although a great deal of attention has been given to organizational features of middle schools, there is still no consensus on what the middle school curriculum should be. Various curriculum proposals have been suggested (Beane, 1990; Vars, 1987; Jacobs, 1989), but they have not been widely implemented (Epstein and MacIver, 1990). There is evidence that curriculum change is taking place at a grassroots level within school districts or even within school buildings, but we know little about the process that occurs or the thinking that underlies it.

In order to learn more about restructuring curriculum for middle
school, or any other educational level, it is important to recognize the role that teachers play in determining curriculum. Recently there has been a trend toward viewing teachers as active participants in the curriculum-making process instead of seeing them only as implementors. There is little doubt that, whatever the intended curriculum may be, the actual curriculum experienced by students is greatly influenced by the knowledge, abilities, and intentions of teachers.

Although there is considerable evidence to indicate that most middle school curriculum change is, in fact, being carried out by teachers, there is a need for in-depth research to shed light on how this is taking place. We need to know more about the knowledge and beliefs that influence teachers as they think about curriculum and as they translate middle school curriculum recommendations into their own teaching contexts. In collaborative situations we need to know how the knowledge and beliefs of individual teachers affect the curriculum deliberations of the team. Finally, there is a need for more understanding of how teacher-initiated curriculum change is affected by practical and situational constraints in the school setting.

PURPOSE OF THE STUDY

The purpose of this study is to follow three middle school teachers who are part of an interdisciplinary team as they engage in a process of curriculum
deliberation. In the process I will seek answers to the following questions:

1. How do middle school teachers' knowledge, beliefs, and concerns affect the ways in which they plan and talk about curriculum?
2. When a middle school teaching team is involved in collaborative curriculum change, how are the curriculum deliberations of the team influenced by the knowledge, beliefs, and concerns of the individuals making up the team?
3. What are important variables which limit or reinforce teachers' collaborative efforts to plan and implement middle school curriculum change?

OVERVIEW OF THE STUDY

In this study I explored the deliberative thinking of teachers as they worked together to restructure the curriculum of the middle school classes they teach. The research subjects were a team of three sixth grade teachers who shared a common group of students. The goal of their collaboration was, and continues to be, to create and implement a truly integrated middle school curriculum. An influential factor motivating them toward this change was their interest in proposals for middle school curriculum integrated around themes which are developmentally appropriate for adolescents rather than around traditional academic disciplines. They also wanted to further their district's commitment to "outcomes-based education" and to the use of "authentic assessment".

In this effort toward curriculum change, these teachers have been given
a degree of autonomy and administrative encouragement that is unusual. The fact that these teachers were actively engaged in thinking about curriculum and were empowered to put their ideas into action made this an ideal situation in which to learn more about teachers as curriculum planners.

I explored this through a process of participant observation and interviews. One important part of this was to attend planning sessions held by the teachers in order to observe and listen to them as they work together. I also conducted a series of loosely structured interviews with each teacher at various stages in the planning and implementation process. The interviews were supplemented by classroom observations in order to provide confirmation of data obtained in the interviews and to generate questions to be explored in subsequent interviews. Another important source of data was documents produced throughout the study. These included reflective journals and working documents created by the teachers as they developed their plans.

The data analysis was an on-going process throughout the study. Data was organized and interpreted in terms of research questions established as the study was conceptualized. There was always the possibility that, as the study progressed, other relevant questions would emerge and, in fact, the initial research questions did undergo some revision in response to the data provided by the participants.
SIGNIFICANCE OF THE STUDY

This study will provide an in-depth look at the collaborative work of teachers as they engage in middle school curriculum restructuring. The conclusions will be significant because they will help to shed light on how the knowledge, skills, and beliefs of individual teachers affect the curriculum work of a team. They may also contribute to what we know about the formation and composition of effective curriculum teams. Finally, they will provide needed information about important factors that reinforce or limit teachers’ collaboration toward curriculum change. These kinds of understandings will become even more important as interest in teacher teaming is increasing and as teachers assume more active curriculum planning roles.

A highly desirable result of the study would also be to contribute to a heightened respect for teachers as professional decision-makers. I especially hope that it will encourage teachers to view themselves as holders of important knowledge and makers of curriculum.

LIMITATIONS OF THE STUDY

The supportive environment provided for the curriculum work of the teachers is this study is not characteristic of all school settings. These teachers have been granted a large degree of autonomy in creating their
curriculum plans, have enjoyed the strong support of their principal, and have received payment for some of the time spent in curriculum development. Their experience may differ from that of teachers under less facilitative conditions.

To the extent that the curriculum being developed is responsive to this particular school setting, the curricular decisions made by the teachers in this study may be less appropriate for those in schools of different sizes and different populations in other locations. It is hoped that richly detailed descriptions of the setting and the participants in the study will enable teachers and researchers to determine the extent to which it resembles other situations.

The findings of this study are necessarily limited by the time period chosen for data collection. Although the study encompasses periods of planning, implementation, and evaluation, a longer study could possibly yield additional significant data.

DEFINITION OF TERMS

Curriculum

For the purposes of this study the term curriculum will be used as it has been defined by Hass (as quoted by Toepfer, 1992). "Curriculum is all the experiences that individual learners have in a program of education whose purpose is to achieve broad goals and related specific objectives, which is
planned in terms of a framework of theory and research or past and present professional practice" (p. 207).

Distinctions are often made between intended curriculum and actual curriculum. In this study the word curriculum refers to both because attention is directed to both planning and implementation. Also many educators have pointed out the importance of a hidden, or implicit, curriculum. Such considerations may be said to enter into this study to the extent that teachers' deliberations are influenced by the culture and situational constraints of the school setting.

**Interdisciplinary Curriculum, Integrated Curriculum, and Core Curriculum**

These terms are used interchangeably to refer to a "knowledge view and curriculum approach that consciously applies methodology and language from more than one discipline to examine a central theme, issue, problem, topic, or experience" (Jacobs, 1989, p. 8).

**Middle School**

Middle school is a name frequently given to a school which includes any of several combinations of grades 5-8. However, true middle schools, as defined here, are characterized by an educational response to the needs and characteristics of youngsters during early adolescence and by an attention to a full range of these students' intellectual and developmental needs
Early Adolescence

This period, which Eichhorn (1966) called transescence, is the stage of human development which begins prior to the onset of puberty and extend through the early stages of adolescence until a degree of physical and emotional stability is attained. The age at which these changes occur varies widely among individuals, but usually occurs between the ages of 10 and 15 (Carnegie Council on Adolescent Development, 1989).
CHAPTER II

REVIEW OF RELATED LITERATURE

Three broad areas of literature contributed to the background for this study. These include (1) alternative proposals for middle school curriculum, both historical and current; (2) evolving conceptions of the role of teachers as curriculum makers and (3) studies of teachers' knowledge. Within these broad areas, certain subcategories have been identified as particularly relevant to the present focus.

Because of the interdisciplinary thrust of the curriculum project being studied, the review of alternative middle school curriculum proposals has been limited to those related to this approach. An examination of the origins of the interdisciplinary curriculum is followed by summaries of curriculum proposals which have been influential in the history of the middle school movement. Finally, there is a review of important current recommendations which support middle school curriculum change.

The literature on teachers as curriculum makers is part of a larger body of literature which develops an expanded view of the teacher as a reflective
professional and educational decision-maker. This review explores the role of the teacher as an active participant in curriculum-making. Inherent in this literature is a conception of teaching which does not separate curriculum and instruction, and in which curriculum planning, implementation, and evaluation are inseparably linked. Also included is a consideration of how teachers' curriculum-making roles are related to a wider environment of school change.

A view of teachers as curriculum change agents presupposes that they possess knowledge on which to draw in carrying out their tasks. Since the 1970s a literature has developed to explore teachers' thought processes and the role that these processes play in teaching. This review will consider the part of this literature that deals with delineating areas of teachers' knowledge, theories, and beliefs and with understanding how these areas might affect teachers' decisions about curriculum. Studies of teachers' practical knowledge and of pedagogical content knowledge appear to be especially useful in this context.

The areas of literature described here form a basis for a study of middle school teachers engaged in a process of curriculum development and for examining how teachers' knowledge, beliefs, and theories help to shape their decisions. This chapter consists of an introductory review of research in each area.
I. THE MIDDLE SCHOOL CURRICULUM QUESTION

What should be the curriculum of the middle school? James Beane has identified this question as an "absent presence" in the middle school movement (Beane, 1990). As more and more attention has focused on middle school restructuring, most of the changes implemented have been of an organizational nature. These changes include interdisciplinary teams, block scheduling, exploratory courses, and advisory programs. But little real change has been made in traditional curriculum content or in how that content is organized.

Lipsitz (1984) recognized that the translation of middle school philosophy to climate and organizational structure appears to be easier than the translation to curriculum. This is evident in Lounsbury's shadow studies which compared middle schools in 1977 and 1989 with those in their 1962 study. They found progress in school climate and attitudes toward students, but determined that the curriculum content still did not reflect a developmentally responsive approach different from other educational levels (Beane, 1990). Beane (1990) has suggested that part of the reason for the increasing success of the middle school movement is, in fact, that it has been mostly limited to reorganizing and adding to the standard junior high curriculum rather than challenging old loyalties and mandating substantive curriculum change.

Beane's statement becomes more understandable when the middle school
curriculum question is considered in the light of the historical debate on curriculum in America. Kliebard (1986) and Cremin (1964) remind us that the evolution of the modern American curriculum must be viewed in terms of competing political and social factors, as well as practical and bureaucratic constraints. A striking example of this is the structuring of the curriculum in terms of traditional school subjects. This practice, which is now accepted as the "normal" curriculum, was largely a result of the 1883 recommendation of the National Education Association's Committee of Ten that these subject categories be used as requirements for college entrance (Popkevitz, 1987).

Popkevitz (1987) has reminded us of the complex historical and political factors which have created a dominant curriculum and inhibited consideration of alternative curricular conceptions. In fact, many current middle school curriculum proposals have their foundations in earlier curriculum movements which at one time showed promise of becoming dominant. Krug and Beauchamp described the persistence of two different and opposing types of curriculum (Faunce & Bossing, 1958). One of these was based on conceptions of patterns of subject matter derived from the academic disciplines. The other type of curriculum is based on life activities (i.e., needs, interests, and problems of learners and society). The variety of curriculum proposals that have been discussed and implemented since the appearance of the middle school in the 1960s reflects the tension between the two competing curriculum traditions.
1. Origins of the Integrated Curriculum

Many of the current recommendations for middle school have their roots in the core curriculum movement that emerged as a major curricular approach between the 1920s and the 1950s. The beginnings of the core curriculum approach can be seen during the 1920s in John Dewey's Laboratory School at the University of Chicago and at the Lincoln School of Teachers College, Columbia University (Wraga, 1992). It reached its peak with the conclusion of the Eight Year Study in 1940 and declined slowly until Sputnik was launched in 1956 (Curtis & Bidwell, 1976).

Although there have been many variations of the core curriculum idea, the goal of all of these has been the integration of knowledge. The central organizing premise of programs identified as "core" has been that it is desirable to correlate what students learn in such a way that the student can make connections between central ideas and derive personal meaning from what is being taught. Alfred North Whitehead (1980), in his essays called The Aims of Education, referred in 1929 to "the fatal disconnection of subjects which kills the vitality of our modern curriculum". He cautioned against teaching isolated information unrelated to knowledge as it is used in the world and added, "There is only one subject-matter for education, and that is Life in all its manifestations" (p. 92).

L. Thomas Hopkins, a curriculum specialist at the Lincoln School at Columbia University, directed a study which developed a rationale for an
integrated curriculum and looked at how the principles of integration were being applied in schools of that time (Hopkins, 1937). In the book produced by the study he explained the derivation of the term "core curriculum". He said that in order to be successfully integrated, a correlated curriculum "must have a "core", a heart or center founded upon a principle of value" (p. 27). The values which Hopkins believed should lie at the heart of education were those which center on human needs and on social goals and purposes rather than on knowledge for the purposes of preparing for college or vocations. Such knowledge would integrate thinking, feeling, and acting.

Hopkins (1937) believed that early adolescence was an especially appropriate time for integrated educational experiences because students this age have "acute needs in the spheres of logic, emotion, ethics, and esthetics" (p. 32). He stressed the need of early adolescents to explore personal social values, to find relationships between subjects, and to relate learning to their own needs and purposes. He deplored the fact that for this age group schools tend instead to drastically increase subject specialization and to ignore questions of value.

The core curriculum was one of the few curricular organizations to be the subject of a major longitudinal study of its effectiveness. Between 1932 and 1940 Ralph Tyler directed a study of the graduates of 30 experimental schools, each of which developed its own curriculum which incorporated some elements of the core curriculum. The experimental students were matched
with graduates of other secondary schools who attended the same 300 colleges and universities. The colleges and universities agreed to suspend the usual entrance requirements for the experimental students. The graduates of experimental schools earned higher grades and received more honors than the graduates from traditional programs. Also they were judged to have a higher degree of intellectual curiosity, to be more resourceful problem-solvers, to have somewhat better orientation toward vocational choice, and to have a more active concern for what was happening in the world. Further, the more experimental the school, the greater the improvement was found to be (Curtis & Bidwell, 1976).

The findings of Tyler's Eight Year Study did not receive great attention, possibly because they were released during World War II, but the core curriculum continued to be popular. It has been interpreted in a variety of ways. In modern education the term has usually referred to a body of experiences thought necessary for all learners. It usually refers to experiences based on significant personal and social problems, but sometimes refers only to a common group of courses required for all students.

Use of the core curriculum was documented by Grace W. Wright in reports for the U. S. Department of Education in 1950, 1952, and 1958 (Wraga, 1992). Wright (1952) organized the types of core programs being used into four groups based on the work of Harold Alberty of The Ohio State University:

Type A: Each subject retains its own identity in the block time.
Subjects may or may not be consciously correlated.

**Type B:** Subjects within the core are unified or fused into a unified whole around a central theme.

**Type C:** The core consists of a number of broad preplanned problems usually related to a central theme. Problems are based on predetermined areas of pupil needs as curriculum developers see them. Subject matter from the disciplines is brought in only as it applies to the problem.

**Type D:** The core is problem-centered as in Type C, but the problems are not predetermined. The pupils and teacher are free to work together in the selection of problems. Again, the subject matter is selected from the disciplines only as needed to address the problem.

Wright found that 82% of the core courses that existed in the United States during the 1956-1957 school year were either Type A or Type B (Wraga, 1992). The popularity of the core curriculum declined during the next three decades. This decline has been attributed to a number of social and political factors that brought about a series of discipline-centered national reforms beginning in the late 1950s and early 1960s (Wraga, 1992).

### 2. Early Middle School Curriculum Proposals

In the 1960s the middle school movement emerged as a response to what many regarded as the failure of junior high schools to meet the needs of early adolescents. The curriculum proposals developed by the leaders of this
movement fell into two major categories. The first focused on making traditional subject areas more responsive to early adolescents through improved instructional techniques and the addition of curriculum components intended to address students' physical, social, and emotional needs. Proposals in the second category include types of curriculum reform involving some degree of subject integration or a form of core program (Beane, 1990). The first category began to appear as junior highs were beginning to become middle schools, and this kind of curriculum has remained the most popular, according to the 1987 report of the Center for Research on Elementary and Middle Schools (Epstein & MacIver, 1990). The following summaries of several well-known middle school curriculum proposals provide examples of the first category and show an evolution toward the second category.

Donald Eichhorn (1966) presented what has become a classic rationale for a special kind of middle level school for early adolescents. He coined the term Transescence to designate the stage of development which begins prior to the onset of puberty and extends through the early stages of adolescence. This is a period of dramatic physical, social, emotional, and intellectual change, and middle level students of the same chronological ages may vary widely in their developmental stage. Eichhorn believed that a curriculum which could meet the needs of such a diverse group must consider the internal and external forces that affected individual students. These forces were physical, emotional, intellectual, economical, political, and sociological. Using these forces Eichhorn
created a socio-psychological model from which he derived a curriculum model.

This model is, in fact, two curricula. There is an analytical curriculum based on the thought processes inherent in the four major content areas, mathematics, language, social studies, and science. There is also a physical-cultural curriculum which includes fine arts, physical education, practical arts, and cultural studies. The model provides for knowledge of content and thought processes of the academic disciplines and also addresses the transescent's physical, esthetic, emotional, and social needs, preferably in an integrated way.

A later Eichhorn model in 1972 described a three-part curriculum made up of Learning Processes, Personal Development, and Knowledge. In the Learning Processes, students gain analytic skills, communication skills, and technical skills. The Personal Development area is similar to the idea of core curriculum. The Knowledge component consists of integrated, interdisciplinary study of the history, challenges, and ideals of the human race. Its themes draw from humanities, arts and sciences, and student interests (Lounsbury & Vars, 1978).

In their book The Emergent Middle School (Alexander, Williams, Compton, & Prescott (1968), William Alexander and associates suggested a curriculum that linked purposes of learning with curriculum organization. The three components of this curriculum were Personal Development, Skills for Continued Learning, and Organized Knowledge. A noteworthy element of the
Personal Development area was the provision for individual and group guidance through home-base groups led by teacher-counselors. Personal Development also included the development of values, health and physical development, and activities such as exploratory experiences, lab courses, and clubs designed for individual interests. The area of Organized Knowledge was intended to help students learn the basic concepts in the usual four major disciplines. Interdisciplinary teaming was advocated as a means of organizing for instruction, but in this plan each subject retained its own integrity and was merely correlated with others.

The evolving curriculum work of Gordon Vars serves as an interesting illustration of how dissatisfaction with merely adapting traditional subject-centered curriculum led to the development of proposals for curricular reform such as interdisciplinary or core programs. During the early middle school years, Van Til, Vars, and Lounsbury (1967) published Modern Education for the Junior High School Years. It reveals a great deal about the varieties of middle level curriculum that existed at that time. They described a continuum of curriculum patterns, traditional and experimental, which reflected diverse practices being implemented in schools. The six patterns were the Subject Curriculum, the Subject-Area Curriculum, the Subject-Area Block Curriculum, the Unified Studies Curriculum, the Core Curriculum, and the Experience Curriculum. Strong correspondences can be seen with the four types of organization earlier defined by Grace Wright (1952). The first three
patterns fall within Wright's Type A, the Unified Studies Curriculum could be classified as Type B, the Core Curriculum is Type C, and the Experience curriculum is a familiar name for Type D.

In the 1967 book Van Til, Vars, and Lounsbury described a Core-Plus-Disciplines approach as a response to increased concern in the 1960s about exposing students to the scholarly disciplines (Van Til, Vars, & Lounsbury, 1967). This required that a problem-centered core be scheduled in addition to conventional academic subjects. Lounsbury and Vars (1978) take a similar approach in their later work. The main component of their plan is a problem-centered core designed to enable students "to examine in depth both personal and social problems that have meaning to them" (p. 46). They recommended a structured core and provided the following examples of problem areas that might be explored: Personality Development, Sex, Pollution, Population, or Human Rights.

Vars (1987), in his recent book Interdisciplinary Teaching in the Middle Grades, presented an updated and simplified approach. He described how interdisciplinary programs may be organized as a total staff approach so that units may be carried out as a whole school or they may be organized as interdisciplinary teams who collaborate on units. He outlined three basic ways of interrelating different subject areas. The most frequently used is Correlation which may occur when teachers coordinate their teaching to take advantage of related instruction in other subjects. Fusion, sometimes called
unified studies, is a higher degree of integration which blends two subjects into one. For example, English and history may combine to form a course called American Studies. Core is defined as a problem-centered curriculum which deals with issues or topics of importance to students. Content from any subject is brought in only when it can contribute to addressing the problem being studied.

With the exception of Vars' work, the proposals summarized here represent the tendency of the middle school movement to concentrate on making school environment and organizational practices more responsive to early adolescents' affective needs as well as their academic needs. Vars' 1987 work, with its emphasis on interdisciplinary teaching, belongs more appropriately with a recent focus on restructuring the content of the curriculum in order to make it more compatible with the characteristics and needs of middle school learners. The next section of this chapter will describe some of the most respected current recommendations for middle school curriculum.

3. Integrated Curriculum for the Modern Middle School

The concept of interdisciplinary teaming is the most important distinguishing characteristic of current middle schools (Lounsbury, 1991). It calls for a team of teachers, usually representing each of the four main content areas (math, language arts, social studies, and science), to share responsibility
for teaching a common group of students. It is still used by only a minority of middle schools (Epstein & MacIver, 1990), and is primarily used as an organizational practice while departmentalized teaching continues (Lounsbury, 1991).

Heidi Hayes Jacobs (1989), an advocate of interdisciplinary teaching, has attempted to help teachers move from departmentalization toward an interdisciplinary approach in the structuring of curriculum content. Her book *Interdisciplinary Curriculum: Design and Implementation* described a variety of forms of curricular integration and detailed information about constructing suitable units. Her description of a continuum of options varying in degree of subject integration was very similar to that described by Van Til, Vars, and Lounsbury (1967). Jacobs (1989) listed six categories of programs. Least integrated is the Discipline Based curriculum. Parallel Disciplines involves the coordinated instruction of more than one discipline. Multidisciplinary Units or Courses bring several disciplines together to investigate a theme or issue. Interdisciplinary Units or Courses, as Jacobs defines them, bring together the full range of disciplines in the school for a unit or course of a specified duration. Such units complement, rather than replace the discipline-field approach. The Integrated-Day model is closest to core as it is defined by Hopkins (1937 and Faunce and Bossing (1958). Finally, the Complete Program is the most revolutionary. It resembles the Type D described by Wright (1952) and the Experience Curriculum described by Van Til, Vars, and Lounsbury
(1967) and is intended to make up the total focus of the curriculum.

Jacobs (1989) cited advantages and disadvantages of each design option and encouraged teachers to choose and combine options which were compatible with the realities of their schools in terms of scheduling, the disposition of the staff toward change, and local curriculum requirements. She clearly believed that an interdisciplinary approach is beneficial to students for several reasons. It helps to reduce the fragmentation of student's knowledge and of their school day. It also increases relevance by showing students how different subject areas relate to their lives and it presents the various discipline perspectives in connected ways. The rapid growth of knowledge in today's society and the increasing realization that specialists must relate their knowledge to a broader world of work make interdisciplinary learning more important than ever.

Two problems frequently cause interdisciplinary approaches to fail, according to Jacobs (1989). The first of these she called the Potpourri Problem. Because there is no inherent scope and sequence in interdisciplinary work as there is in the discipline fields, teachers must create a structure for interdisciplinary courses or units. Because this is difficult, the result is often that the unit is composed of a poorly planned sample of knowledge from each discipline. Jacobs stressed the need for interdisciplinary units to carefully plan "a scope and sequence, a cognitive taxonomy to encourage thinking skills, behavioral indicators of attitudinal change, and a solid evaluation scheme" (p. 2).
The second problem which concerned Jacobs (1989) was the Polarity Problem. This referred to the tendency to see interdisciplinarity and the discipline fields as an either/or situation. Students, she maintained, should encounter both kinds of curriculum experiences. Schools with the least fragmentation and the most success, according to her observation, avoided an all or nothing approach to interdisciplinary curriculum and adopted a more pragmatic way of combining design options to suit their needs.

Erb and Doda (1989) also took a practical approach to integrating curriculum in their book *Team Organization: Promise--Practices and Possibilities*. They made important connections between the organizational aspects of interdisciplinary teaming and the integrated content of interdisciplinary teaching. Very few writers have addressed both aspects. Erb and Doda defined four levels of curricular integration practiced by team members and gave attention to how the team structures facilitate these. Level 1 is preintegration which refers to flexible scheduling that is possible on a team to provide more instructional possibilities. Level 2, coordinated or overlap teaching, is teaching related topics, lessons, etc., at the same time. Level 3, cooperative teaching, requires two or more teachers to make changes in how they teach a topic in order to mutually reinforce each other's subject. Level 4 is the Interdisciplinary Thematic Unit in which two or more teachers plan a unit of instruction that fully integrates their different subjects around a common theme or problem.
The most important change in perspective that has occurred in current writing about middle school curriculum is that there is increased concern about what themes or problems are chosen as the content for interdisciplinary studies. In spite of the limited popularity at times of the core curriculum or the experience curriculum, the subject-based curriculum has remained dominant, even when subjects were integrated (Epstein & MacIver, 1990). Now increasingly middle school leaders are talking of reorganizing the curriculum so that preadolescents and their needs rather than academic disciplines are the central determining factors (Erb & Doda, 1989; Arnold, 1985; Middle Level Curriculum Project, 1993; Beane, 1990).

Arnold (1985) listed five key principles of a responsive curriculum for the middle level. First, it must help students make sense of themselves and their world, both of which are changing rapidly. Second, the methods and materials must be appropriate to students’ varied levels of cognitive development. Next, the curriculum must emphasize knowledge, not just information and isolated skills. Fourth, teachers must value concrete and real world experience so we can help children with their lives. Last, a responsive curriculum means that teachers must be knowledgeable people who trust their own judgements and instincts so that they have the courage to act.

McDonough’s (1991) priorities in curriculum development may be summarized in the phrase "search for self and social meaning" (p. 31), which he believed was an important task for students at this age. In describing the
work of the Middle Level Curriculum Project, McDonough listed the kinds of questions that guide a developmentally appropriate curriculum for early adolescents. These questions grow out of three primary sources: questions young adolescents have about themselves, questions they have about the world about them, and questions that are posed to them by the world in which they live. McDonough and associates believe that these questions should be generated cooperatively by students and teachers.

Probably the curriculum proposal which has received the most recent attention has been developed by James Beane (1990). Beane has suggested a curriculum model in which the interdisciplinary themes grow out of a dual focus on early adolescent concerns and the concerns of the broader society. For example, a major adolescent concern is finding a place in the peer group. The world the adolescent lives in faces more than ever the problems of global interdependence. Beane sees an intersection of these two concerns in a possible unit theme of Interdependence. Similarly, the personal concern for fitness and the societal concern for environmental protection might generate a unit on Wellness.

Beane (1990) is reacting to what he sees as a fragmented curriculum made up of "curriculum pieces" (p. 12). The pieces represent various components of the modern middle school, but they fail to form a coherent whole—a curriculum consistent with the middle school philosophy. Beane gives examples of these components: interdisciplinary teaming to create subject
correlations while curriculum is still based on subject identities; exploratory courses to cover technical and esthetic needs; advisories to aid in personal/social development, and activities programs to meet individual interests. Beane's proposal is intended to encourage educators to think about middle school curriculum as a total entity. Most of all he seems to be asking middle school educators to give fresh consideration to constructing a curriculum content that is consistent with what they say they believe about early adolescents, rather than just reorganizing the curriculum to form a junior version of the high school.

Summary

This review of alternative proposals for middle school curriculum has attempted to provide a background for understanding how the interdisciplinary curriculum came to be a characteristic part of contemporary recommendations for middle schools. Because of the unavailability of commercial interdisciplinary curriculum packages and because of the unique needs of each school, the burden of planning such a curriculum falls largely on classroom teachers. This curriculum development role is often one that is unfamiliar to teachers who traditionally have been viewed as implementors of curriculum planned by others. The next section of this literature review examines the newly recognized role of teachers as curriculum makers.
II. TEACHERS AS CURRICULUM MAKERS

The 1980s was marked by two waves of educational reform (Lieberman, 1992; Goodlad, 1990; McDonald, 1989). The first wave was initiated by the publication of *A Nation at Risk* (National Commission on Excellence in Education, 1983). This report was intended to alert the public to the need to address shortcomings in the country's educational system that were threatening the nation's future. The emphasis was on instituting a more rigorous course of study and on raising curriculum standards. The policy initiatives that resulted from the reforms of this era were prescribed in a top-down manner in which teachers were assumed to be the instruments for carrying out these policies (Lieberman, 1992).

The second wave began with the appearance of *A Nation Prepared: Teachers for the 21st Century*, a report of the Carnegie Forum on Education and the Economy (1986), and the report of the Holmes Group (1986) entitled *Tomorrow's Teachers*. In this wave the emphasis shifted to issues of teacher preparation, to a focus on teachers and students, and to the task of restructuring schools (Lieberman, 1992). Implicit in these reports was a vision of teaching in which teachers used their knowledge to create learning communities for themselves and their students, engaged in inquiry to improve their teaching practice, and were involved in the preparation of new teachers for their profession (Holmes Group, 1986). Rather than remaining the objects of reform efforts, teachers would become active participants for the renewal of
This expanded view of the professional roles and responsibilities of teachers has led many educators to reexamine their conceptions of how the teacher is to be involved in school change and decision-making. Curriculum making is one such area in which teachers’ roles are being reevaluated. The growing professionalization of teaching calls for teachers "to know more, to be heavily engaged in curriculum making and instructional decisions in the school, and to be more involved in reshaping the school to focus on students" (Lieberman, 1992, p. 8).

1. Teachers’ Changing Curriculum Roles

Clandinin and Connelly (1992) have written a review of the literature on the teacher as curriculum maker, an area they have concluded has not been adequately covered by the literature on teaching. In the process of this review they have become aware of a "conduit" metaphor that pervades the literature of curriculum development and reform. This metaphor provides insight into how the teacher is perceived in relation to the curriculum. It suggests that teachers are merely the agents who deliver a curriculum content which they have no part in developing.

The conduit metaphor originates, according to Clandinin and Connelly (1992) in the traditional separation of curriculum and instruction in educational literature and in teacher education institutions. This separation
has resulted in the linking of the idea of curriculum to subject matter rather than to classroom practice. Clandinin and Connelly reject this dualism in which curriculum is seen as a body of predetermined content determined by theorists and intended to be delivered by teachers. In their view the teacher is seen as an integral part of the curricular process in which "teacher, learners, subject matter, and milieu are in dynamic interaction" (p. 392).

For Clandinin and Connelly (1992) the separation of curriculum and instruction is primarily a distinction between ends and means. Such a distinction is evident in the literatures of curriculum development and curriculum reform. There the ends, or purposes, of education are assumed to be properly defined by curriculum theorists or subject matter experts. Teachers would determine the instructional means for achieving these ends. Clandinin and Connelly maintain that traditionally the curriculum has been seen as an instrument of reform, and teachers were seen as mediators between the curriculum and intended outcomes.

The concerns expressed by curriculum researchers and by those in the field of curriculum implementation reflect the ends versus means outlook inherent in curriculum reform initiatives. Clandinin and Connelly (1992) drew attention to three related concerns which appear in this literature. First, there is a concern with the faithfulness to the curriculum developer's original intentions with which change was made. This concern has resulted in efforts to measure degrees of policy implementation, to determine how teachers can
be persuaded or helped to implement changes, and even to develop "teacher proof" curriculums which involve little or no teacher decision-making. The second concern is the assumption that effective curriculum reform requires that teachers' behaviors in some way be changed. Depending on the ideological flavor of the reform effort, teachers should, for example, teach skills or use curriculum materials in specified ways, serve as discussion leaders for their classes, engage in group collaboration, or become action researchers. The third concern is the extent to which the literature reflects a focus on ideal materials and practices while ignoring the degree to which these are workable in the complex and messy reality of the classroom.

Clandinin and Connelly (1992) believe that viewing ends and means as "inextricably linked" (p. 369) might lead to different ways of approaching curriculum research. The issue would no longer be finding out what is going on in classrooms and doing something about it, but instead the issue would be the "mutual making of curriculum with teachers and other practitioners" (p. 369). They propose the development of a new literature based on the metaphor of teacher as curriculum maker. Such a literature would include teachers' stories of their lives in classrooms and would create a new way of seeing curriculum theory as it is situated in the realities of practice.

The work of Joseph Schwab (1970) is foundational for understanding a conception of curriculum that is based on practice. Although he did not view the teacher as a curriculum maker, Schwab insisted that any view of the
curriculum that did not include the teacher was incomplete. He maintained that curriculum involved four commonplaces: teacher, learner, subject matter, and milieu. This was a step toward reducing the separation of ends and means because the activities of the teacher which had been viewed as instruction now became legitimate curriculum activity (Clandinin & Connelly, 1992).

Schwab (1970) believed that, in order to improve curriculum, energies should be redirected from theoretical issues to the practical, quasi-practical, and eclectic. Theory, he said, deals with abstract or idealized representations of real things, but curriculum will deal poorly with real children, real teachers, and real classroom settings if they are treated only as examples of their theoretic representations (Schwab, 1969).

A practical curriculum orientation, as defined by Schwab (1970), differs from a theoretical mode in its method, in the source of its problems, and in its outcomes. The outcome of the theoretical is generalized or universal knowledge which is supposed to be trustworthy and durable for a large class of occurrences. The outcome of the practical is a decision, a selection, and a guide to possible action which cannot be generalized with reliability beyond the specific instance and cannot be judged true or trustworthy, but only better or worse when compared with other alternatives.

The quasi-practical is an extension of the practical which concerns the process of decision-making and the formulations of the decisions made. It
refers to the necessity when dealing with complex situations and diverse groups of determining the applications needed to address varying circumstances. It also involves a recognition that any decision will have consequences and will affect and be affected by decisions made by others.

The eclectic mode concerns the ways in which theories are used, not as a substitute for the real case, but as sources of knowledge which can be brought to bear in a deliberative way upon practical problems. Schwab's (1970) view of curriculum extended beyond the subject matter content to include what Zumwalt (1988) has called the enacted curriculum. He insisted that curriculum be examined where it is actually found—in real teaching situations. That he meant to include teachers in curriculum making is evident in his final paper entitled "The Practical, 4: Something for Curriculum Professors to Do" (Schwab, 1983). There he described the curriculum planning as a collaborative process in which teachers should be the first members chosen for the team.

Zumwalt (1989) also stressed the curriculum role of the teacher. She argued that knowledge of curriculum is by definition central to the vision of the professional teacher. Curriculum is viewed as an evolving construction that results from the interaction of teacher and students rather than as something predetermined. The ends, or desired outcomes, embodied in the curriculum influence instructional decisions. Instructional strategies in turn transform the content of the curriculum. The teacher's task can be seen,
therefore, as developing curriculum rather than just implementing it. With this in mind Zumwalt outlined the kind of curriculum planning knowledge that beginning teachers should have. Teachers need knowledge of the following: alternative models of curriculum planning, educational purposes expressed in terms of the commonplaces of teaching (teacher, learners, subject matter and milieu), selection and organization of learning experiences, and evaluation. It is important to Zumwalt that this knowledge be held and used in a professional context that gives teachers discretion and autonomy in their classrooms and encourages reflection and deliberation about purposes and meanings.

Zumwalt (1988) also discussed the ways in which a lack of this kind of professional culture in schools fostered a conception of teaching which runs counter to a view of teachers as decision makers. She deplored an increasing tendency toward overregulation of teachers' behavior, overstandardization of curriculum, measurement-driven instruction, and research-based prescriptions for effective teaching. School reform efforts guided by such a control mentality, she believed, were based on a restricted view of the teacher as a technician and an unsophisticated view of the curriculum as a "package to be delivered to an undifferentiated student group" (p. 149).

Common and Grimmett (1992) looked at the ways in which the expanded professional role of the teacher affects the relationships of supervisors and teachers in the curriculum making process. They first described a dominant
paradigm of educational administration and supervision. In this paradigm the supervisors existed at a higher level within a hierarchy of knowledge and power and their communications with teachers were largely prescriptive in nature. Common and Grimmett welcomed what they saw as a shift toward a new paradigm characterized by teacher development in which teachers lead, school-based communities of mutually supportive learners focused on specific curricular-instructional tasks, a reconfiguration of leadership roles in which supervisors and teachers contribute their strengths and knowledge as it is needed, and a school culture of interdependent collegiality.

In the ideal schools described by Common and Grimmett, the teacher's reservoir of experience, ability, and practical knowledge would be respected and valued. Teachers and administrators would view curriculum, teaching, learning, and assessment as part of a connected, on-going enterprise. Collaboration would be an essential feature of such schools, but control over curriculum content would rest mainly with teachers.

2. From Curriculum Implementor to Curriculum Creator

The teacher's role as a curriculum maker cannot be understood apart from the school context in which curriculum change must take place. A widespread resistance to change within this context may help to explain the failure of most curriculum reform efforts to produce significant and durable changes in schools (Cuban, 1988). Many have attributed this resistance to a
mismatch between the language, goals, priorities, and concerns of researchers and innovators with those of teachers (Bolin, 1987; Swanson-Owens, 1986; Olson, 1981; Bussis, Chittenden, & Amarel, 1976).

Bussis, Chittenden, and Amarel (1976) explored how curriculum implementation was affected by the degree to which the priorities of the curriculum were shared by the teachers implementing it. Their book Beyond Surface Curriculum was based on in-depth interviews with 60 teachers who were involved in an "open education" approach to instruction. In order to analyze teachers' understandings and constructs to the ways they related to the curriculum, Bussis and her associates conceptualized two levels of a curriculum construct. The first level they called surface content. This refers to the variety of experiences a teacher plans and provides for children. These are what an observer would see happening in a classroom. A deeper level was called organizing content. This consists of the priorities and concerns which provide the reasons for the activities. Bussis, Chittenden, and Amarel called surface content the "what" of curriculum and organizing content the "what for" (p. 50).

These researchers believed that teaching and learning are accomplished more effectively when teachers perceive connections between surface and organizing contents (Bussis, Chittenden, & Amarel, 1976). Their study explored the extent to which teachers saw the activities of the surface curriculum as matching their personal priorities and understandings of what
was important. They documented several levels of teachers' awareness of how their own organizing priorities were reflected in the surface content of the planned curriculum.

Bussis, Chittenden, and Amarel's (1976) work suggests that curriculum implementation must take into account the extent to which teachers agree with its organizing purposes. Swanson-Owens (1986) also was interested in looking at curriculum implementation from the point of view of the teachers involved. She sought to determine why teachers often resist incorporating new curriculum ideas into their practice even though they may verbally endorse those ideas. Swanson-Owens used a case study of two high school teachers' responses to her own suggestions of a particular set of writing tasks and then developed an analytic model which she used to explore teachers' responses to change.

This model, adapted from Elbaz's (1981) categories of teachers' practical knowledge, included four categories of teachers' thinking relevant to Swanson-Owens' task. These were the teachers' conceptions of the knowledge their students needed, the materials and activities to be used in teaching, teachers' self-defined roles as teachers, and teachers' evaluations of their students. These were the components of what Swanson-Owens called a curricular system of meaning. Yet, she found that the ways teachers defined the meanings they attached to each component did not reflect the actual or unconscious meanings they attached to them and the actual teaching practices
Swanson-Owens (1986) attempted to discover why, in spite of expressed agreement with the suggested use of writing tasks, the teachers resisted actually using them as planned. She concluded that each participant had a primary concern that mediated his or her interpretation of curricular and instructional issues. As a way of exploring the meanings that underlie these expressed belief systems, Swanson-Owens examined two factors that served as sources of resistance to curricular change.

The first factor, the teacher's "locus of attention" (Swanson-Owens, 1986, p. 81), serves as a critical center of interest or concern which acts as a screen through which the teacher filters everything associated with a new curriculum. This means that though a teacher may agree with the stated goals or curriculum intentions, he or she may neglect or resist carrying out aspects that are perceived to be in conflict with his primary center of attention. The second factor examined by Swanson-Owens was the "conditions of instruction" (p. 90), which refers to the teachers' underlying conceptions about the source of new knowledge, how learning takes place, and teachers' instructional goals.

Swanson-Owens (1986) maintained that "the adoption of a new curriculum is conditioned by the degree of fit between the meaning systems of those initiating it and those implementing it" (p. 71). Although in this study Swanson-Owens did not look at teachers as planners of curriculum, she did recognize the necessity of taking into account the knowledge and perspectives
of teachers. Like Bussis, Chittenden, and Amarel (1976) she believed that whatever the intended curriculum may be, the actual curriculum is heavily influenced by the meanings systems held by teachers.

To view the teacher primarily as a curriculum implementor, however respectfully, is to limit the professional role of the teacher as described by Zumwalt (1988, 1989) and others. More in keeping with the latter view, Bolin (1987) focused on the teacher as a curriculum decision maker who must negotiate differences in value and perspective of those who have a vested interest in curriculum outcomes. Such differences might involve the relative focus to be given to the needs of society, the organization and selection of content, or the needs of the students. Those who agree on these elements might still disagree on preferred learning or curriculum models or on a given content or program. Bolin emphasized that too often curriculum thinkers assume agreement on perspectives rather than recognizing the diversity that exists. However, she stated that it is not enough to recognize diversity. If curriculum work is to proceed, it is necessary to engage in social and political negotiation.

There are many levels at which curriculum negotiation must be carried out. Bolin (1987) recommended that it begin with the initial planning when moral and ethical decisions as well as practical decisions are made. This is the intended curriculum which, if it is to be actualized, must take into account how it will be lived out in the classroom. This means that curriculum and
instruction are closely interrelated. Teachers' participation begins with the curriculum document which is analyzed, modified, and supplemented according to the realities of the classroom. This is necessary, Bolin insists, because teachers are the ones who must assist students in realizing the curriculum. When the teacher begins to implement the curriculum, another set of negotiations must begin. Teachers must be faithful to their own values, yet at the same time recognize and represent fairly the values of others such as parents, students, other educators, and the community.

Bolin (1987) cited the failed curriculum reforms of the 1960s and 1970s as evidence that teachers will not follow through on implementation of a curriculum unless they have an investment in it. She proposed a concept of curriculum development that includes both intention and action and thus lays the basis for the inclusion of the teacher as a curriculum thinker. This makes sense, according to Bolin, both on the pragmatic grounds just cited, and because of the nature of the teacher's task. She put forth the idea of curriculum making as praxis, Friere's term for reflective or thoughtful action. This means that the teacher is the key factor in joining the reflection inherent in curriculum theorizing with the action of the curriculum in use. As such the teacher must be involved at all levels of curriculum decision making.

Connelly and Elbaz (1980) examined further the character of teachers' curriculum thinking. Their purpose was to develop conceptual bases for curriculum thought from a teacher's perspective. A review of the curriculum
work that took place between 1960 and 1980 led Connelly and Elbaz to outline what had been learned and to formulate five points that form a context for looking to the teacher for a conceptual basis of curriculum thought. The first of these echoes Schwab’s (1969) call to return to a view of curriculum that has its source in practice rather than in theory. The goal of this type of curriculum thought would be the improvement of practice, not simply the development of theoretical understanding.

The second point, according to Connelly and Elbaz (1980) was that teachers could use theory as a conceptual basis for thinking about assumptions and classifications of theories. In order to do this, teachers must first ask questions to determine the compatibility of the theory’s intentions with their own views and with the task at hand. Then they may decide to learn what the theory may add to their own deliberations. The third point is related. This is that a diversity of curriculum policies and thought is an acceptable and inevitable state of affairs. When curriculum thinking is reduced to a dependence on any single theoretical perspective, much that is valuable from other perspectives is lost. Because practical situations are diverse, the applicability of any single theory to practical situations is narrow. Many once popular curriculum conceptions offered simplicity and order but have failed, according to Connelly and Elbaz, because they could not by themselves address the complex realities of practice.

The fourth point relates to the evaluation of methods of curriculum
reform. Connelly and Elbaz (1980) believe that the methodology of curriculum implementation researchers is inadequate for the improvement of schools. Its focus is on the application of theory to practice, research findings, and well-researched curriculum development. This focus is not compatible with the belief that practice itself is the most appropriate starting point for constructing conceptions aimed at improving practice. "We cannot satisfactorily proceed by continually adjusting the application methodology as resistance develops during implementation. Rather, methodologies localized in the nature of practice itself are required" (Connelly and Elbaz, 1980, p. 106).

The fifth point enumerated by Connelly and Elbaz (1980) bears the most relevance for the present study. It summarizes a shift that has taken place in the notion of the teacher's function from that of curriculum implementor to that of decision maker and independent developer. Connelly and Elbaz rejected an implementation approach to curriculum because it limits teachers' inquiry to choosing strategies for carrying out curriculum rather than allowing them voice in the ideas and intentions that underlie the chosen curriculum. Action-research implementation strategies, they believe, are more respectful of teachers' knowledge, but still confine teachers' participation to adoption strategies rather than to the evaluation of underlying assumptions and purposes of a particular curriculum.

Connelly and Elbaz (1980) identified three trends that have shaped teachers' curriculum roles. The first trend reflected a view of the teacher as
an impediment to curriculum implementation and sought to develop materials which would limit the possibility that teachers would, through hostility or incompetence, fail to effectively carry out the intent of developers. Such "teacher proof" materials would bypass the teacher as much as possible. The second trend recognized the importance of teachers' influence and sought to enlist their cooperation and skill in adopting new curriculum strategies. Efforts in this regard varied from purely pragmatic attempts at training teachers to use new methods and materials to attempts to gain teachers' agreement and enthusiasm for new programs. The third trend is clearly the one endorsed by Connelly and Elbaz (1980). This is the emerging view of teachers as full partners in curriculum development. The teacher is seen to be more than "adjudicator, adjuster, and adapter of knowledge" (p. 110). Connelly and Elbaz constructed a conceptual basis of curriculum thought which centers around the teacher who, through deliberation, constructs curriculum in an environment involving many stakeholders. In this deliberation the teacher draws upon a body of knowledge held in a practical way and structured in terms of practical purposes.

Summary

The literature reviewed here suggests that effective curriculum development must take into account the perspectives and knowledge of
teachers. The history of failed reforms is evidence that curriculum is not
implemented by teachers when they have no investment in it or when the
language or purposes of the curriculum are not consistent with the values or
concerns held by teachers. These considerations demand a more active
curriculum role for teachers. More important, however, is the recognition that
reliance on an implementation approach to curriculum fails the complexities
of practice. Teachers whose knowledge is grounded in practice should have a
voice in curriculum deliberations at every stage, including establishment of
initial assumptions and purposes, planning, implementation, and evaluation.
Such a role assumes that teachers would be able to draw upon a broad range
of knowledge applicable to curriculum development. The final section of the
literature review will examine relevant delineations and descriptions of the
knowledge held by teachers.

III. TEACHER KNOWLEDGE

Studies of teacher knowledge are part of a larger body of research on
teachers' thought processes. Most of this research has been done since 1976
(Clark & Peterson, 1986). Although a few researchers, such as Phillip Jackson
in 1966 and Dahlof and Lundgren in 1970, conducted studies on the mental
constructs of teachers, most research at that time focused on observable
teacher behavior.
One of the most influential factors that initiated an interest in research on teachers' thought processes developed from the National Institute of Education's (1975) National Conference on Studies in Teaching. As one of 10 panels which produced plans for research in their areas of expertise, Panel 6, chaired by Lee Shulman, produced a report that provided a rationale for studying the thinking of teachers. It stated, "It is obvious that what teachers do is directed in no small measure by what they think. Moreover, it will be necessary for any innovations in the context, practices, and technology of teaching to be mediated through the minds and motives of teachers" (p.1). The Panel 6 report argued further that researchers must study the mental processes by which teachers (a) make sense out of diversity; (b) bring their empirical and theoretical knowledge to bear upon their work; (c) somehow combine that information with the teachers’ own expectations, attitudes, beliefs, and purposes; and (d) engage in a recursive cycle of decision-making, reflection, and evaluation.

Clark and Peterson (1986) organized research on teachers' thought processes into three domains: (a) teacher planning (preactive and postactive thoughts); (b) teachers' interactive thoughts and decisions; and (c) teachers' theories and beliefs. In a practical sense this study is concerned with all three areas as they relate to the planned and actual curriculum experienced by teachers and students. However, the concern in this study is primarily on the teachers' knowledge, theories, beliefs, and attitudes that underlie the planning
processes and instructional decisions. Therefore, this review concentrates on the third body of literature described by Clark and Peterson. In this category of research Clark and Peterson include several studies of teachers' practical knowledge.

Kathy Carter (1990) organized studies of teacher's knowledge in three categories. The first category, information-processing studies, appear to include Clark and Peterson's two categories of teacher planning and teacher decision-making. Carter's second category, teachers' practical knowledge, subsumes Clark and Peterson's category of teachers' theories and implicit beliefs. Practical knowledge includes teachers' personal knowledge and implicit theories and what they know about practice in complex classroom settings. The third category, pedagogical content knowledge, refers to the knowledge of how content from the disciplines can best be taught to particular students. It is the knowledge that distinguishes the subject matter expert from the expert teacher. These last two categories are most relevant to the focus of this study.

1. Teachers' Practical Knowledge

Freema Elbaz (1981) conducted a comprehensive study of the practical knowledge of a high school English teacher. Elbaz explored through open-ended interviews a view of the teacher as one who possesses and uses a body of practical knowledge which exists in a dynamic relationship to the work
of teaching. It is practical in the sense that Schwab (cited in Elbaz, 1981) referred to the curriculum as practical. It does away with the distinction between ends and means, and it focuses attention on the decision-making and deliberative functions of teachers. It is dynamic because it is not only knowledge of practice, but also knowledge mediated by practice. Elbaz contended that teachers hold and use their knowledge in particular ways that characterize their own "cognitive styles" (p. 62). Teachers' knowledge, she maintained, cannot be understood solely in terms of its content, but must be studied in use with attention given to the deliberative processes involved in teachers' decisions.

Elbaz (1981) considered three aspects of practical knowledge. First, she analyzed its content and defined five categories of knowledge: knowledge of subject matter, curriculum, instruction, self, and the milieu of teaching. However, she was more concerned with the orientations within which this content was held and how it was structured and used by teachers. Elbaz identified five orientations which reflect the ways teachers see their knowledge in relation to practice and use their knowledge to meet personal and professional needs. These orientations were orientation to situation, social orientation, personal orientation, experiential orientation, and theoretical orientation.

Orientation to situation was the way Elbaz (1981) referred to knowledge as it is seen by the teacher to be relevant to a particular practical context.
Teachers draw selectively upon their knowledge, including theoretical knowledge, as it serves the needs and purposes of their own teaching situations. Social orientation is the conditioning of teachers' knowledge through interaction with others such as students, parents, or colleagues. Personal orientation is the way in which teachers use their knowledge to meet personal goals. Although these first three orientations are based upon experience, Elbaz used the term experiential orientation to refer to the degree to which the teachers' practices are affected by their own histories, emotions, and world views. Experiential orientation also includes teachers' personal time perspectives and the levels of interest, attentiveness, and spontaneity which characterize their teaching. Theoretical orientation refers to the way teachers see their own knowledge in relation to theory. Examples of teachers' orientation to theory include their ideas of what theory is, what knowledge is valid, and how they see their knowledge and their work in relation to theory.

All of these orientations overlap. Practical knowledge is seen by Elbaz (1981) as "an organized whole, functioning to orient the teacher to her situation and allowing her to act" (p. 60). From within these orientations, teachers draw upon their various kinds of knowledge to guide their practice. Elbaz constructs three levels of generality in teachers’ structuring of knowledge. The most specific is the "rule of practice" (p. 61) which dictates a particular action to address a particular teaching situation or problem. Underlying these rules of practice are "practical principles" (p. 61) which serve
as the reasoning that supports the rule and which can be generalized to similar situations or cases. The most general level consists of "images" (p. 61) of teaching which are often held unconsciously and represent a teacher's implicit beliefs of what teaching should be.

The work of Elbaz (1981) provides a framework for studying how teachers' knowledge is used in practice. Elbaz concluded that the content of teachers' knowledge cannot be separated from the ways in which it is held and used. Teachers' implicit beliefs and theories inform their teaching and are in turn informed by their teaching experiences.

Two other studies of teachers' implicit theories explore how these theories affect the implementation of new curricula. Olson (1981) conducted a case study in which 20 high school science teachers were asked to discuss their work with an innovative science curriculum project. It became clear to Olson that implementing the project posed dilemmas for teachers. These dilemmas were created because there was conflict between the teachers' deeply held beliefs that teacher influence should be high and the expectations of curriculum developers that called for reduced classroom influence for teachers. In the course of the study teachers discussed their practice in the light of these dilemmas and were able to talk about the meaning they attached to what they usually did. When asked to say how they might resolve the dilemmas, they initially suggested hypothetical resolutions they thought would be approved by the researchers. However, the dilemmas were often resolved in an opposite
direction in favor of common practice by changing the language of the new
curriculum to reflect more familiar terms. Olson referred to this as "project
domestications" (p. 265). He concluded that innovators can avoid such
dilemmas by understanding the teachers' language and the particular
circumstances in which they work. He suggested a dialectic approach to
curriculum improvement to eliminate the insider-outsider relationships which
cause innovators to write "idealized curricular systems" (p. 274) and to talk to
teachers in terms that do not correspond to classrooms as the teachers see
them.

Munby (cited in Clark and Peterson, 1986) carried out case studies of 14
junior high school teachers. He found wide variations in the implicit theories
of teachers working in the same school, even among those with the same
subject matter specializations. He identified a set of teachers statements that
expressed principles and beliefs that held significant meaning to teachers
about their teaching practices. Munby believed that these principles and
beliefs helped to explain why a supposedly common curriculum is interpreted
differently by different teachers.

Studies of practical knowledge emphasize the idiosyncratic nature of
teachers' knowledge, beliefs, and theories. Such studies tell us about the types
of knowledge used by teachers as well as about the orientations in which
knowledge is held and the perspectives and attitudes which direct its use.
2. Pedagogical Content Knowledge

Pedagogical content knowledge is concerned with the orientations, content, and structure of knowledge as it is used to translate subject matter from the disciplines into forms students can understand. Lee Shulman (1986) expressed concern that this kind of knowledge had been overlooked in the study of teachers' thinking. Shulman and his associates have been engaged in a program of research aimed at understanding teachers' subject matter knowledge and the role it plays in teaching (Wilson, Shulman, & Richert, 1987).

Shulman's (1987) research has developed in the context of his efforts to identify the content, character, and sources of a professional knowledge base for teaching. Wilson, Shulman, and Richert (1987) have defined this knowledge base as "the body of understanding, knowledge, skills, and dispositions that a teacher needs to perform effectively in a given teaching situation." They maintained that previous research on teaching has focused on teacher behaviors and has neglected the knowledge and understandings that make effective performance possible. The research on teachers' practical knowledge also had limitations in their view because it treated knowledge of the subject matter of instruction mainly as a context variable and failed to recognize how theoretical, as well as practical, knowledge of subject matter informs and is informed by teaching.

A knowledge base for teachers, according to Shulman (1987) would
include as least seven categories of teacher knowledge: (a) knowledge of content; (b) general pedagogical knowledge with an emphasis on broad principles and strategies of classroom management and organization; (c) curriculum knowledge which includes knowledge of appropriate programs and materials for teaching particular subjects; (d) pedagogical content knowledge, the knowledge of how content is transformed to be accessible for learners; (e) knowledge of learners and their characteristics; (f) knowledge of educational contexts; and (g) knowledge of educational ends, purposes, and values, and their philosophical and historical grounds.

Shulman and his associates are most interested in the area of pedagogical content knowledge because it blends the knowledge of the content specialist with the various other kinds of knowledge of pedagogical knowledge, such as knowledge of the learner, knowledge of curriculum, knowledge of context, and knowledge of pedagogy. Pedagogical content knowledge includes not only what teachers know about the disciplines they teach, but also what they know about how to translate these subjects into terms students can understand. It includes for a given topic or subject area "the most useful forms of representation of those ideas, the most powerful analogies, illustrations, examples, explanations, and demonstrations -- in a word, the ways of representing and formulating the subject that make it comprehensible to others" (Wilson, Shulman, & Richert, 1987, p. 114). It also includes, according to Shulman, an understanding of conceptions and misconceptions students of
different ages or backgrounds may bring with them to the subject and how particular students may find specific content easy or difficult.

Grossman (1990) explored the concept of pedagogical content knowledge in case studies of four high school English teachers in their first year of teaching. All four had strong disciplinary backgrounds in English from prestigious institutions. Three of these had completed a university teacher education program and the other three had begun teaching under alternative temporary certification and had had no professional preparation for teaching. Grossman conducted a series of semi-structured interviews using open-ended questions, card-sort activities, and simulated planning exercises to determine the kinds of knowledge they used in their teaching of English. Grossman concluded that, although all the teachers possessed much the same knowledge of English as a discipline, the teachers from the teacher education program were much better able to transform their knowledge in ways that enabled them to interpret it successfully to students. She found that the teachers without teacher education lacked a framework for making sense of how students learn and also lacked a repertoire of instructional strategies that support student learning. The teaching situation called for new ordering of the teachers' disciplinary knowledge and different ways of using it. Their theoretical orientation was almost solely related to theories of English as a discipline; they lacked broader theories of teaching and learning. They were further limited by the fact that their knowledge of student needs, interests, and abilities was
based only on how they themselves had reacted as students. Their knowledge
of teaching strategies was largely limited to their memories of how they had
been taught. As a result, they were unable to transform the subject in terms
that a diverse group of students could understand.

According to Grossman (1990) and her associates (Shulman, 1987;
Wilson, Shulman, & Richert, 1987), what teacher education had provided that
the other three teachers lacked was pedagogical content knowledge.
Grossman’s conceptualization of pedagogical content knowledge included four
components: knowledge of purposes, knowledge of students, knowledge of
curriculum, and knowledge of strategies and representations for teaching.
Each component will be explained further.

The first component includes knowledge and beliefs about the purposes
for teaching a subject at different grade levels (Grossman, 1990). The ways in
which teachers conceptualize their subjects determine the goals they have for
students and the priorities they have for selecting the disciplinary content for
instruction. For example, two of Grossman’s subjects viewed the purpose for
instruction in English as teaching students to analyze text. In contrast, the
other four teachers saw their primary purpose as encouraging students to
relate to the text in personal ways.

The second component of pedagogical content knowledge includes
teachers’ knowledge of students’ understanding, conceptions, and
misconceptions about subject matter (Grossman, 1990). Part of this is
awareness of students' prior knowledge of the subject and of what aspects the students are likely to find difficult. Teachers need to know what strategies students are likely to use to learn and solve problems and what kinds of mistakes they are likely to make. This kind of knowledge is also inherent in Dewey's reminder to "psychologize" the disciplines (Wilson, Shulman, & Richert, 1987, p. 106).

The third component of pedagogical content knowledge is the knowledge of curriculum materials and knowledge about the vertical and horizontal curricula for a subject (Grossman, 1990). For example, teachers should know what books and topics are usually studied at a particular grade level, as well as what materials and topics precede and follow them. This knowledge comes from an awareness of the structures of disciplines and from information about what is taught at other grade levels in the educational sequence.

The last component of pedagogical content knowledge is the knowledge of instructional strategies and representations for teaching particular topics (Grossman, 1990). This kind of knowledge is highly dependent on other kinds of knowledge. In order to effectively represent subject matter to students, teachers must draw heavily on comprehensive knowledge of their disciplines and on the cognitive capabilities, interest, and prior knowledge of their students. Finally, it is essential that they have developed a wide repertoire of methods of presenting and talking about content to a diverse group of students (Wilson, Shulman, & Richert, 1987).
The work of Shulman, Grossman, and their associates is representative of an emerging interest in pedagogical content knowledge. This work has been particularly active since 1985 (Carter, 1990). This work has, by its nature, been carried out in the context of specific content areas. A few examples will be briefly summarized.

Grossman (1990) studied the pedagogical content knowledge of English teachers. Gudmundsdottir (1990) conducted case studies of veteran teachers of history and English. Her conclusions, similar to those of Grossman, were that teachers' disciplinary backgrounds and their value orientations to their subject matter influenced their choice of content, their use of the textbook, pedagogical strategies, and the ways they perceived student needs.

Wilson and Wineburg (1988) studied four novice social studies teachers from academic backgrounds which stressed widely different approaches to their subject matter. These varied disciplinary perspectives caused the four teachers to focus on the teaching of history in different ways. One, for example, looked at history through the lens of an anthropologist and another saw history from the perspective of international relations and political science. For the teachers in this study, knowledge of the subject matter was "as much a product of their beliefs as it was an accumulation of facts and interpretations" (p. 537).

A representative study of pedagogical content knowledge in the area of mathematics was conducted in 1988 by Carpenter, Fennema, Peterson, and Carey (cited in Carter, 1990). Carpenter and associates studied 40 first grade
teachers' knowledge of distinct types of addition and subtraction problems, their understandings of the strategies used by children to solve these problems, and the teachers' ability to predict how successfully students would deal with the problems. The study found that although teachers had knowledge of the distinctions among different types of problems, this knowledge was not linked to their ability to predict student difficulties. However, the teachers' ability to predict the probability of student success or difficulty was significantly related to student achievement.

Related studies have looked at how mathematics teachers' knowledge of their subject matter is translated into classroom instructional activities. Studies by Leinhardt and Smith (1985) and a 1985 study by Steinberg, Haymore, and Marks (cited in Carter, 1990) demonstrated relationships between the level of teachers' disciplinary knowledge and the strategies and routines they used in classroom instruction.

Summary

The review of teachers' knowledge that has been presented here is not an exhaustive one. The purpose has been to provide a background for understanding the kinds of knowledge teachers might draw upon in creating and interpreting curriculum for students. The studies of teachers' practical knowledge and of pedagogical content knowledge represent two broad
approaches to understanding this knowledge. Taken together these two approaches suggest that teachers' knowledge of and orientations toward their disciplines, as well as their personal and experiential knowledge of teaching, greatly influence the kinds of curriculum that are enacted in their classes. Any study of teachers involved in curriculum development must take into account such knowledge as it informs and is informed by the curriculum-making process.
CHAPTER III
RESEARCH METHODOLOGY

POINT OF VIEW

My interest in teachers' construction of curriculum stems in large part from my experience as a classroom teacher. I am intrigued by the complex process by which knowledge from the college classroom, knowledge and beliefs about students, assumptions and knowledge about the content and structure of disciplines, and the life experience of the teacher come to be integrated into the whole practice of teaching. Another area of vital interest to me is the relationship of teachers' values to the delineation of the knowledge that is acted upon, since I have observed that two teachers may often link elements of knowing in different ways, causing different courses of action to be justified by the same broad knowledge base.

My decision to focus my study in the middle school comes from knowledge gained as I grew with my own children and their friends during this stage of development and from my experience as a sixth grade teacher. I have a strong interest in making middle school education serve the needs of young
adolescents and of society, and I believe that success in this task depends largely on the knowledge, beliefs, and skills of teachers.

EPISTEMOLOGICAL ORIENTATION

A study of teachers' curriculum knowledge and decision making raises important epistemological issues. What do we count as knowledge? In what form does such knowledge exist and what is its relationship to the experience of practice? Tom and Valli (1990) have described three epistemological orientations from which one might understand the nature of teacher knowledge and the knowledge/practice relationship. The positivist orientation leads one to look for context-independent generalizations that can be applied in a lawlike way to a wide range of teaching situations. This orientation assumes that the teacher will provide the judgments about which statistically based rules apply at a given time. In contrast, the interpretive orientation rejects the idea that knowledge can be understood apart from the meanings individuals construct in particular cases and how they value such meanings. Knowledge, from this perspective, always depends on context. The critical orientation goes beyond recognizing the interrelationship between knowledge and values by placing values at the center of what it is to "know". Those committed to this point of view share the belief that all knowledge serves to advance the interests of particular groups or individuals. Those who work within the critical
orientation are committed to certain values, usually having to do with social or educational reform, and seek to resist the status quo.

This study falls within the interpretive orientation described by Tom and Valli. It is essentially a constructivist view which takes into account the multiple realities experienced by teachers in order to gain more understanding of how they value various kinds of knowledge and of the relationship of this knowledge to the contexts in which they teach. It seems important to me that such an inquiry be open to the ways that the teachers structure and express their knowledge and beliefs. Even though I was aware of much prior work that has categorized knowledge about adolescents and then developed recommendations for their education, I wanted to be able to put aside the assumptions suggested by this literature and allow my informants to speak for themselves.

For this reason, the methods used for data collection were primarily interviews, and participant observation. This means also that I avoided using reporting instruments with standardized statements drawn from the literature which may not represent particular teachers' individual perceptions in language meaningful to them. In addition to problems of language and interpretations of meaning, such instruments are also problematic because they may encourage teachers to endorse items they perceive to be popular or politically correct (Kagan, 1990). This became evident to me during the administration of a pilot survey that I had developed to measure the degree to
which teachers valued certain elements frequently identified with successful middle schools. Although there was high agreement on survey items themselves, my conversations with respondents led me to believe that the survey statements oversimplified topics that were complex in the experience of teachers. Such generic statements, however well-founded in the literature, simply were inadequate to reflect the variety of constructions and qualifications teachers might place on them. The need for a more open research design was further indicated by respondents’ reporting concerns and categories of knowledge not included in the survey.

RESEARCH DESIGN

This study was based on case studies of the three teacher participants. This approach was preferred to other methods such as the pilot survey described earlier because case studies offer more opportunity to examine the teachers’ knowledge and beliefs as they were embedded in their making of curriculum (Clandinin & Connelly, 1992). I was less interested in teachers’ verbal support of specific elements of propositional knowledge or knowledge of specific content than I was in the way this knowledge is held and used in relation to action/practice (Elbaz, 1981; Shulman, 1987) and how teachers represented this knowledge in their own language (Yinger, 1987; Connelly & Elbaz, 1980).
Case studies also permitted a more useful understanding of middle school curriculum development than could be gained from documents and surveys which describe curriculum intentions and recommendations. Schwab (1970) has asserted that "the curriculum is brought to bear, not on ideal or abstract representations, but on the real thing, on the concrete case, in all its completeness and with all its differences from all other concrete cases, on a large body of fact concerning which the theoretic abstraction is silent" (p. 26).

**SELECTION OF PARTICIPANTS**

The participants in this study were a group of three sixth grade teachers who work as a team in a middle school located in a formerly rural area which has been experiencing rapid growth and urbanization. They were chosen because they are engaged in an ongoing program of collaboration in order to plan and implement an integrated curriculum based on themes derived from the needs and interests of young adolescents. This study attempts to take advantage of a rare opportunity to look closely at the work of teachers involved in curriculum change.

All three of these teachers brought to their team effort a rich background of education and teaching experience. All have elementary certification, and all have received master's degrees from the same state university. Janis has earned a Principal's Certificate as well as additional
endorsements in Reading and in Learning Disabilities. Mark holds a Supervisor's Certificate. Janis and Peggy have taught at Eastman School thirteen years and nine years respectively, and Mark has taught there for two years, after spending seventeen years teaching in a nearby elementary school.

These teachers also represent a higher than usual degree of participation in professional work outside the classroom. During the study Peggy was president of the local teachers' association. Mark has served as president, vice-president, and contract negotiator for the association. Peggy and Janis have also worked in professional groups outside their district. Peggy is cochair of a panel for revision of state standards and outcomes, and she represents her district in coordinating the role of professional development schools with the university. As a member of state and federal task forces, Janis has taken an active role in developing programs for developing peer leadership and preventing drug and alcohol abuse. As part of this work, she trained other teachers to carry out the goals developed by the task force.

These teachers are somewhat atypical in their levels of education and professional experience. This seems likely to be true in general of teachers who would undertake such an ambitious effort toward curriculum change. It is not a disadvantage, however, for the purposes of this study because the intent is, in part, to examine how the teachers draw on their knowledge and experience in their collaborative work. By selecting teachers who are well-prepared and supported in their work, we gain insight into what collaborative
curriculum change can be like in favorable circumstances.

Although it was not originally planned that the principal would be part of the study, it was evident early that he was an important participant with whom the teachers worked closely. Steve, who began his career as a middle school teacher, was an assistant principal at Oak Grove for five years and then an elementary school principal for nine years. He returned to Oak Grove as principal eight years ago and began quickly to work with the staff in making changes that he felt were responsive to young adolescents' needs. He explained that the move toward interdisciplinary teaming was part of that effort. In order to see the curriculum change process from his perspective, I decided to interview him at the beginning and at the end of the study.

RESEARCH CONTEXT

Oak Grove Middle School, with approximately 750 students in grades seven and eight, occupies a large two story brick building constructed when the school served a small village and farm community. Now the town has grown to more than 26,000 people and has become, in effect, a suburb of a large adjacent midwestern city. The accompanying changes to the community are visible, not only in rush hour commuting traffic, but in a larger and more diverse student population.

Inside the traditional building three sixth grade teachers have been
working together to design and implement an innovative curriculum. Their stated goals are to combine their interest in Outcomes Based Education with recommendations for an integrated curriculum. The most influential of these recommendations has been James Beane's proposal for a problem-centered core curriculum planned around the needs and interests of early adolescents. They envisioned a truly integrated curriculum in which students would have a voice in choosing the content they learn, in which multiple assessment measures would be used, and in which evaluation of learning would be based on broad predetermined outcomes, rather than on a traditional grading system.

The sixth graders, about 80 students, were assigned to three homerooms which rotated so that every child worked with all three teachers during the day: Teachers were not identified with specific content areas. Instead instruction was organized around broad integrated units, and teaching responsibilities were divided among the teachers according to convenience, interest, and expertise. These units, outlined in general terms before school began, were developed more fully as the year went on. Instructional content was collaboratively determined by the team, and increasingly students were included in planning what would be learned. The daily schedule was flexible and varied day by day according to need. It is important to note that the team was not required to adhere to any course of study, textbook series, daily schedule, or grading system. The remarkable autonomy they were granted made possible a high degree of curricular innovation and experimentation.
These teachers have worked toward creating a middle school curriculum drastically different from that which currently existed in their school. The task they undertook demanded that they translate desired curriculum goals to their own unique teaching context. They were therefore both creators and implementors of curriculum. Their task involved both curriculum purposes (ends) and the practical ways of achieving these purposes (means). This kind of curriculum responsibility fits well within the view of teacher as curriculum makers expressed by Zumwalt (1989), Bolin (1987) and others.

The more usual pattern of teacher involvement in curriculum work is to enlist teachers' support of the goals of externally developed curriculum and then train them to implement predetermined instructional strategies (Bolin, 1987; Clandinin & Connelly, 1992). The work of the teachers selected for this study offers an opportunity to look beyond the "conduit" metaphor (Clandinin & Connelly, 1992, p. 364) to a real curriculum-making role for teachers.

**DATA COLLECTION**

Participant observation served as the framework for data collection strategies. Denzin (1989) has defined participant observation as "a field strategy that simultaneously combines document analysis, interviewing of respondents and informants, direct participation and observation, and introspection" (p. 157-158). According to Erickson (1986), participant
observation is most appropriate when the need is to learn more about:

1. The specific structure of occurrences rather than their general character and overall distribution;

2. The meanings and perspectives of the particular people involved in particular events;

3. The location of naturally occurring contrasts that can be observed when we cannot ethically or logistically control experimental conditions of settings or treatment interventions;

4. The identification of specific causal linkages that were not identified by experimental methods, and the development of new theories about causes and patterns revealed by survey data or experiments.

The use of participant observation represented a choice to investigate teacher knowledge and curriculum development as an on-going process. Participant observation, according to Denzin (1989), is especially well suited to the analysis of forms of interaction that are in change. Zumwalt (1989) stated that "curriculum is an evolving construct which has individual as well as shared meanings" (p. 181). Because knowledge is always informing and being informed by experience, it is never static and cannot be captured in any complete sense by abstract expressions. Doyle (1990) argued that teacher knowledge is "highly tentative, situational, idiosyncratic, intuitive, and
embedded in the particulars of practice" (p. 13).

Four participant-observer roles have been identified by Denzin (1989): the complete participant, the participant as observer, the observer as participant, and the complete observer. These roles represent a continuum of varying degrees of researcher involvement in the interactions under investigation. The role of the researcher in this study is that of participant as observer. In contrast to the complete observer, participants as observers establish their research presence openly and attempt to establish relationships with the subjects who become informants. The researcher is not a member of the group being studied and does not participate fully in their experiences. However, the involvement of the participant as observer is characterized by significant and repeated interactions with the respondents in order to understand their experiences and perspectives. Fetterman (1989) described well the advantages of adopting this research role. He stated that participant observation "combines participation in the lives of the people under study with maintenance of a professional distance that allows adequate observation and recording of data" (p. 45).

Interviews

Data were collected during teachers' summer planning meetings and continued throughout one complete school year. Data collection methods
included observation, interviews, and document analysis. My choice of in-depth interviewing as a major strategy for data collection was consistent with my desire to be open to the constructions of the respondents by allowing them to take part in shaping the content of the interview (Bogdan & Biklen, 1992, p. 97). The interviews were semi-structured, using the "general interview guide approach" (Patton, 1990, p. 280).

Interview guides included lists of questions or topics to be discussed during an interview. These guides focused the discussion on topics which related to the primary research interests, but specific questions varied in their wording or sequence within the interview. The use of interview guides insured that comparable data was obtained from all subjects and facilitated the task of data analysis. Other advantages of the guides were that the interviews could remain conversational and that questions could be adapted to be meaningful to individual informants (Patton, 1990).

The first interview was be largely exploratory in nature, initiating discussion by using open-ended questions suggested from the research questions stated at the beginning of this proposal. The intent was to understand the perspectives of the individual teachers toward middle school curriculum, the progress of the current curriculum change project, and their roles in this restructuring effort. I hoped that the use of unstructured interviews at first would give respondents a voice in choosing what was important to talk about and that, as a result, semistructured interviews used
later in the research process were more likely to be consistent with teachers' own perceptions, rather than with my own (Fetterman, 1989).

Succeeding interviews were based on the data that came out of the initial interview, ongoing observations, and the need for specific information related to the research questions. Following the exploratory interview, I conducted three interviews of about one hour with each teacher. These interviews were also semi-structured using interview guides focused on topics and issues derived from the literature and from conceptualizations emerging in the course of the study. These interview guides were constructed as the study was in progress in order to respond to the emerging nature of the study. Too rigid an adherence to the initial questions could have limited the amount and type of data gathered and prevented the researcher from responding to relevant data that arose in the field (Strauss & Corbin, 1990).

Observations

The interviews were accompanied by ongoing field observations throughout the school year. These observations were of two main types. The first was observation of classrooms. I spent at least one morning each week watching the teachers in their daily work with students. One purpose of this was to see how the meanings inherent in teachers' talk about their work found their expression in their teaching and interactions with students. A second
purpose of these observations was to gather more data which in turn suggested developing patterns to be further explored in subsequent interviews. These classroom visits gave me a closer look at the complex nature of teachers' work and the variables that affect their thinking about teaching. The relationship between interviews and observations provided desirable conditions for a "continuous movement between emerging conceptualizations of reality and empirical observations" (Denzin, 1989, p. 158).

Daily and weekly planning sessions held by the teaching team offered other opportunities for observation. The frequency with which I attended these was determined by the day-to-day relevance of the agenda to the purposes of the study. I was present during the teachers' planning period at least once each week during the first semester of the year. I also attended and selectively transcribed eight planning sessions of two hours or more at intervals throughout the year and an end of the year meeting in which the teachers and principal evaluated the year.

Other occasional opportunities for observation were taken advantage of as these arose. Examples of these included being present during some parent/student/teacher conferences of a nonconfidential nature, attending meetings in which teachers explained their curriculum work to other teachers and to parents, observing student work, and interacting informally with students and teachers.
Documents

I made use of many informal documents generated by the teachers in their planning process. These included organizational plans and outlines of curriculum content, lesson plans, lists of desired learning outcomes, and communications to parents. I also collected samples from student journals and examples of student work relevant to interview data.

Also, during the first month of school the teachers kept reflective journals daily at school while students were also engaging in journal writing. The purpose of the teachers' journals was to record their progress in curriculum development as they saw it and to note problems and needs that needed to be addressed. These journals helped to generate interview questions.

DATA ANALYSIS

Data analysis involved an effort to identify themes and to construct hypotheses as they were suggested by data and then to demonstrate support for those themes and hypotheses (Bogdan & Taylor, 1975). Although I approached the inquiry with some tentative questions, the way that my respondents perceived the world made other questions important also. Not only do people have different interpretations of experience, but they identify different facets of experience as important. To begin with preconceived
structures for explaining teachers' experience would have been to distort their realities by forcing it into congruence with my own or that of some other authority. For this reason, the organization of the data emerged from the data itself. In identifying concepts and theorizing about relationships among the data, I have drawn heavily from the analytic procedures for generating grounded theory developed by Strauss and Corbin (1991).

The analysis of data was an ongoing process from the beginning of the study. The initial interviews were examined in order to find patterns or recurring themes that suggested working hypotheses to be explored in later interviews or classroom observations (Bogdan & Taylor, 1975). Interviews and observations of team meetings were used as primary data sources. Observations of teaching provided necessary understanding of the research context and served as corroborating data for emerging hypotheses.

An important part of this ongoing analysis was the keeping of a researcher's journal throughout the study. In this journal I recorded personal impressions during observations, insights about emerging data, and ongoing evaluation and evolution of questions and hypotheses. The journal will serve another important function in establishing the dependability and confirmability of the study by fulfilling the responsibility of researchers to carefully monitor and leave a record of their procedures and analytical decision processes (Guba & Lincoln, 1989).

After each interview or observation, data was analyzed and coded in a
preliminary way. Tentative categories were identified in order to organize data conceptually. When all interviews and observations were completed, transcripts were reviewed and compared in order to generate final categories to account for all the relevant data. This review process began with reviewing data for each individual, coding and recording themes and patterns as they related to research questions. Then the data for individual cases were compared with each other for similarities and differences (Patton, 1990). Demographic data was examined for correlations with results of crosscase comparisons.

VALIDITY ISSUES

Guba and Lincoln (1989) have asserted that in the framework of a constructivist inquiry such as this one, traditional issues of internal and external validity, reliability, and objectivity are more appropriately addressed using parallel criteria of credibility, transferability, dependability, and confirmability.

Credibility

Credibility is parallel to internal validity, but the focus has been moved from examining the correspondence of the findings with objective reality, to verifying the match between the constructed realities of the respondents and
the ways in which the evaluator perceives and represents those realities. This study addressed credibility in several ways suggested by Guba and Lincoln (1981,1989):

1. Member checks are the most crucial technique for ensuring credibility. These included clarifications of questions during and after the interviews, and the sharing of transcriptions, selected hypotheses, findings, and interpretations with respondents.

2. A record of progressive subjectivity through field notes and the researcher's own journal

3. Prolonged engagement (one year) and persistent and frequent observation

4. Triangulation techniques using a variety of data sources (interviews, observations of classrooms and team meetings, journals, and other documents)

Transferability

This parallel to what is usually called external validity is not intended to establish generalizability in the usually accepted sense. Since context is essential to meaning in interpretive research and since every situation possesses similarities and differences with other situations, it would be inconsistent for me to make any claim about the representativeness of this study. It will be left to those who read this research to determine to what
extent it is consistent with other situations (Guba & Lincoln, 1989). The detailed descriptions of participants and contexts will help others evaluate for themselves how my findings might relate to their own questions.

Dependability and Confirmability

Dependability is parallel to the conventional goal of reliability and is concerned with the stability of the data over time. Confirmability is concerned with the degree to which the findings are rooted in the data rather than only in the imagination of the researcher. Dependability and confirmability are discussed together here because they have been addressed primarily by providing a documentation of the data collection and analysis techniques so that a disinterested person can assess their adequacy. Because of the emergent nature of this study and also because the thinking of the teachers will never remain static, reliability in a conventional sense would be impossible to achieve. Also, the constructivist assumptions which guide this study reject the idea that the research findings can ever be divorced from the meanings attached to them by the participants and by the researcher.

What the researcher can do to establish dependability and confirmability, however, is to make public the methods and data used in the inquiry process. This record will be provided by the researcher's journal, the triangulation of data, and member checks. Also fellow doctoral students have served as peer debriefers to check the adequacy of the research process and to
confirm that coding categories are grounded in the data.

**ISSUES OF REFLEXIVITY AND TRUST**

A major concern of mine throughout the planning of this study has been the question of "What's in it for them?" In other words, I believe that the researched should benefit in some way from the research process. This study, like most, makes demands upon the participants in terms of time and privacy. Perhaps more important is the expectation that the participant will share personal beliefs and knowledge and will put professional skills on display. This is asking a lot because, in spite of all my disclaimers about not assuming an evaluator's role, there is a lot of trust involved in putting oneself "under the microscope" of a fellow professional.

With this in mind I have tried to examine my assumptions about my role and the role of the teacher respondents so that I can build as much reciprocity as possible into the research process. Susan Noffke's work on curriculum inquiry with teachers has had particular relevance for me (Noffke, 1990). Like Noffke, my experience as a classroom teacher has influenced my thinking about the teacher/researcher roles. An undergirding premise of my study of teacher knowledge is that teachers have knowledge that is worth relating and that I cannot gain access to this knowledge outside the context of these teachers' experience. Therefore, an essential feature of the research
process must be a respect for teachers as persons and as professionals. The problem was how to translate this respect into the way I actually did the study.

I have addressed this issue in several ways. The first of these was involving teachers as much as possible in the planning of the study. In my initial discussions of my research questions with teachers I asked what they would like to learn from such a study and I have tried to incorporate their concerns into the research as much as possible and to share with them what I learned. By this I am acknowledging that they have a stake in the improvement of their own profession. As the study progressed I involved teachers through member checks to be sure I interpreted them correctly. I have also asked them to react to developing hypotheses as they emerge. This has helped me by checking the overall credibility of my theorizing and I hope it has helped them in thinking reflectively on their practice.

The teachers reported that their professional reflection was facilitated by the interview process. The presence of a researcher may have caused teachers to be more conscious of previously unexamined practices and to clarify their beliefs in order to articulate them to me. Finally, it is hoped that the research process itself served in some measure as validation for the teachers' curriculum change efforts.
CHAPTER IV
PRESENTATION AND ANALYSIS OF DATA

Case Study: Peggy
Becoming a Team Member

Peggy's undergraduate teaching experiences were in the primary grades. After graduation, however, she was at first unable to find a job. The first full-time position she was offered was at Oak Grove Middle School.

After I got the job, I said, "By the way, what will I teach?" [The principal] handed me an English book and that was my career as a middle school teacher--no background in middle school whatsoever, no desire to teach in middle school whatsoever.

Peggy has taught at Oak Grove for the past nine years. She explained that her knowledge and interest in middle school curriculum change developed gradually from a need to grow professionally. She first encountered middle school literature when she was searching for new ideas about assessment and noticed articles about middle grades assessment. She began looking for more articles about middle school and "started reading and thinking."

About the same time Oak Grove established a relationship as a professional development school with a local university. Peggy reported that the staff began to consider questions such as "What makes us a middle school?"
What's a middle school philosophy?" "What are we about?" In search of knowledge to address these questions, Peggy contacted a university professor who gave her books about middle schools. Steve, the principal, was also giving her middle school literature. One book that greatly impressed her was *Rhetoric and Reality: A Middle School Curriculum* by James Beane. "And I read that book which is very short and easy to read and I went, "This is it!" She took the book to Steve and said, "Steve, this makes sense."

Peggy believed that Steve knew she would be interested in participating in an innovative program for middle school change. She had told him that she was getting bored and was looking for a new challenge. "Steve always has a hand in things. This really seemed to evolve as a very grassroots kind of thing, but he has this grand plan in mind." When Peggy told Steve about a conference organized by James Beane, Steve found grant money to enable her to attend. Peggy said, "He knew very well I was going to come back all fired up..." She said they had many discussions about which teachers might want to implement with her the curriculum ideas she been forming.

And I know he knew in the back of his mind that Janis and Mark would be the ideal people to work on this...because they're already child-centered and they both look at teaching the child as opposed to teaching their subjects and they're very flexible--both, I think, risk-takers, and those were qualities that we needed anybody to have to be willing to do this.

Peggy and Janis had worked on the same team last year and had tried to make connections between the subjects they taught. "And I knew that I could work with her, and I knew that I liked her and that she did have a sense
of where kids are coming from." Peggy didn't know Mark very well, but she believed he "definitely had the flexibility and the student-centered part of it." Peggy hoped to put into practice her ideas for an integrated middle school curriculum and her belief in "authentic assessment." She was willing to do this within her own classroom if necessary, but she agreed with Steve that it should ideally be a team effort.

"Yes, I wanted to do it for very selfish reasons. I needed that shot in the arm for myself. But also I felt this is just so good that I need to have somebody that wants to share this with me and do this with me."

In addition to improving her own classroom practice, Peggy had another reason for pursuing middle school curriculum change. She cited local political pressure to preserve the identity of Oak Grove Middle School when the grade configuration changes next year.

As it becomes a five-six building, we want to establish a middle school identity and show that middle school works and it works for all different kids and it's not a bad thing. And I think latching on to this and developing it assures that we're not going to have to become an upper elementary school in a couple of years.

For Peggy, therefore, the formation of the Integrated Team offered a chance to put into practice the educational theories she was developing and to do this with others who shared her child-centered approach. She also looked forward to a new professional challenge. Finally, there was a political motivation which was important to her.
Focusing on Preadolescent Concerns

Peggy explained her beliefs in child-centered curriculum from her perspective as a whole language teacher.

My primary influence came from...my philosophy of language arts--about it being student-centered, student-driven, meeting kids's needs, giving kids choices, giving kids a voice, using literature and wanting to go beyond the classroom and connect with the real world.

A whole language approach, in Peggy's opinion, was consistent with "a whole child approach, looking at them socially and emotionally and academically and the affective and the cognitive and the whole ball of wax."

Peggy stressed that being child-centered in middle school means addressing the unique needs of preadolescents. "It's about a deep commitment to some serious beliefs about how you think children learn best at this age and the kind of interaction you have with them as people. "I think it's very relationship-oriented." Discussing specific preadolescent needs, Peggy said, "They want to be treated like adults...And I tend to talk to them like adults,...but there's a danger in forgetting that they're still children...so it's a real fine line to walk."

Peggy was also concerned because preadolescents are becoming involved with high-risk behaviors at increasingly younger ages.

Adolescence is where they really start getting into issues with sex and drugs and experimentation kinds of things. And a lot more
of that's on their minds than people realize, and it's easier to address it head-on with them than to try and push it under the carpet and pretend it's not there.

The necessity of dealing with these issues means to Peggy that she must attend constantly, not only to the cognitive needs of students, but also to their affective needs.

I think...if you are really a middle school, that's a part of everything that you do all of the time and it's not separated out. It's inherent to the way you interact with children and they learn to interact with each other.

Touchy stuff comes up with this age. If you develop that trust they'll tell you more than you want to know and you've gotta know how to handle it, deal with it.

An important way of dealing with the issues and concerns of preadolescents, Peggy determined, was to make them the focus of the curriculum. "I have always tried to make language arts more than just English and fit it in with the world and what kids are interested in, and that balance I developed through working with kids came into play very heavily here." Peggy referred in interviews and in team meetings to how the conceptual structure of the integrated instructional units planned this year responded to preadolescent concerns about themselves and their relationships with others.

That's where we got these three levels [of curriculum focus]. The one was about self and then it went out to community and society and then it went out to global. And when we got to the global level we wanted the adolescents to see how they fit into the world because that's a real concern of adolescents. "Why am I here? How do I fit?"
In observed team meetings, for example, Peggy discussed how she saw the unit on Families developing within this conceptual frame because the emphasis was at first on individuals and then on relationships with others and then on issues affecting families throughout the world.

Preparing for the Real World

Peggy's team assessed student learning in terms of broad outcomes they have established as curriculum goals. These outcomes are formulated in terms of processes and skills rather than in terms of a list of content knowledge. "We said to ourselves, 'What is it that we expect our kids to know and be able to do and feel like by the time they leave our grade?'" Peggy said that her team can assure parents that from years of teaching experience "we do know what sixth graders need to know and we are making sure that they get those skills and abilities that they need to progress to seventh grade." But she maintained that "in our new age of technology and information, memorizing facts isn't going to get you anywhere" because what is learned may soon become outdated. "It's old news. So we're really about teaching kids to think and access and find the knowledge that they need." Peggy said they chose only that content that furthered the desired outcomes.

"As far as content being tied with outcomes, we can really take any form of content and it's the way that we look at the content and construct the activities that make them lead toward the outcomes."

Because if it didn't have something to do with problem-solving...or
communication or groupwork or all these things that we said are real key components to what we think kids should accomplish at this age level then it wouldn't make any sense for it to be there.

Peggy believed that this approach to curriculum content, rather than being "contrived, artificial, and constraining," was responsive to the needs of preadolescents. "They're really what it's about if you're preparing somebody to live in the real world."

Empowering Learners

According to Peggy, the curriculum was framed, not only in a broad way around preadolescent interests and concerns, but with the intention of giving students some control over what they studied.

The content came from the kinds of things that the kids had voiced an interest in before we talked to them, but ...it was also structured in a way that the kids had ownership and input and they served as the knowledge base on which I could build.

Peggy described several advantages of giving students ownership. One of these was that content was more likely to engage students and take into account their existing knowledge. For example, Peggy recalled that when they began the Environmental Unit, they asked students to list their questions and concerns about the subject and to identify topics to focus on and study.

We've been taking little steps of bringing our kids more into the process and this time it came from them. We went to them and said, "What do you want to know about? What do you want to learn?"

And they have a lot more background knowledge and terminology kinds of capabilities than we would have known. If we hadn't
done that first, we might have been teaching them something that they already knew and we wouldn't have been able to go beyond into the kinds of things that we are.

Peggy's belief in giving students ownership of learning also shaped her thinking about her role as a teacher.

Because we're not the all-givers of knowledge that know everything. We are facilitators....We don't have to find expertise and give it to them. We give them tools with which to think, to find information and make sense of it.

Peggy reiterated frequently her concern to get information sources into students' hands and avoid reverting to a lecture format. "I could find some neat articles that I could zerox and let them do some reading and working with these. I don't have the materials. I've just gotta find some. Otherwise I'm going to end up lecturing."

Peggy wanted also to empower students with a sense that they themselves possess valuable knowledge and experience. She encouraged them to use each other as knowledge sources. She was pleased when during a midyear assessment students wrote, "You can learn things from other people. Other people have experiences. It's not always just the teacher. We have knowledge too." At the same time she wanted them to take responsibility for completing their work and for working with others. "It's real tough to turn the responsibility back to them but you sort of have to."

Peggy's sense of the importance of empowering learners was expressed in other contexts. "And then I started venturing into professional development of educators and I saw those same sorts of issues. Professional development
with educators needing to be teacher-directed, and who knows best what they need than teachers?" Peggy felt that empowerment was an important issue in "how people learn and what best facilitates that learning."

Making Sense of It

When Peggy talked about active learning she was not only referring to students' physical movement, but was talking about students' actively accessing, processing, and sharing knowledge. She believed that it was important to get students "involved in thinking and asking questions". This belief was evident when she explained her choice of teaching materials and the ways she carried out lessons. For example, she explained why she provided tradebooks for student use.

Well, I guess we wanted real world stuff instead of textbook material...It's at a more challenging level for them to have to access the information than just read it. In most of the textbooks you look and there's a question here and right across from it is the answer. It's really not thinking.

Somebody else has already accessed the information [in textbooks]. They're just reading it. Here they've got to pull it together and make sense of it.

During the year's observations of her class, Peggy's students were asked often to generate questions, to hypothesize about answers, and to access information to check their hypothesis. She talked about one lesson that she considered especially successful.
The first lesson where I really just dug through the resources that I had and posed some questions such as, you know, "How old is the earth?" and "Where did all these people come from?"...and "If there were dinosaurs, where did they all go?"...I gave those to the kids, let them work on them in small groups, come up with things to share out as a class, discuss when they shared out. "Does that make sense?" It really got them fired up. They were chomping at the bit to get to the next part, to find out some of the answers to these hypotheses.

In later units, Peggy reported that students generated the questions to be explored. However, rather than immediately looking for the answers, students were asked to categorize their questions and think of ways they might learn about the topics. Finally, students had to work cooperatively to create demonstrations of their learning.

...There are so many more opportunities for them to show how they can learn besides paper and pencil, when you integrate and make sense and take things as a whole and do demonstrations. So instead of expecting kids to memorize and spit information out, we expect them to organize and make sense of and create and do and communicate.

Curriculum Knowledge

A Theoretical View

Peggy described herself as "the conceptual person" on the team.

I've always been a real conceptual type person to the point where I get teased a lot about being too theoretical. I love theory. I love to play with those and come up with a concept.

What Peggy considered to be valid knowledge about curriculum has been influenced, she explained, by the theoretical content of her university coursework. When she was asked to define curriculum, Peggy credited two
university professors with helping her to develop her definition.

Well, it’s definitely not a course of study listing skills and names of books and concepts to be covered. I think curriculum...is a mental scheme...Real curriculum is a framework. It’s a sense and a direction and a vision...But beyond that, I think it’s a living, breathing, unfolding thing that happens not on your lesson plan book and not in a course of study and not even on that framework. The framework is a way of showing it mentally, but I think it happens in the classroom. It’s created with teachers and kids working toward a vision and idea together.

Peggy’s view of curriculum as an unfolding creation is consistent with the way the team planned for the year. During a planning meeting which preceded the school year, Peggy said that although they had tried to plan out the year and what a day might look like, the whole curriculum would be evolving. The "mental framework" for the curriculum she envisioned was a progression from concern with self, to societal concerns, and finally, to concern with global issues. Within each unit, the team also had to divide the teaching responsibilities.

"And then the next step that we always do once we get all this content is try to think of some way to frame it out. How are we going to make sense of it looking at it from three different angles--three different lenses? And that’s the conceptual piece that has to happen to have it make sense.

Peggy acknowledged that planning as they went along could be "a little uncomfortable, but after you get through the year you know an awful lot more." However, she did not anticipate that this year’s experience would mean that next year would unfold in the same way. Different students, she believed, would have different knowledge and interests which would dictate that the
topics of study, the details of the framework, needed to be developed in new ways.

Just as the larger curriculum evolved during the course of the year, the curriculum emerged on a daily basis in Peggy’s classroom. She described how she made broad plans for the lessons in which students hypothesized about the prehistoric era.

I kind of knew the content that I wanted to cover. I had some books. I had some things mapped out as to how I thought things could unfold making some sort of logical sequence and some sort of working up to more difficult tasks. As students were brought increasingly into the planning process, they made choices about what questions to answer and how to demonstrate their knowledge.

Although details of planning might be done on a short-term basis, Peggy kept in mind the team’s overall conceptual outline for the year. Typical was this question during a team planning meeting. "Okay where are we headed for core in the future? Let's look at our frame so we know what direction to head in?" The curriculum knowledge that was important to Peggy was the conceptual framework that guided instruction as well as the way the framework was developed through teacher/student interaction.

If curriculum is organized around a conceptual framework and is constructed by teachers and students, as Peggy believed, then teachers have an active role as curriculum agents. Peggy complained that too many teachers lack confidence in their abilities as curriculum planners. She recalled, "What
I heard people...wanting from this conference was 'Give me a cookbook and tell me how it's done. This is a wonderful concept and idea, but what are the steps that you take to get there?' Peggy said that, while there is no "cookbook", teachers have more curriculum knowledge than they usually realize and should "not be afraid to think for themselves." Teams should start with "concepts, ideas, principles, beliefs." They should "sit down, brainstorm, come up with your own, create together..."

Peggy believed that teachers' self-perceived lack of curriculum expertise was to some extent due to teacher isolation resulting in few opportunities to exchange knowledge. She saw this, at least in part, as a political problem. "But the most powerful thing is when you get the teachers in a room and you give them a chance to talk, it's phenomenal the knowledge that's there." Peggy suggested that the lack of opportunities for teachers to share professional knowledge "may be very intentionally in the structure to keep us in line."

Peggy thought it was neither desirable or possible for anyone to create a standardized middle school curriculum which could be widely applicable.

I don't like prescribed anything. Every context is different, every person is different...My opinion is, "Give me a concept. Give me an idea. Give me a theory. Then let me play with it and see if it makes sense to me. I'll decide which parts to do and don't. And then I'll come up with my own concept to meet what's going on with me and my kids."

**Knowledge of Content**

Peggy stated that content area expertise is a "nonissue because of the way we teach." She believed it was less important to give students knowledge
than to give them "tools with which to think, to find information and make sense of it." The content came from issues students were interested in and then was integrated with related content chosen by the teachers. In many cases the content was unfamiliar to Peggy. When the team decided to include an archaeological topic, Peggy said, "I have no knowledge of archaeology, but I can find out." She was confident because she did not intend to be sole knowledge provider, but only to introduce topics and assist students in their own in-depth study.

Therefore, you could take any content and I would equally competent because I'm competent in facilitating and teaching them to think. So I may not know anything about evolution of the species, but I know how to get them to find out and learn about that.

Just as Peggy's experience as a language arts teacher shaped her ideas about student-centered curriculum, her attention to process skills in reading and writing carried over to other areas of the curriculum. She said she taught "grammar kinds of things" when she noticed they were needed in students' writing instead of teaching parts of speech in a predetermined sequence. Similarly, she was not concerned with following a prescribed course of study in social studies or science. For example, although ancient civilization is customarily studied at sixth grade, that was only a small part of the social studies content encountered by Peggy's students. "The whole sixth grade thing focuses on Rome and Egypt. I mean those things are tied in but in different ways. But we don't spend six weeks learning about ancient Rome, and the
For Peggy the specific disciplinary content of the curriculum is secondary to the "questioning and thinking" that students do about the content. Our interviews and the observations of Peggy's classroom throughout the year provided many examples of Peggy's emphasis on students' questioning and hypothesizing.

They could say what they did know and what they didn't know and make some semi-educated guesses, and then later when we were done with all the content part of it, we went back and took those same hypotheses again and saw how they changed based on the information they gained.

Peggy believed that complex thinking skills and tools for gathering and organizing content made up the most valuable part of the curriculum. Specific disciplinary content might vary widely for different students in different contexts.

Knowledge of Strategies

Peggy's stated curriculum goals for students were that they learn and practice the skills necessary to become independent learners. She expressed to me and to her colleagues her desire to avoid the role of teacher as dispenser of all knowledge. The instructional strategies Peggy chose were designed to promote "active learning." Peggy described her own teaching role as "facilitating."

During my frequent observations throughout the school year, Peggy was
never observed lecturing or guiding students through a text. Instead, whole
group lessons often followed a discussion format with Peggy raising issues or
posing questions to initiate student talk. Many other lessons involved tasks
carried out by small heterogeneous groups. These tasks included generating
questions or hypotheses, locating and synthesizing information, organizing and
categorizing facts, and creating a format for presenting what they had learned
to the rest of the class.

The use of small cooperative groups was observed consistently throughout the year. Although cooperative learning was an agreed upon
strategy among the teaching team, they talked about it differently. Whereas Mark talked a lot about the value of teamwork in developing personal
relationships and sharing knowledge, Peggy emphasized the role of teamwork
in promoting active learning. "If there is active, cooperative learning and
there's a responsibility to somebody else,...you get more kids actively engaged,
you get more retention, more understanding." Cooperative learning, Peggy
explained, also fostered her goal of preparing students for the real world. "The
whole notion of working and cooperating with others in groups is one of our
outcomes which directly related to the world of work and reality." Peggy called
on her knowledge of research to clarify how she thought cooperative groupwork
was related to active learning.

You can go back to a research base, and you can...show that
retention and understanding are dramatically increased when
people work and actually do something. It's not just the
groupwork issue, but it's that they're actively engaged when
they're doing the groupwork. They're actually utilizing the
concepts and the skills that we're trying to teach. So it makes it
more relevant. It makes it real right there. The kids stay more
on task.

In her role as a facilitator of active learning, Peggy was concerned about
establishing structures for her students to follow. One kind of structure
created a classroom environment conducive to cooperative learning. "It's a
matter of establishing a process for them to be able to accomplish, establishing
the issues of respect and trust and how you talk to other people, laying a lot
of groundwork first." Classroom management was part of this structure. She
said that although her room was often noisier than she would have liked this
year, she did have control.

And I think that the way you get that is by building in this
mutual understanding and trust and relationship with these kids.
Once you get that laid down, you can teach those children and
have them learn anything. If you don't have that, you're going to
be struggling the whole time.

Building structures were also important in facilitating the learning
activities carried out by students. Modeling was an important technique Peggy
used for this task. "From the start we've had to work with a lot of modeling,
talking about how you do work with other people, building in different kinds
of structures." For example, Peggy explained that, until students were
experienced with groupwork, roles were assigned within groups and these roles
were explicitly discussed and practiced. When the team was planning how
they might introduce students to daily journal writing, Peggy suggested they
model this through "talking, sharing, doing maybe a couple together as group
kinds of things, then having them try it."

Peggy also referred to having students practice carrying out a loosely-structured model for student-led conferences with parents. She mentioned this again when she reflected on an activity in which students had been asked to plan and teach a mini-lesson with the class. Peggy had been dissatisfied with the result. She believed it would have been more successful if she had preceded the activity with "two or three lessons that I would have had to do, very similar to the modeling kinds of things that we do when we do conferencing." Modeling, facilitating, and building structures were all terms used by Peggy to talk about teaching strategies she had chosen because of their perceived compatibility with her curriculum goals.

**Sources of Knowledge**

Peggy recognized many sources for her knowledge about teaching.

> **There's a practical knowledge that came into play; there's a literature base, you know, reading research, making sense of kind of knowledge that came into play...People always think, "Well, there's a world of research and a world of practice," and I find the two are very connected in my life as a teacher.**

In our conversations Peggy cited the influence of specific authors, researchers, or professors encountered in her graduate studies. "I could pull some Joyce and Showers things for adult development, and I could pull some Smith stuff for reading, and I could pull, you know, some Charlotte Huck stuff..." As stated earlier, she acknowledged the influence of university courses and
scholarly literature in shaping her ideas about curriculum, language learning, and middle school education. She also said that her team was able to be more knowledgeable about global issues because of a university class they took together.

However, Peggy said that much of her knowledge came "just from practice and exploring."

I’ve also got this balance between wanting to know the research and the theoretical knowledge and wanting to make sense of it for myself. A lot of times people really like to read something that tells them how to do it and what to do and the "why" and spells it out, and I don’t...I want to understand the "why" behind it, but I want to make the "how."

Peggy draws her knowledge of the "how," at least in part, from her experience in the classroom. She recalled that in her early years of teaching she would say to students, "What do you guys think about this?" and "Let's try that." "I actually used them to test ideas and give me feedback, of course from their perspective...That's when I started to learn to teach them better, I think."

In those early years Peggy also worked on a curriculum development committee and received "a sense of validation" from other teachers "who said things that were what I thought." It was then, Peggy said, that she really began to draw on knowledge from her teacher education courses and to recognize the validity of her own experience as a knowledge source. All the sources of Peggy's knowledge, she explained, have been integrated so that "almost every decision is somehow impacted by what I've learned." As she talked about influential readings, she said, "I've read this, and I've
experimented with it, and I've written about it and I've played with it enough that I've internalized it."

Working With the Team

Team Roles

It was Peggy who first brought up in my presence the idea of individual roles as team members. At a planning meeting in the fall she said, "I'm real interested in the roles we're playing...I think that it's really neat the way that we complement each other." She added that she believed a team needed a balance of learning styles and personalities. "Janis is such a wonderful visual person. She makes things look neat and she knows how to take a concept and put it on paper...I only deal with words." Mark, Peggy said, kept them on task and reminded them "to think about what you're doing."

Exploring her own role further in our first interview, Peggy explained, "Well, I think I'm an idea person and I think that I probably tend to be more abstract and more into the gestalt than my teammates...I think I get big ideas and then they are able in a way that I probably could, but not nearly as well, take these ideas and start working them into reality." On other occasions Peggy defined her role as "the conceptual person" on the team. "I think when it's an idea thing, getting things pieced together, getting started, they look to me."

Peggy elaborated on how the team carried out unit planning as members
functioned in the roles she described. After the unit topic were broadly outlined, Peggy tried "to figure out how...are we going to make sense of this with three people looking at different angles that are overlapping, but yet are separate enough so that it's not the same." She described this as "the conceptual piece that has to happen to have it make sense." When she had formulated an idea, she asked Janis and Mark if it made sense to them. They talked about it, and the next day Peggy came back "with a tighter definition."

The environmental unit was divided, according, to Peggy into three teaching topics. "One angle that I'm taking is a...current issue angle. I'm looking at those kinds of things, but through the spotted owl and what happened with the Exxon Valdez." Mark's focus was on how students' everyday lives related to environmental issues. Janis developed the topic primarily through a study of ecosystems.

Janis, Peggy recalled, immediately understood and expressed an interest in teaching one of the three parts. Peggy described Mark as a more activity-oriented person who wanted to be shown more specifically what he would be doing and how his part fit with the rest. Peggy summarized the role functioning this way. "And so it's still evolving in that Janis is sort of running with it and saying, 'Oh, this is bouncing off what you're doing,' and Mark is saying, 'Okay now, fill me in. Let's make this work.'" Peggy focused on the conceptual framework for choosing content. "I think they're more into operationalizing things. And I'm more into making sense into why
operationalize it and how and conceptualizing it. And I guess that's really neat."

Rewards of Change

When Peggy talked about the rewards she saw resulting from this year's changes, she often mentioned that she had gained "a sense of controlling the curriculum" in a way that made it more exciting to her. She explained that she had been able to teach content that she had never been able to teach as a language arts teacher and to try different teaching methods and know that the other team members would provide curricular balance.

For example, I like to do a lot of things with issues and looking for shades of gray instead of black and white. I've always done that as sort of a corollary in my class, but now...I'm able to make that the focus of how I'm approaching a topic or an issue and knowing that that won't throw it out of balance. They still have these two other approaches.

Describing how a unit developed by the team differed from those that teachers might have developed individually, Peggy insisted that it was "a completely different creature than if we would have done it by ourselves." The integrated team approach "forced us to think in different sorts of ways and directions...and to come up with different angles." Peggy said that if she had been working alone to develop the broad themes envisioned by the team she would have had some good ideas but would not have had time to carry them out in a cohesive and complete way. "I would have had to do kind of a quick overall survey approach to these ideas, which defeats the whole purpose
because these ideas need very thorough developing and concentration to make sense."

A related advantage of the integrated team, according to Peggy, was that "you can generate more ideas and try new things if you've got somebody else working with you." Peggy believed that the different strengths of individuals on the team helped them to meet student needs. "I think we all have different strengths that we contribute, and the three of us together are better than one of us could be."

She also believed that it was important for students to see teachers modeling teamwork.

"If you want kids to work together and understand the value of working together, I think you as a teacher need to do that. Otherwise you cannot fully conceive what they're dealing with. And I don't think you can ask them to do it if you can't do it yourself.

Peggy had expected that teaming would offer curriculum advantages for students, but admitted that "one thing I didn't expect was advantages for myself." The rewards she listed seemed to fall into two main categories. The first of these was the category of professional support. In addition to having more people generating ideas and contributing their teaching strengths, teaming provided benefits of support on a daily basis. Peggy was absent frequently because of her responsibilities with the professional development schools, the local teachers' association, and a state policy-making committee. It was reassuring to her to know "that there are two other people that will
make sure the substitute knows what’s going on and it’s more of a team kind of thing.” Peggy also said that team members help each other “when one of us is scrambling.” For example, "Janis and I will get behind in journals, and Mark will pick up the slack with something else."

The second category of personal rewards for Peggy included factors contributing to her growth as a professional. Teaming, Peggy felt, helped teachers to improve their teaching practice because they were forced to articulate and clarify for others the ideas and visions in their own minds. Recalling that some say teaching is an art, Peggy continued, "Beyond this art notion, you can start to look at it in a more analytical way and make sense as being not just an art.” Peggy believed that communicating her ideas actually helped her to understand them herself. "And I think when you articulate things, when you say things, that’s when you begin to make sense of things as a different level...Otherwise, it feels right and you know what you're doing, but you can't get your finger on it."

In addition to helping teachers articulate their beliefs, teaming provided professional validation for Peggy.

I think it gives you a sense of efficacy and sort of reaffirms who you are as a person. You know, that there are two other people working there with you that see what you’re doing and appreciate what you’re doing and are there with you.

This affirmation has encouraged Peggy to reformulate some future goals. "Working with Janis and Mark has even furthered my notion that I want to work with adult teachers and adult learners to try new things and professional
Difficulties of Change

For Peggy the advantages of an integrated team far outweigh the disadvantages. However, the changes this year have presented some difficulties. The benefits of increased support and professional growth are tempered somewhat, in Peggy's opinion, by a loss of personal flexibility and autonomy. "Now I'm accountable to these two other people where before the only person my decisions impacted was just me." As a team member she could no longer follow her own agenda without regard to what others were doing. "I have to be here at a certain time in a certain place with a certain agenda where before if I had something else that I wanted to do instead I knew that I could catch it later."

Sometimes Peggy felt constrained also by the need to spend so much time working closely with others. "There's a sense of community or family almost, but, by the same token, if you're an individual who likes a little bit of that, it takes some adjustment." Peggy said that, in the past, if she had a choice between working with other or working alone, she would have chosen to work alone. She was surprised to find that teamwork has been so successful for her. She compared the commitment required for effective teaming to that required in a marriage. "You have to be there for those people. You have to work everything out together. I mean everything you do is together, and that
takes a different kind of energy on your part."

Relationships with colleagues can sometimes be problematic. With colleagues on the team Peggy worried about how to resolve differences in classroom management styles and how to achieve consistency in teaching. "I mean we knew that we all three had very different management styles even though we have very similar philosophies." Also Peggy and Janis had expressed to me their concern about Mark's limited use of active-learning strategies. During the first interview Peggy said they still did not feel very comfortable talking about these issues. Sometimes concerns were aired through jokes. "I think sometimes we tease a little hard...but I think maybe that's a way we vent things when we work together...We're still very careful about how we word these sorts of issues."

Peggy did not think that the differences among teachers were important enough to threaten the work of the team. Again using the metaphor of marriage she said, "There's an underlying commitment and a sense of what we're about that goes beyond [our differences]." In an end-of-the-year meeting Steve prompted the team to evaluate the year. At that time Peggy, Janis, and Mark were able to talk about the concerns they had avoided addressing earlier.

Relationships with the larger school staff were less of a concern to Peggy. She did not feel isolated from the rest of the staff even though she had little time to socialize with them. "I know that we miss a lot of meetings, staff meetings and things because we're planning." However, she did wish that her
colleagues had more information about the integrated team. "People sort of made up their minds about something that they know nothing or very little about. They're going on hearsay, and there's a lot of fear because it's different."

Peggy believed that if other teachers knew more about the team, they would "understand why we have to do things differently." She offered as an example the fact that the team was given small classrooms unsuited to their teaching needs because "we didn't want to step on people's toes when we implemented the program." Peggy would have liked more opportunities to share her team's work with colleagues. "I think if people knew what we were doing, they'd be excited and want to do it too."

Making It Work

Principal's Role

According to Peggy, the principal was the true initiator of the integrated team. Peggy believed that Steve already was interested in building such a team when she talked with him about Beane's book. "He knew what he was doing when he sent me to that conference." When she returned full enthusiasm, Steve helped select the other members of the team. "He's got a real handle on people, and I believe he knew how similar our philosophies are."

Peggy said that Steve had been a major influence on her thinking and teaching.
He is very supportive... He's never told me what to think, but... we think alike. And that probably enables me to take risks in another way. But he makes me reflect and think and asks me questions—hard questions. And he influences a lot of what think about things. But I also believe in turn that I influence him a lot. It's sort of a very neat relationship. It makes me feel like a peer, an equal.

Peggy described examples of Steve's continuing involvement with the team. He facilitated the work of the team in practical ways such as arranging for other teachers to cover their homerooms on Thursdays so they could plan together. He also allowed them to develop their own times for required parent conferences. Peggy expected that he would also ensure that the team would make time to address uncomfortable issues such as consistency in classroom management that might otherwise be "pushed to the back burner. I think Steve will keep calling it up front because he's afraid it will be detrimental to the image of the program."

Steve also performed what Peggy viewed as an important political function. He helped give program public visibility by encouraging Peggy, Janis, and Mark to speak to many groups of teachers in a variety of contexts. He also fielded phone calls from people concerned about the program's similarity to controversial state recommendations on outcomes-based education. Peggy dreaded the prospect of Steve's approaching retirement. Because of various political forces she feared that "without a powerful leader in the building" the future of the team would be endangered.
Team Composition

It was important to Peggy that Steve had carefully chosen the teachers she would work with. "The individuals that make up the team is just a crucial, crucial element." Peggy thought it was essential that the teachers themselves be motivated toward change. "I don’t think a principal can come and say, ‘Okay, you’re our new team. You’re gonna redo your whole curriculum and do outcomes-based education and this middle school stuff.’ That won’t work. It’s gotta come from within."

Not just any teachers, Peggy cautioned, can work effectively together. "I think if we were too divergent we would never get anything done. We would spend all of our time debating."

I think one of the most crucial things is making sure you have team members who share a common philosophy and a common vision of what teaching and learning. And if that’s not there, you’re going to be dealing with so many other battles on the side that you’re never going to get to the point where you can even create curriculum or restructure.

Peggy said the curriculum approach proposed for the integrated team was so compatible with Janis’ and Mark’s beliefs that "when they heard it, they went, ‘Ah. That’s me.’"

At the same time Peggy stated that a successful team needed a balance of learning styles and teaching strengths. Even though the core curriculum content is integrated and teachers are not identified with specific disciplines, Peggy recognized that teachers are not equally strong in every content area.

Now in core if there’s a math concept that’s pertinent to the
whole thing we all do it, but the intense math concentration stuff all falls on Janis' lap. And Mark's kinda picked up the social studies ball even though we don't call it separate...and I tend of course to fall back on the language. So even though it's not presented that way and planned out that way, we have our strengths.

In spite of their compatible philosophies and their ability to draw on their diverse talents, Peggy recognized that individual differences could cause friction among team members. She cited differences in personality, individual priorities, and classroom management styles. Therefore, she stressed the importance of choosing teachers who strongly believed in the team's goals. "There's this sense of commitment to our cause and this really deep understanding of who we are and what teaching is about that sort of makes those other issues secondary."

Sustaining Change

Many of Peggy's expressed concerns during the year related to ensuring that curriculum change would continue beyond the initial period of enthusiasm and energy. It was important, she stressed, to be practical in the daily schedules they established.

Really if we're talking about working so closely with these kids, then we need to have that built into the structure in a way that's workable and doable and isn't driving us crazy...because we want to stay fresh and enthusiastic...But we don't want to be answerable to a structure that we're designing either.

The team considered it essential that evaluation and assessment of student work be carried out on a frequent and ongoing basis. A big concern for
Peggy was finding time for this within the school day. Because she had so many family and professional responsibilities outside the classroom, she said, "I don't take work home." Therefore it was especially important to her that the school day be structured to allow realistic amounts of time for team planning and assessment as well as instruction. Realistic structures, she believed were vital to ensuring sustainable curriculum development. "It's like if we structure ourselves into this day that feels like it's every second, somethings's going to fall by the wayside...We're not going to like it and then they're not going to like it."

Peggy said that the curriculum was "evolving" and the team was making changes throughout the year. She felt that this freedom "to go back and redesign things" was a big advantage because they were not locked into structures. Peggy said her team had continually questioned their practices to check whether they were congruent with their goals or were just the ways things had always been done before. This questioning and revising of practice, Peggy hoped would keep their program "fluid and meaningful and real."

Summary: Peggy

Throughout our interviews and team meetings, a recurring theme was Peggy's desire to create a curriculum truly responsive to the needs of middle school students. Her orientation, which she described as "child-centered," was
influenced by her philosophy as a whole language teacher. Important elements of this orientation included assumptions about how preadolescents learn best and how teachers should interact with them. Specifically, Peggy believed that the content of middle school curriculum should be based on the concerns and needs of preadolescents as perceived by themselves and their teachers, rather than on a standardized body of disciplinary knowledge. Peggy also believed that meeting affective needs should be an integral part of the middle school curriculum and that, therefore, establishing relationships of trust with students was essential to teaching them.

Other key beliefs helped to define Peggy's curriculum orientation. For example, her goal of "preparing students for the real world" meant that the curriculum would focus, not on content knowledge, which Peggy thought might soon be outdated, but on processes and skills intended to enable students to be independent learners in the future. This goal also meant that assessment was based on broad outcomes such as organizing, "making sense of," and communicating information, rather than on memorization of facts. Finally, Peggy's conviction that adolescents learn best when they are actively engaged and interested led to her encouragement of student choices about what they learned and to her use of cooperative learning. Peggy described her teaching role as that of a facilitator who established an atmosphere of trust, provided structures for student choice and responsibility, and modeled effective learning strategies.
Peggy's view of curriculum was primarily a theoretical one which was
drawn both from academic and from experiential knowledge. She defined
curriculum as a conceptual framework which provided a sense of direction and
a vision. However, she insisted that, rather than being a predetermined course
of study, curriculum was an evolving creation of teachers and students
together. Teachers, she believed, have an important role as curriculum
creators, not only in making instructional decisions, but in formulating the
purposes and conceptual schemes on which instruction is based.

Peggy was enthusiastic about the rewards of working on the integrated
team. One of the chief benefits for her was that she was able to teach in ways
she found exciting while being assured that other team members would provide
curricular balance. She also believed that teaming offered the advantage of
having more people to generate ideas, share the responsibility on a daily basis,,
and contribute their diverse strengths.

Teaming also provided personal rewards for Peggy. First, she believed
team members increased their knowledge of practice because they were forced
to articulate their ideas to each other. Through this articulation, they clarified
and refined their own knowledge. Another personal reward was the
affirmation Peggy received from working with others who shared many of her
beliefs. Further validation came from opportunities to share her experience
with professionals from other schools.

Although Peggy believed the advantages of teaming far outweighed the
disadvantages, she did acknowledge some difficulties this year. One of these was a decrease in her personal autonomy and flexibility. She now had to arrange her schedule and teaching plans in conjunction with the rest of the team. Also, she admitted, working closely with others could sometimes be stressful because of individual differences. However, it was clear that Peggy thought that a shared commitment to the team’s goals made these disadvantages less important than they might otherwise have been. Peggy also mentioned that problems could result when other teachers in the school did not understand the curriculum innovation taking place. She thought that if the team had more opportunities to share what they were doing, other teachers would be more supportive.

Peggy considered the role of the principal to be a critical factor in the success of the integrated team. She saw the principal as an initiator and facilitator of change. He provided information that laid the groundwork for change and throughout the year had provided administrative support. Steve, Peggy said, was willing to grant teachers some autonomy and to treat them as peers. However, she also described him as a leader who was willing to assume risks and to raise uncomfortable, but important, issues. He also provided a degree of political protection and public visibility for the team’s efforts.

A second critical factor in the team’s success, Peggy believed, was the mix of individuals who made up the team. She stressed that the most important criteria for an effective team was that they possess compatible
philosophies. She felt that, unless this were the case, they would be unable to agree on basic curriculum goals. At the same time, Peggy thought it was an advantage to have some diversity among team members in terms of personalities, learning styles, and talents.

A third crucial consideration for successful curriculum change was, in Peggy's opinion, that the curriculum structures created be sustainable beyond the initial period of enthusiasm and energy. She emphasized the need to establish schedules and goals that were workable and practical in terms of resources, time, and teachers' energy. She also stressed the value of continually questioning the rationale for their decisions and constantly revising practices in response to students' and teachers' needs. It was essential to Peggy that their program remain fluid and open to change.
CASE STUDY:  MARK

Becoming a Team Member

This is the second year at Oak Grove School for Mark. Before coming here he taught fifth grade for 16 years at a nearby elementary school. When he entered college his goal had been to become a high school coach, but his first field experience was in a sixth grade class where his cooperating teacher convinced him to become an elementary teacher. She explained that a high school teacher has many students, but because she had only 30, she was able to work closely with each one. Mark said, "Sold. Because that's what I wanted. That's what coaching gives you. That one on one that you can work with."

Coming to Oak Grove was "like leaving home" for Mark, but he was persuaded by the principal to work with a proposed program for "at risk" students. Mark also looked at the move as "a chance to start out new". He wanted to try some new ways to teach language arts. "It was a chance of a change with students who came here." His wife also encouraged him to talk with Peggy, another sixth grade teacher at Oak Grove, who was experienced in the approaches Mark wanted to try. This was the beginning of an
acquaintance that led to Mark's being part of the Integrated Team.

Mark believed the principal suggested the Integrated Team to him because he had always been child-centered. "That's been my only focus all those years. That's what got me involved in elementary school." The team appeared to Mark to offer a chance to teach in ways compatible with his beliefs. "It's putting my philosophy into action...really trying to make it alive."

Mark was also excited about working with Janis and Peggy, the other members of the team. He believed that he knew something of Peggy's philosophy through observing her language arts class. "...I liked what she was talking about. And I knew I wasn't quite at that point yet, but I was attempting to go that way." Working with Peggy would therefore facilitate his own professional growth. He knew Janis only through her work outside the classroom. Her leadership with peer tutoring programs and with affective education and substance abuse prevention led Mark to believe Janis also shared his child-centered philosophy. "I knew where she was coming from and the way she worked with kids." An important incentive for joining the team was for Mark "the opportunity to work with those two individuals, and in a way that I could display my thoughts and have other people display theirs--kind of philosophical ideas together."
Curriculum Orientation

The People Factor

Mark's philosophy of teaching is rooted in his own personal value system which he described as "people centered." Such an orientation, in his opinion, places value on understanding and communicating with others.

Teachers need to be communicators. They must understand that teaching is communication, relating to other people, understanding other people, your colleagues, your students, your parents. That's where it is. The other things--the other knowledge--they'll come, but the key thing is the people factor.

According to Mark, the greatest influence on his philosophy of teaching has been his religious faith. Bible study is one of his hobbies. This, he said, has given him "the patience, the understanding, the perspective consciousness, realizing where [the students] are coming from" that enabled him to respond to students empathetically. This influence is also evident in his purposes for students. An example can be seen in his explanation of his goals for using cooperative learning. Mark wanted students to understand "the give and take you have to do in life" and to learn "ways for people to get along better" in order to prepare for the world of work and for marriage and family living.

Mark also cited the influence of the book The Little Prince because it expressed the value of "taking the time out to be with individuals." Compared to working previously with 25 or 30 students in a self-contained classroom, Mark now must know the 80 students for which the team is responsible. "It's hard to find that time...That's been the disappointment...because I loved that
individual time."

Nurturing personal relationships with colleagues also facilitated the work of the team, Mark believed. It was an advantage, he felt, that Janis and Peggy had worked on the same team the year before and that he and Peggy had been able to share teaching ideas. He said with regret that the team had been so busy planning together that they had not been able to talk enough about personal things. He reported that he and Janis had become better acquainted recently. During a trip to make a shared presentation they had time to talk. "I got to learn something about Janis and Janis got to learn something about me and that's kind of helped out a lot there." For Mark the personal and professional relationships are closely intertwined.

Localizing It For Them

Many of Mark's curriculum choices can be traced to the intersection of his personal philosophy and his knowledge of the lives of the early adolescents he teaches. He often stressed the need to direct curriculum toward outcomes that would equip students for future needs as he anticipated them. For example, he said that he believed it was more important to teach students process skills than any specific content knowledge. He recalled frequently telling parents that he would not be necessarily emphasizing "what the answer is, but where to find the answer."

Comparing his own goals with those teachers who are disciplinary
specialists, he said that the content knowledge they stressed would be for him "fringe benefits". Specific disciplinary knowledge would be less important than "using that knowledge in communication and problem-solving," and being able to access knowledge in the future. Discussing the role of the factual knowledge found in history textbooks, Mark stressed the importance of "using those facts to understand how people reacted and why they reacted and then 'How would you react in that situation?' or 'Do we have situations that are similar today that we react to and why are we reacting differently?'" He endorsed a style of teaching that is "not just the disseminating of information...but applying what we're doing and relating it to what's going on in the other core sections."

On several occasions Mark stated that an important goal of a particular instructional unit was to build students' awareness of the impact of issues or topics on their own lives. "We need to try to localize it for them so that it means something to them." During a study of environmental issues, for example, Mark's class considered the problem of waste disposal. He encouraged students to examine what is thrown away in their own homes and the packaging of items they bought. He stated that because many sixth graders are still concrete learners, they have difficulty "relating to things that are not in front of them and are not realizing--when they see a plastic bag, for example,...that's part of the oil industry, and how that dominoes into so many other things around us."

Mark provided another example of "localizing" factual content from
lessons which focused on life in other countries. When a student reported on living conditions and average incomes in the Philippines, Mark asked, "What can you get with $600.00 here?...Okay, what happens here if you have no electricity? What do you do with your food?" He hoped that by "localizing" and personalizing factual information students would be able to apply the knowledge gained and to see how their lives were affected. It was an indication of success to Mark when students showed their awareness by "coming in and sharing what they found in the newspaper or what they've heard on the news."

**Where They're Coming From**

Another basis for Mark's curriculum goals involved his estimation of his students' developmental needs. However, his awareness of these needs derived from his observations and experience of working with students of this age. He did not speak, as Peggy did, from a knowledge of middle school literature. When he was asked how his team's envisioned curriculum related to the middle school philosophy, he framed his answer in strictly local terms.

The middle school philosophy coming from this middle school would probably be different than I think some middle schools. The principal here kind of sets a tone. It's very child-centered, and the students are very much an important part of what goes on and how you deal with things.

Further probing indicated that Mark had little awareness of the various structural elements of successful middle schools usually cited by advocates of
middle school reform.

He said that his team's curriculum should be appropriate to their students' needs, not imposed by the high school. "I think about where the students are coming from—what will make sense to them." In our conversations and in team meetings, Mark frequently spoke about the backgrounds and family situations of students and the types of issues which engaged them. These issues are different for today's students, according to Mark, because of "the fluidity of how they live and where they live and where they go." He referred to the new pressures and demands caused by the influence of the media and by "things they are exposed to that people were not exposed to before." Mark's assessment of his students' cognitive, social, and physical development also meant that he advocated concrete teaching examples, hands-on learning activities, and helping students learn social skills.

They need movement. They're not going to sit down the whole time and listen to you talk. At this age, the way they react to each other—they're trying to gain their own status so they'll be sort of nasty to each other in different ways. Or critical of each other.

Mark said that he was "selling ideas" to students. "I have to sell them and convince them and work with them, make it entertaining, make it understandable...so they'll keep focused with it...If they're not going to buy into what you're doing, it's not gonna happen."
Making Connections

Another of Mark’s goals was to help students see all their learning as a connected whole. He believed in the value of "tying things together" and integrating the content of all three teachers’ classes. Mark said his experience in fifth grade "teaching everything" made the interdisciplinary approach a natural one for him. He wanted students "to understand how everything is related." He also believed that teachers should teach in ways that make the connections explicit because few middle school students would make the connections on their own. He described how, when helping his daughter study a topic in social studies, he now understood how his team would "bring in the math part of it, the writing and the communicating, the science part, the experimental part...We would relate it to the total picture of what we’re studying."

Translating the goal of integrated curriculum into his own individual planning, however, was somewhat problematic for Mark. He said that planning lessons as a team member was much more difficult than when he had been teaching alone because he was now "thinking about the other people, tying everything together." Comparing his individual lesson plans to pieces of a puzzle, he said,

Before when I was teaching by myself, I could pull it together. I could make my own puzzle. Now we’re making our own puzzle, but...my part of the puzzle has a little more meaning to it because it has to relate with the other people’s puzzle. It’s not just my puzzle.
Mark reported that when students in his class mentioned a connection with what they learned in other classes, it enabled him to better understand how his lesson fit into the total unit. Sometimes it was only as he was carrying out the team plans that he fully grasped how his part related to the whole.

Many times...as I did things, I saw how things tied together. And not fully knowing what everybody else was doing, but by the kids coming in and relating, I knew what I was doing, and then when I would talk with Peggy or Janis...everything kind of blended together.

**Curriculum Knowledge**

**Defining Curriculum**

When Mark talked about curriculum, he described, not a scope and sequence of required disciplinary content, but a process of teachers’ choosing which content should be taught and planning strategies for teaching particular students. "Curriculum...it's the knowledge out there, but it's more than the knowledge...It's always moving. It's always changing. You have a knowledge base to understand, but...curriculum is applying it, making sense out of it where [students] can use it." Mark's knowledge of curriculum is deeply embedded in his knowledge of practice. "When you talk about curriculum theory to me, I just don't relate to that...I don't think in those terms. Because I would see how the curriculum and the learning are intertwined...It's not a big separation." He rejected the idea of curriculum theory as "a progression of
getting somewhere" which dictates that "in one grade you do this, that, and the next, you know, like that." In Mark's view teachers act as curriculum creators when they make practical decisions about when and what to teach.

"It's not just following page by page in the book...Many times they have geometry right after a certain section of the book...which is fine, but if you do that at the beginning of the year or the end of the year, it really gets kids going, excited at a new way to look at something. But if you stick it in there all of a sudden, it kind of just puts up a roadblock where they're not quite ready yet. So you try to do what they can do first and then go from there, so you don't get so bogged down!"

Mark's practice-oriented view of curriculum theory includes the belief that teachers' decisions about instruction should be based on their understanding of curriculum purposes. He gave an example of how a teacher might have one purpose for teaching a particular topic, such as the U. S. Constitution and might select a teaching strategy in order to further a second purpose, teaching note-taking skills. "But a lot of times what happens is people get going on something and the purposes are not always seen or understood by the teacher. You can separate it, but it becomes sterile and disjointed and doesn't make quite the sense that you need it to make in what you're doing."

Knowledge of Content

In terms of disciplinary knowledge Mark has called himself a "generalist" and, in fact, the teachers on the Integrated Team have deliberately sought not to be identified with specific content areas. However, it became
clear that Mark believed each teacher brought particular disciplinary strengths
to the team. He felt particularly comfortable in math and the social sciences.
Although language arts had not always been a strong area for him, during the
past year he had become much more confident of his ability to teach this
subject. In science he felt less secure. "I have taught science, but I wouldn't
say I was a good science teacher."

In areas where he felt less knowledgeable, Mark has relied heavily on
a variety of resources to provide a content base.

We made use of the computer and encyclopedias, and the way we
team ed with students--the way I had them work with their
groups to come up with things. We used videos to get across
ideas--the knowledge that, you know, I was not that well-
versed in...

This was especially evident during a unit on Space. Mark used library books
and tradebooks rather than a text. He used photocopies of pages from reference
books to explains laws of physics and computer instruction to convey
information about the solar system. He reported that a series of public
television programs about the Hubble Space Telescope "helped explain things
in a very common sense way."

Mark also used his students to teach each other when he can take
advantage of their knowledge on a given topic.

"I've always used my students as resources because some of them
have that interest. Some of them have that knowledge reading
all those things...And also they can explain it in terms a lot of
times that the other students can understand and it will also
trigger something off with me too to reinforce it and show what
I was trying to mean."
Again, the use of students as peer tutors was observed much more frequently in science than in other content areas. During one especially memorable visit a student asked a question about how gravity works. Mark did not answer, but instead encouraged one student after another to attempt an explanation. Students became very excited as they presented information and drew on the board illustrations of varying degrees of accuracy until at last a student's contribution elicited an "Oh! Now I see!" from the questioner.

Mark's lengthy teaching experience has given him a thorough knowledge of what was traditional disciplinary content for sixth graders. Although he said that including this content had not been a major consideration this year, he indicated that he was aware of the knowledge and skills that students were expected to acquire by seventh grade. "We use basic ideas, certain things that we know they need. Then we apply them to what we're doing other than just making it a separate thing." For example, "When you think of sixth grade you think of early world history and stuff like that--world civilizations. But those are covered with a variety of things we've done."

He was also concerned with curricular balance. He said they had not wanted to shortchange any area and "just wanted to make sure that we gave them a chance to touch base on all the areas." Of the thematic units taught this year, he described the first one as a "math core idea. The next one, when we did the countries was more of a social studies area...and this last one we wanted to do something a little more science-oriented."
Knowledge of Strategies

A source of discomfort for Mark this year has been his struggle to translate his own purposes and the curriculum intentions of his team into the lessons he taught in his own classroom. In his journal during the first month of school he mentioned "feelings of inadequacy" and "ups and downs with my lesson attempts." During the spring he said, "Well, at times I've felt more confident about things and at times I've felt more self-conscious about things." One reason for this discomfort may be that, in spite of the value Mark places on hands-on activities and cooperative learning, he had not yet developed a repertoire of such strategies.

At times I struggle with it, to keep up with the--it's not keeping up, but just keeping the same quality as the other people I'm working with, the rest of the team. Using more of a hands-on type, becoming more conscious with it. The integration part has worked in a lot easier than the hands-on part.

In Mark's class student participation frequently took the form of reading and discussion. Students were provided with books, encyclopedias, and the newspaper from which to get information. Although students frequently worked in small groups there was little evidence that Mark established structures for cooperative learning. Mark was observed instead moving among groups assisting students and urging them to "work with each other." Mark spoke of the importance of "understanding their different learning styles and working with those styles." He hoped that use of TV, videos, and computers would supplement the more abstract information from books.
The computer had some programs that would explain it and show you more than just a flat picture. It would kind of give you another dimension that you could see things happen. You could see the orbits. You could see the movement and the changes in the phases of the moon.

During my observations Mark relied most often on guided discussion rather than on other activities to reinforce or summarize lesson content. He explained that he had used hands-on techniques in past years primarily in science and that he had less experience of this kind in other content areas. This year Mark searched for new teaching methods. He now saw his task as "not just giving out information...but applying different ways to do that." The sources he used in learning to do this were characteristic of his belief in "the people factor."

Sources of Knowledge

Throughout the study Mark's most frequent response to a need for more knowledge was to consult with other people. He said he had learned from "communication with people, with the families in particular." He also "shared ideas" with other teachers. An early example of this was evident when Mark referred to a visit to Peggy's room the previous year. "It did me good coming in your room...because as I hear them talk about their books...I tried to do all that stuff this year, really change some things here."

The emergent nature of the integrated curriculum has meant that Mark often has had less advance time than usual to develop his teaching plans. He
consults with colleagues.

Now the way—we don’t have time to plan that far ahead, so as I’m doing things I have to think quickly, and probably I can ask somebody. I can ask Janis or Peggy to give an idea and it’s—we’re just talking about ideas or ways to do something to help each other out...and they’ll throw out an idea and you can take it off from there.

I’ve talked to Janis a couple of times. She’s given me some quick ideas to try to do something different.

It was also observed that when unit plans were being developed during team meetings Mark frequently appeared to welcome suggestions for specific lesson ideas.

Mark’s belief in learning from others was expressed again and again as he talked about his professional growth. He said, for example, that he had learned about valuing individual differences through "working with a variety of people" in many summer jobs. His students also served as a knowledge source.

And a lot of times we’ll read in the journals or the kids will talk to us and say what they’re talking about...And so those are the things that I pick up from and those reinforce me. It’s like when we talked earlier about using those students to help out. Well, I’ve always used the students. I’ve always told people, "There’s 27 of us in here and that’s what we’re going to do. We learn from each other."

Mark is also conscious of his own experience as a knowledge source.

I know what is feeling kind of good when we do core, especially three rotations. By the time of the third rotation I’m pretty good at what I’m doing. The first one is—I’m not quite sure how it’s going to go. And I know I’ve got a direction. I know what I want to try to do, but by the third time I’m in pretty good shape with it.
Mark agreed that the strongest influences on his teaching have come from talking with people and from his own personal experience rather than from research or professional literature. The books he did cite as informative were suggested to him by his wife or by Peggy.

Mark believed that working with the team this year helped him to improve his teaching. "I have probably become more conscious of doing my lessons better. Becoming a better teacher. I'm becoming more proficient in what I'm doing." He referred especially to instructional strategies. "It has made me think about what I'm teaching and how I'm doing. My delivery. I've thought more about my delivery than probably I ever have in years and years." In part, this has been due to the demands of carrying out his part of an integrated curriculum in which all three teachers' classes are intended to complement each other.

I'm conscious about doing a good lesson because I know the other people are doing lessons and the way they approach things and so in your own way you're challenged--and not in a competitive way, but you're challenged to do your best because somebody else is depending upon you to come through with this idea for everything to make sense.

**Working With the Team**

**Role as a Team Member**

Mark described himself several times as the "realist on the team", and he recalled that when the team was being formed, Steve looked at him and said, "Well, you're the one that's going to keep them on track." When
questioned about what this meant, Mark explained, "I guess sitting back and looking at the whole picture." Peggy described Mark's contribution this way. "He's like this muser. He sits back and thinks about--you've seen him do it! He'll say, 'Oh, Oh, wait a minute. Look here.' and 'Look there,' and 'Think about what you're doing.'" During team meetings Mark's most frequent contributions were practical or logistical reminders involving coordination of resources, use of space, and organizing and sequencing of activities. However, he was also a realist in another sense.

I give the parents' perspective. I see, I work, I live in the community too. I am the one who sees a lot of the kids and their parents in the community. So I am the community person that's aware.

He was aware of community resources. During team planning he provided information about local experts and field trip possibilities. But more importantly, he was the realist in terms of some major stakeholders in the work of the team--students and their parents. A good example of this concern was observed when the report card to be used by the Integrated Team was designed.

Because we've got to look at what the report card's going to be used for. It's going to be used for sixth grade level and it's going to be used to communicate with the parents. And they're going to understand some things and we're asking them to change some ideas too.

Later, he reminded his colleagues again. "We need to keep in focus. Who is this for? Okay, we're making it for parents; we're making it for the other teachers. Are we necessarily making it for the students?" Because he had
school-aged children, Mark was aware of parental concerns. "If you can explain to those parents why you're doing what you're doing they begin to understand."

**Difficulties of Change**

It was not until the year's end that Mark really reflected on the changes that he had experienced in his role as a team member. He had not realized until then "how much of a change I had to go through...from never teaming before to jumping on a team that was beyond normal teaming..." Some of the changes included "the idea of being responsible for other people, and it's planning with somebody, taking that time and, you know, working with everybody's personality, doing some things just right there at the spur of the moment."

Mark spoke often about the individual sacrifices demanded by teamwork.

Yeah, you have to work together and you have to give and take, and the main thing is--working together as a team is giving up the things we've always done...And when you give that up you think,"My gosh, I've always done that. This is me." But you're giving it up because you see a better result as a whole with everybody working together.

When asked what he had given up for the sake of the team, Mark said that he had lost a lost of the individual time with students that had attracted him to teaching. A second thing he had given up was the pleasure of teaching some content areas he enjoyed and the freedom to emphasize topics of interest
to him. Math, for example, was an area in which he felt strong, but Janis, because of more recent training, was responsible for planning most math lessons. Also Mark was "more interested in history, but we didn't go into that much detail about it" because the themes selected by the team stressed other areas more.

Another area of compromise for Mark was the need to bring his classroom management into more consistency with the other two teachers. This was observed to be, to some extent, a source of tension among team members throughout the year.

I've become more conscious of--my noise level's a little different than most people's. So I've become more conscious on that and trying to keep consistent with the other people. On more follow-through with students on discipline. You know, not having to do what I've always done. Like just certain things you always did. Just kind of pull back.

Mark also received some advice about keeping his classroom neater. The following remark indicated how he responded to such criticism.

My advice for people would be to believe in what you do, but don't let your pride take over what you're doing. It's a lot of give and take. And a lot of reflection on how you're doing something. And not get too hung up on little things. Things are getting done but in a different way this year.

Mark's reference to "doing some things right there on the spur of the moment" indicated a change that necessitated a big adjustment for him this year. He explained that because he had to be aware of and respond to what was happening in the other two classes, he often needed to change his own plans. Also the practical problems of arranging lesson planning with two other people
meant that he could not plan at his own pace.

I think I've done more thinking on my feet than I usually would have to. Usually I—if you look at my desk in the room, it looks pretty disheveled and disorganized...but I've always worked, planned so far ahead and had everything all organized so that I can handle things. Now the way—we don't have time to plan that far ahead, so as I'm doing things I have to think quickly..."

Mark's concern with knowing the plan in advance was evident in many ways during team meetings. He asked many questions to confirm that he understood what the team had decided to do. He often then reiterated his understanding of how he was to proceed. Next year, he expects will be easier because he will know more about the people with whom he is working.

In spite of the magnitude of the changes he has experienced, Mark is optimistic about long-term success. He emphasized the value of "being a risk-taker and trying something." Risk is acceptable "if you know you're trying the best you can...and you're trying for the best for the child." Difficulties can be expected. "You'd like it to work out right then, but don't give up on it because it might be the stepping stone to improve the next year."

Rewards of Change

As we looked back together at the past year, Mark reported with surprise that, in spite of missing no days during the year, he did not feel fatigued at the end. "I've come early and stayed late, all those things." Although he had more professional days than usual, many were used for speaking about his experience to teachers at other schools. "But, you know, it's
real exciting. It's been a learning experience."

One of the positive features of the teaming experience has been for Mark the support he received from his two teammates.

You feel you're not in it alone and when you're working with a child or a concerned parent, the misunderstanding can be corrected by other people looking at it together with you. You're not there by yourself looking at it.

And I think the underlying philosophy shows through when we're down to that. We have different approaches. We have different strengths and things, but that underlying philosophy of the child and their confidence and how we look at them, I think, really shines through.

This perceived similarity of educational philosophies, according to Mark, gave all three teachers added confidence in their work. It was reinforcing to him "to have that opportunity where everybody, three people, are looking at something in the same way for once." The team also provided support in dealing with students. "The advantages are the idea that three heads are better than one. You're working together. You're seeing some students in a different light." Mark believed he gained insights about students from his colleagues.

Somebody who may not be working for you--They're seeing other areas where they're picking up and you're talking about it and you're seeing that... Sometimes you only see them in a situation where they're sitting by somebody in you class, but they're sitting by somebody else and they react differently.

Mark believed, too, that teaming enhanced his teaching ability. Teamwork fit well with his most natural way of constructing knowledge, learning from others. "I've improved in a lot of different areas, I feel, that has
taken it another step farther. Not just, you know, coasting along." Part of this has been the challenge of keeping "the same quality as the rest of the team."

Another part was that Mark felt freed from the responsibility of delivering the total curriculum.

Where before I would have been trying to hit all the parts of it and I wouldn't have been able to hit it as well or I would have gone off on one side more, this way I'm able to narrow it...And I know the other parts are going to be taken care of to a certain extent. There's overlap which is fine--the vocabulary and stuff--because I can build on what they're doing then.

In addition to support, Mark described his feelings of validation as a result of a team effort toward curriculum change. In one sense, this was personal validation from being empowered to put his beliefs into action and knowing that others shared those beliefs. "Just the idea that what I ask the students to do, cooperation, I'm doing. I'm living what they're doing and doing what they're doing. And working with good people that have similar philosophies."

In a larger sense Mark gained a sense of professional validation from the attention his team's program received. They received visitors from other schools and were invited to give professional presentations. "Now I have an audience and some authenticity with it there instead of just my own unique way of doing something." He has now begun to think that "career wise,...this might be a new way to reach out and express things to people using my profession as I retire ten years from now..." He cited effects he had seen in his
own school. "I think people have watched what we've done this year, and I think they've grown to understand and have started to see some things...more than I thought they would see." He said some seventh grade teachers were now wanting to work toward curriculum integration even though a move to another building might cause problems. "It might not happen. But they're interested."

Making It Work

A Shared Philosophy

What are the factors that Mark considered to be crucial to the success of his team's effort to make major curriculum changes? The one that emerged most consistently from the data was Mark's belief that the team was able to work together effectively only because they shared a common philosophy. "I think one thing we have in all of this—we're kind of child-centered versus curriculum-centered, certainly, or subject-centered." Mark described himself as "a child-centered person" and believed that his colleagues, although different in many ways, shared his "underlying philosophy." "I had no problem coming into the middle school--no problem relating to what Peggy was doing...You know as we started to talk we found out that we were pretty much on the same wave length." Mark cited Janis' involvement with "peer tutoring and Pirate Pals and those types of things" as evidence of "what her philosophy
really is. It's with the kids." The first time the three met as a team Mark reported, "Things just clicked."

In Mark's opinion, however, it was important that the team members were different in many ways too. He related this to his coaching experience.

You need a balance on your team no matter what kind of a team you have. And I can relate that to athletics since I've done that so much in my life. You just don't want all the same type of person doing that.

He spoke of individual strengths each teacher brought to the team. "Janis with her science background is one we can ask and depend upon there, and she's picked up some extra math background." He praised Peggy's "natural writing ability" and several times mentioned how he had learned from her about teaching language arts. Their differences were "not worth moaning and groaning about" in view of what they could achieve together. When he was wondering about his own contribution to the team he reminded himself that "it needed all three of us together. Two of us couldn't have done it. It needed all of us working in our ways to do things, to keep things going, picking things up at times, those types of things."

Mark's advice to other teachers who might undertake this kind of teamwork summarizes well the ways in which he described his experience as a team member.

Be willing to look at yourself, your philosophy. Be willing to give and take. See how you can help out--your role. Be a listener. Be willing to sacrifice. That may not be the best word, but be willing to give up things that you've always held for looking for the betterment of the children. That willingness to do that. Being
able to change and adjust.

Practical Constraints

Many of Mark’s contributions to team planning sessions were directed toward "making what we’re trying to do workable." He was referring to the practical considerations of space, time, and resources needed to carry out their curriculum intentions. Analysis of team meeting observations yielded many examples of his attention to these mechanics of planning. He said that he was sometimes "limited by the time with the hands-on and the space that we have..." Because Mark could not make his individual plans until some team planning was done, it was essential that time be set aside for team meetings. He said that a major difficulty was "finding that common time for us for planning and organizing things." Peggy said they needed to be realistic about what can be done within the time available so they would be able to sustain energy and enthusiasm. Mark agreed and added, "If one of us catches another one forgetting this, we need to say, "Wait a minute. What are we trying to do?"

Administrative Support

Mark said that some credit for the team’s effectiveness should be given to Steve, the principal, "who encourages and knows us and has worked with us and is very child-centered." He said that Steve "set the tone" at the middle
school, making students the center of what takes place. He described Steve as "a people person. He has tried to encourage people to work in that manner and so I think that was one of the driving forces." Mark remembered that the year before Steve had laid the groundwork for change by saying the school was going to be emphasizing strengthening math teaching and possibly forming an integrated team. "He presented some different ways where people were going to go, where he would like people to work on things." Steve suggested the Integrated Team to Mark. Steve knew his staff well, and because "he knew where each of us was coming from, he knew who would be interested in working in this way." After the team was formed, Steve "set things up that he knew people could go on and take off." Mark was encouraged because Steve arranged financial compensation for summer planning time and provided resources. After Steve brought a sample rubric to Mark's house at 10:30 the night before a team meeting, Mark expressed appreciation that he had brought it even though he had been busy. "That's the kind of guy he is." Mark believed that Steve would also provide support for the risks the team was undertaking in radically changing the curriculum. A revealing example of this belief occurred during an early team meeting when the team was concerned with getting administrative approval for their nontraditional report card. Peggy reported that rather than seeking authorization from a higher source, Steve had said, "Well, you know, site-based management. Let's go for it." Mark told me, "When he said site-based management, that really made a difference."
We're not going to screw around with those guys at the board." The question that Mark expected Steve to ask when a change was suggested was "Why are you doing that?"

**Summary: Mark**

The most consistent observation emerging from the data was Mark's belief in the importance of understanding and communicating with other people. His religious and philosophical orientation led him to place a high value on personal relationships. Such an orientation made him appreciate the communication and support he received from the team. In teaching his priority was on knowing his students and their backgrounds and on meeting their individual needs. For Mark, students' social and emotional needs were just as important as their academic needs. Therefore, his curriculum goals were based on personalizing knowledge for his students and helping them to relate their learning to their lives.

Mark's thinking about curriculum was practical rather than theoretical. He believed that curriculum emerged and changed as he made decisions about what to teach and how to teach it. Although he was aware of the usual course of study for sixth graders in his district, he viewed this as a guide from which he developed a curriculum appropriate for his students. Curriculum for Mark was more than the content to be learned; it was the way in which he made the
content meaningful for students. Because Mark believed that teachers' instructional decisions should be closely linked with their understanding of the purposes of instruction, he thought teachers should not be required to conform to a curriculum scope and sequence prescribed by others outside their context.

Mark reported difficulty this year in translating the curriculum intentions of the team to his own classroom teaching. This was, in part, because his knowledge of instructional strategies was not yet able to support his knowledge of his students' developmental needs. Specifically, although hands-on learning activities are consistent with his assessment of student needs, he had a limited repertoire of such strategies. For this reason, he tended to rely on a small number of teaching methods, chiefly reading and discussion, and he depended on a variety of books and media resources in order to provide students with different ways of learning.

The demands of being part of a team presented other challenges for Mark. Chief among these was adjusting to a teaching context in which his performance was highly visible to his colleagues. This caused some anxiety as he sought to make his instruction and classroom management compatible with that of the other teachers. This anxiety was compounded because team planning and the inevitability of last minute changes meant that Mark had to give up the security of detailed long-range planning. Being part of an integrated team meant also that Mark had to give up teaching some subjects that he had enjoyed.
Mark coped with these challenges in ways consistent with his expressed beliefs. He viewed other people as sources of knowledge, and when he needed advice or teaching suggestions his usual course was to consult with colleagues. Therefore, collaboration suited him comfortably as a natural way of learning and improving his teaching. The value he placed on being able to get along with other people made him willing to sacrifice some of his preferences for the good of the team effort. His appreciation of individual differences made him conscious of what each teacher contributed to the team and able to avoid defensiveness about his own role. Although feeling insecure in some areas, he was able to define a role for himself as the realist who reminded others of what was practical in the given context of each day.

Teaming also offered rewards that Mark appreciated. One of these was the support the team offered in working with students. At least as important was a sense of personal and professional validation which came from working with others who shared his beliefs and from recognition of their efforts by other professionals.

There were three main factors that Mark cited as crucial to the success of the team’s efforts toward curriculum change. Most important, in Mark’s opinion, was the similarity in philosophies among the team members. They all shared the belief that the curriculum should be designed to meet the needs of their particular students. Mark called this curriculum child-centered and differentiated it from a subject-centered curriculum. The second crucial factor
was the administrative encouragement and support provided by the principal. It was important to Mark that he shared the team's curriculum philosophy, provided resources, supported their risks, and allowed them some autonomy in decision-making. The third influential factor was more problematic. The practical limitations of space and time were not easily dealt with due to the few rooms available and the constraints of the daily schedule. Mark's concern with finding space for class activities and time for team planning appears throughout the data and continued all year.
Janis began her professional career at Oak Grove Middle School as a teacher of children with learning disabilities. Like Peggy and Mark, Janis had always expected to be an elementary school teacher, and she had earned her LD certification only as an enhancement of her teacher training. "I knew that LD students would be in the classroom so I got it kind of as a backup for the regular classroom." When she began her job search, however, she was hired because of her LD certification. She taught in the learning disabilities unit for four years before being assigned to a regular sixth grade class.

The move to sixth grade offered Janis an opportunity to help learning disabled students in a new context.

I had students who were being successful with me and who were failing in the regular classes. I knew if I was in the regular class I could still see what the regular sixth graders were doing and I could help the LD kids to be successful and I knew that they could be.

After teaching in middle school, Janis no longer preferred teaching younger children. "I think I could adjust, but I like this age student now, the chance to talk with them, share things about what's going on with them."
Janis traced the origin of the integrated team to Peggy's participation in the middle school workshop led by James Beane. Janis had originally been asked to attend also, but could not because she was involved in consulting work with the state's Department of Education, developing programs for affective education. Otherwise, she said that she, as well as Peggy, would have been "more full force into that...I think Steve knew what he was doing when he asked us if we wanted to go."

When Peggy began describing the program to her, Janis had several questions and concerns. One of these involved the extent to which team responsibilities would conflict with her consulting work. Another concern was that she was committed to making important changes in the math curriculum as a result of participating in a summer training workshop. Several conversations were necessary before Janis was convinced that these concerns would be manageable within the program Peggy envisioned.

Janis' interest in the integrated team was prompted by questions she was asking herself about her own teaching. She was questioning such things as traditional testing practices and the customary routines for dealing with students who failed to complete work on time.

I started thinking about those issues and really what I was trying to teach, what I always feel comfortable teaching, and I guess the little lightbulb started getting brighter and brighter and brighter and brighter as I started hearing more about this stuff, and I had many conversations to myself about it...

So I guess the expectations were looking at what I was doing and not being completely happy with what that was. I think that
there was more to this. I think that looking at the whole issue of reform and trying to change things and do things in a different way, I thought that was kind of exciting--being a leader, trying out some of that stuff and to see if it would work.

Although Janis said she had not been a risk taker when she was young, now she was dissatisfied with the status quo. "All through life I think that I've been a perfectionist. I want to do the best that I can and this allowed me to try do that in a different way..." She was attracted by the prospect of "being on the edge, trying something new, trying it out and making it easier, and then if it's something that does work, then trying to bring others along." That, she said, was one of the major reasons she agreed to be part of the team.

**Curriculum Orientation**

**Getting Kids Involved**

When asked how she would advise a new teacher about teaching middle school students, Janis said, "I think you would need to let them know that most of them are concerned with other things outside school. That school's not their priority." She said that for most students peer and family relationships were much more important.

You could have the best lesson planned and if they're thinking about something that happened or a fight they just had at lunch with a best friend or that they're going to get beat up after school because someone made some kind of threat to them, they're not going to be any more involved in what your lesson's going to be. And that's a major part of being a middle school student.

To Janis this meant that a key to teaching middle school students
effectively was to center the curriculum "on what the students are involved in, what's interesting to them, what's meaningful to them." Students, Janis believed, should help to choose what was to be studied. Teachers should "get them to try to deal with problems and come up with solutions and set goals for themselves." The benefits of student engagement, according to Janis, were "that they'll retain much more information, become more enthusiastic about their learning, [and] become more lifelong learners." She said students this year had found learning more meaningful because they've helped determine the topics they studied.

Janis explained that she saw herself as a "guide in the classroom maybe instead of just the know-all and be-all." Rather than just giving students information, she wanted to help them "find out what they needed to know and help them learn ways to do that." Summarizing this notion, she paraphrased a quotation by Leo Buscaglia. "Ideal teachers are those who build bridges over which they invite their students to cross, helping them build bridges of their own."

Meeting Affective and Social Needs

One of Janis' priorities was to help build students' self-esteem, which she believed related to preventing several destructive behaviors such as alcohol and other substance abuse, vandalism, teen pregnancy, suicide, and dropping out of school. Janis indicated that she chose to spend more time on topics she
considered important in order to address students' affective needs.

I know that I spent probably a full six weeks on drugs and alcohol and peer pressure and all that kind of stuff from the health perspective, and other people may have hit it for a week. Just because I think that's so important to these kids' self-esteem and where they're at."

In other efforts to build students' self-esteem Janis drew on her experience in developing affective education programs for the state department of education. She has led in establishing some of these kinds of programs at Oak Grove. "We wanted some way to recognize those students who were always either doing what they needed to be doing or those kids who were making some improvement." Janis organized a program to honor these students and their parents several times a year. Pointing out that these were not necessarily the best students academically, she said, "It gives some kids a boost who need that and gets our parents in the building." Janis described a similar program to recognize students who made even small academic improvements. "Kids at this age--they need this incentive. They don't have that intrinsically yet. They need those outside things. That's why I'm real big on the rewards and stuff in the classroom...I think that they need that."

Janis stressed that, although students are increasingly interested in adult issues, "they're still kids at the middle school." A traditional junior high school, she said, is more like high school or college. "You don't get to have fun anymore, and learning doesn't have to be fun...And I think that learning should be fun and I think that it is fun." Janis felt that her classroom
environment was more like an elementary school than a high school. She pointed out "the physical environment--the posters and that kind of stuff and activities around that people can do." These things, she believed were appropriate to both the social and cognitive development of her students.

I think you need to have...the recognition, the fun things, the athletics, the intramurals, that kind of stuff needs to be in the middle school program...I think that's an important part of the overall education of the child and their learning to work with each other in the fun things.

Learning By Doing

In addition to making learning more pleasurable for students, Janis intended her classroom environment to address her students' cognitive needs. "They're not abstract learners yet. They need to be doing things with math. They need to be able to see the relationships between things. They can't just look at it written mathematically and visualize that." Janis mentioned that she herself was a visual learner and she recognized the need in her students to see and work with concrete examples. "If you sit and read something it's not going to be as meaningful as if you can see the stuff."

Janis referred to a diagram of a learning pyramid. The pyramid illustrated that learning is greater when students "are actively doing something with their learning and teaching others that means they use their learning. In addition to making it more fun and more exciting, they're remembering more." It was important to Janis that all students actively
participated.

There's too many times in a regular classroom...that you have participation by very few students...The others just sit and don't do anything. They're not held accountable for things. They're not required to participate and they don't.

I think the best lessons that the students learned the most were the interactive lessons, the things that they were doing together, the things that they had to work on.

Learning With Peers

Janis held strong beliefs about the value of cooperative learning and had a repertoire of skills for facilitating group work. She recognized the social benefits of working with others, but she also made it clear that she believed cooperative group work was an efficient learning technique. She gave three main reasons for this. First, it offered students more chances to grasp a concept.

If I've explained something to the class and a student still doesn't get it, then I'm going to explain it to them basically the same way again...but the students best know how they understood it and can explain [to a peer] then in their terms if they've interpreted it in their way or have a different way to look at it.

A second benefit of group work, Janis stated, was that it enabled individual needs to be better addressed. She cited her background as an LD teacher as one reason for a special concern for students with special needs. "I think that by the students working together one thing that does help the teacher is that they can go around and work with the students who need much more in depth work and have poorer skills." Janis also saw students helping
each other, not only with answers, but with skills for finding those answers.

A third benefit of cooperative learning described by Janis was a more meaningful approach to assessing students' learning. She was convinced that peer assistance helped the student who was teaching as well as the one who was receiving help. Janis believed that a student needed a deeper understanding to explain a skill and give examples to a peer than to just answer questions or solve problems on a test. "If I can show you what you don't understand, then that shows that I understand that concept. I would much rather see students doing that than have them write down on paper how to do something."

**Curriculum Knowledge**

**Defining Curriculum**

Janis most often used the word curriculum in its traditional sense to refer to the required course of study. This familiar meaning of the term was not, however, adequate to convey what Janis believed curriculum could be. She defined curriculum as "the information, the ideas, and the concepts that the students are attempting to learn and make sense of." Janis said that a few years ago she would have said that the curriculum was what she was trying to teach kids, but "right now I feel that we're finding out the information together instead of me having all the knowledge and giving it to them. She acknowledged a curriculum embodied in the course of study but was more interested in "looking at what I was actually doing in the classroom." This
seemed to be essentially a practitioner's view of curriculum which Janis was still searching for terms to express. Janis' definition of curriculum as required content was too limited to express her understanding of the teaching and learning in her classroom.

Janis talked about textbooks and content outlined in the sixth grade course of study. She reported, "I guess that one of my biggest concerns going into the team [was] that we're not following that curriculum." She said she then realized that in the past, "I didn't follow the curriculum anyway basically. I mean I used the book--somewhat. I guess maybe I really didn't follow the curriculum." Explaining that the volume of content in the course of study was too great to cover adequately in one year, she had to "pick and choose" what to teach, emphasizing certain content that interested her and "pulling in all kinds of outside things."

Janis stated that curriculum content was very similar in any sixth grade.

But how it's being taught...is what makes it either a fun class or an awful class...or a class that you're going to achieve well in or a class that you're going to get by with the least you can. It's the content versus the process, I guess.

She said that the team this year had tried to tie content and instruction together. "In the past when I've done group work...that was a strategy I used in order to teach the curriculum that was given to me. Whereas...I think that now that's part of the curriculum, the teaching and learning process." The team, she said, did not plan what they would teach and then what steps they
would use to teach it. Instead, "how we were going to be doing it came about as we were talking about what that content was going to be." Janis took a practical approach to curriculum which took into account how what was taught related to how it was taught.

**Knowledge of Content**

Janis had always taught science in sixth grade so this was an area in which she felt a comfortable degree of disciplinary expertise. During the summer before the integrated team was formed she participated in a university workshop where she learned new approaches to teaching math. Therefore, it was not surprising that, when core teaching responsibilities were divided among the team, Janis often dealt with the scientific aspects and that she was the person most responsible for planning math instruction. Although she said that during the core lessons all three teachers may have taught different math concepts, Janis accepted the primary task of planning for core math integration and for more concentrated math instruction in the afternoons.

The team's biggest concern with math, according to Janis, was to make sure students "had the skills mathematically to go on--that those kids aren't going to fail when they get into a seventh grade classroom." Janis' concern was heightened by the summer math work she had done and by Steve's frequent reminder that "you gotta make sure they get those skills."
And I think mathematically, that's one major area where that's going to show whether or not they have [the skills], whereas in science or social studies our kids are reading all the time so I don't think that's a problem in what we're asking them to do there.

Janis had expected that it would be very difficult to integrate math concepts into the core lessons, but she reported that "it's joined very easily." She provided examples, such as using graphs, percentages, and ratios during the year's first unit and later figuring population densities, areas, and perimeters of countries they studied. She pointed out that in most sixth grades some of these skills are not addressed until the end of the year, if then.

She found science equally easy to integrate, in part because she had many materials and teaching ideas she had used before. For example, when she taught the chemistry segment of one unit she explained, "I immediately took the easy part, for me, since I had the background and I know what they've done in chemistry and science from the other years. I was able to draw somewhat from that." She described teachers' choices of what part of the unit to teach as based on "where we are as individuals" and also on convenience. However, she felt she could have taught any of the areas. "It easily could have been very random, I felt. We could have just put them on a sheet of paper and pulled one out, and I think we would have been successful with it."

In her efforts to integrate curriculum Janis was aided by her ability to conceptualize how disciplinary topics related to one another. Referring to the themes of Self, Society, and the World which served as the team's general
curriculum frame for the year, Janis articulated clearly how she saw these themes developed through the sequence of units they had taught. She also saw a progression toward more student voice in developing unit content as the year went on. This conceptual framework signified a change in the way Janis thought about content. "I think when I've done chemistry in other years, it's been all the elements and all the compounds, but never related to anything. That's one of the main things that I've seen this time--how well it fit into the other areas." Understanding this fit "made so much more sense to me with what I was teaching, as well as to the students and why they needed to learn something or how it tied in..."

**Knowledge of Strategies**

Janis stated her belief that no matter what a teacher tries to teach, "it's how you teach and the mannerisms that you have and how you work with the kids that makes it a successful experience or not." This belief helps to explain the high level of attention Janis gave to planning teaching strategies which would be engaging and developmentally appropriate for her students. A large degree of correspondence was apparent between her curriculum beliefs and the teaching strategies she chose.

An observer in Janis' classroom would be most likely to see students in small groups engaged in hands-on activities perhaps involving manipulative materials, or taking part in a lively discussion led, but not dominated, by
Janis. Janis said, "There's no way I could sit and lecture, even to a high school class or college class or even to those kids." She would much rather find out from them what they know or what they want to know. "If they come up with the ideas, they are so much more involved--much more ownership!" Janis was critical of teachers who "just talk on and on and nothing gets accomplished."

Her belief in the efficacy of concrete learning strategies is revealed by her use of visual aids and manipulative materials in instruction.

Something very simple I use with the decimals: I use the base ten blocks, and some of them will say, "Oh, I see that!" And still now even though we don't pull those out, they can visualize what that looks like in their minds to be able to do that. It's real important.

Whenever possible, Janis encouraged students to handle materials or to represent their learning in a concrete and visual way.

One of the series of lessons that Janis considered most successful was their study of atoms. She recalled that she had given them some explanatory information and shown models of atoms to give them some background information, but she "did not see that as being as effective as the kids actually working on it." More effective, she believed, was the activity she devised to help students understand how small atoms are. Using dark sheets of paper and toothpicks, students tried to count the grains of salt filling the bottom of a tiny cup. After they had gotten an idea how many grains it took even to cover the bottom of the cup, Janis told them that there were about five billion atoms in one grain of salt and asked them to hypothesize how many atoms
might be in slightly larger objects. She intended this to make the tiny size of atoms more comprehensible. Janis also asked students to demonstrate their learning in a concrete way. They made individual models of atoms of various elements using creative materials and explained them to the class.

Janis involved students as much as possible in science experiments. However, because of the nature and quantities of the materials available, not everyone was able to participate to the extent she would have liked. She encouraged students to try the experiments at home and explained how common household materials could be used. She was pleased when students reported the results of these experiments or shared parents' responses to requests like "Please pass the sodium chloride." Janis thought it was highly valuable for students to "tie in what they were learning back at home."

All of these activities were carried out in small groups, reflecting the value Janis placed on cooperative learning. However, she stressed that she put a lot of thought and effort into helping students work cooperatively. "You need to teach cooperation skills. Give them lots of practice. You can't just expect kids to be able to work together. Many teachers try it once, don't like what they see, and never try it again."

Janis taught these skills in many ways. An example was the way she structured groups and tasks to encourage all members to participate. One such technique was to have groups of four number off and then to assign a different task to each number. All had to complete their tasks if the group was
to be successful. "So it's not just one person doing the work."

Janis believed that it was important to make students consciously aware of the skills necessary for cooperative learning. She provided a rubric which students used to check how well their groups got started working, how they as individuals cooperated, and how well their groups worked together. Janis asked students periodically to use the rubrics to evaluate themselves on areas of improvement or areas they needed to work on. "I think some kind of teaching has to be involved in that." Although Janis occasionally provided small rewards for groups that functioned well, she said, "I think the self-evaluation's more important to them though. I can come and tell them what I see happening, but it's much more meaningful if they can determine what skills they need." When Janis talked about planning and teaching lessons, she frequently provided her rationale for choosing particular strategies in terms of her goals of engaging students' interests, promoting active involvement, and helping students learn together and teach each other. There appeared to be a very close correspondence between Janis' curriculum goals and the knowledge she employed to teach in accordance with those goals.

Sources of Knowledge

Janis attributed her knowledge of integrated teaming to Peggy who relayed and interpreted information from books and the middle school curriculum workshop she attended. Janis also said that Mark and Peggy had
brought back what they had learned from a conference on outcomes-based education. "So I've gotten most of this stuff secondhand and I've been trying to make what information out of it I could."

However, beyond this latest knowledge of curriculum innovations, Janis had several other important sources of curriculum knowledge. First, her experience teaching children with learning disabilities provided her with knowledge about working with small groups and using concrete, hands-on strategies. She also drew on what she had learned in workshops on cooperative learning, and, not least, from her own experiences teaching sixth grade.

Janis said that through her work as a teacher consultant for the state department of education she developed skills she has needed for working with her own teaching team. She developed a repertoire of team building activities and procedures for creating and implementing programs based on needs and interests of local student populations. This was also the source of a great deal of Janis' knowledge about affective education.

Finally, Janis had gained additional disciplinary expertise through her participation in the university math workshop and the course on global education taken by all three teachers. This, together with her other experiences provided her with a wealth of knowledge to inform her teaching. She reported that when Peggy introduced her to integrated teaming, she found this background knowledge extremely helpful in carrying out the team's goals.
Working With the Team

Role as a Team Member

Peggy had told me that the team looked to Janis to help them make their ideas concrete. Janis, she said, was expert at planning "how it looks on the paper and the order of what goes on in the classroom and all the detail things that one has to know to make something go smoothly." Mark stated that "Janis is so well organized." A look at the three teachers' individual teaching plans would substantiate this view. Peggy and Mark kept very informal plans on loose sheets of paper, but Janis' plans were detailed neatly in a plan book.

Janis also saw herself as "the organizer on the team."

I think I've got the ability to look at how we can rearrange things. Some of the times they come up with the brainstorms built up on one another, but putting the times together for changing the classes or changing from the three rotations to the two rotations--It seems that I can do that easily and put down, "Well, let's try this" and then give copies of the stuff to the folks.

In team meetings Janis was observed to be concerned with how general planning was translated into what was actually going to happen in the classroom. Peggy told me, "Janis can operationalize any concept. It's a real good testing ground to see if it makes sense and if it's real."

When a particular instructional focus had been identified by the team, Janis was often the one to suggest a specific lesson idea to address it. She reminded the others of details that would make the lesson more successful. Examples included needed materials, time constraints, efficient procedures, and important ideas to stress. An example was when she was explaining to
Mark how he could teach students about distance and scale by having them create maps of imaginary islands. Janis described what Mark could direct students to put on the maps, a possible time frame for completion, and the main ideas to stress. Referring to another lesson, she added, "And you're going to do something concrete, right? Tell them to use lots of color?"

Peggy said they also relied on Janis to represent the team's plans in written form so that they made sense. Janis also created attractive visual materials for teaching use, for communicating with parents, and for professional presentations. These contributions were highly valued by her teammates who mentioned them frequently. Composing was difficult for her, Janis confessed, but easy for Peggy, so after Peggy wrote it down, Janis transformed it into a more attractive format. "I'm the only one who can print decently...so things that need to be written up...I often do that."

Janis described her role as an organizer in helping the team establish processes for working together. She became familiar with a variety of team building activities through her training as a teacher consultant and her experience working with the high school peer leadership program.

So I use a lot of those techniques in what I do within my classroom and I think that's what enabled us to become a team also, using some of those same things...We've done some very basic things with answering some questions and getting different viewpoints...and that's one thing that we do with our own team too when we first came together that I thought was real important.

Janis believed this helped them to become "more aware of each other as
individuals. I think the more you know about people, not necessarily their deep innermost thoughts, the better working relationship you can have than if you don't know anything about the person."

As the team began to formulate their plans for the year, Janis drew again on her knowledge of teamwork to organize routines for planning and problem-solving. One such routine that the team used often involved brainstorming using colored markers and large chart paper. It seemed that as the team conceptualized curriculum themes and suggested partially thought-out ideas, Janis, as the organizer, provided practical ideas, written plans, and routines for actualizing the plans.

Rewards of Change

For Janis, the most important reward of this year's changes was the increased degree of support that team members received from each other.

Well, I think that the main thing is just again that camaraderie that's developed. We're therefore each other in things that are not academic and aren't school related. I think we're much more aware of what's going on with each of us and what may be a reason why we're up or down one day and then support each other through that also.

Janis felt supported professionally as well as personally, because of the sharing of ideas and teaching responsibilities.

I think that it's made all three of us stronger teachers...We've each been able to take our strengths and utilize those, and there's somebody else to pick up on our weaknesses. I think planning's gone a lot better because you have three ideas being joined in to make the total curriculum or unit of study instead of just one
person's ideas on what they think should be taught.

Team members also supported each other by adjusting their plans or taking on extra tasks when one of them had too much to do or needed assistance. Janis called this "picking up the pieces" for each other. Having the support of a team meant too that Janis had others with whom to share the daily experiences with students. As part of a team, she said, "You had other people to talk to about them to see if you were on the right track or if other people were having problems or difficulties." The team support offered advantages not enjoyed by "one person in one classroom with one set of kids doing your own thing throughout the day."

Janis thought that the curriculum had been enriched by the kind of teaming done this year. "I thought we covered a lot more than I would have as one teacher trying to teach the topic." Students were exposed to three different aspects of each topic by three different teachers. Therefore, Janis said the study was "much more in-depth which I think leads to increased student understanding and their interest in it."

She also felt a sense of freedom from being released from the previous grade level content expectations.

There were certain units that I felt that I needed to get through because other sixth grade teachers were doing that. So even though I could go at my own speed and plan my own activities there still had to be a stopping point and...you felt some pressure to go on.

This year, she said, "We're not tied into that curriculum and I don't feel that."
Difficulties of Change

Of the three teachers on the team, Janis spoke least about disadvantages of this year's changes. I asked her what she had found difficult or what trade-offs she may have made in terms of rewards and sacrifices. She replied, "There's not a whole lot! And I'm sure if it was something that was really strong that I had to really compromise on that I'd be able to think of that right away and there's nothing that stands out." She said that what she had done this year in her classroom was very similar to what she had done in the past. "I haven't had to give up my individual beliefs, my ideas, and my teaching style from the past to be a part of an effective team." She thought that this would probably not be true for many other teachers.

Although the goals of the integrated team were highly compatible with Janis' usual way of teaching, there were important differences in "what was taught and being able to work with other people." Janis acknowledged that these changes did present some difficulties although they were not insurmountable, and she said at the end of the year that "it was worth the effort." The biggest change seemed to involve finding time for a different type of planning as well as the usual demands of preparation and pupil assessment. Janis explained, "The planning needs to be done at school" because the team must do it together. This was hard for Janis in the beginning, but she said, "That's become my style now."

Initially, Janis' greatest concern was that team planning at school meant
giving up time she would normally spend grading papers or preparing materials for classes.

I used always to work a lot on school stuff...I can’t, as Peggy does, just leave this stuff here and come back and it will still be here another day. I’ve gotta do it...I work ’til 11:00 at night so many nights doing this stuff and yet still come [at] 7:00 in the morning so we can meet together and [again] during my planning period.

In addition, Janis had to have all teaching materials prepared and set out each day before meeting with the team. "There’s no other time to do it. So I meet here and I still take everything home that I have to do on my own. So it’s like I’m doing twice as much right now."

The pressures of finding enough time were compounded for Janis by the fact that she often helped Mark with planning his lessons. Mark had acknowledged often that he turned to Janis for ideas. Janis said she often wanted to say to Mark, "I'll help you do your lesson," but then told herself, "No, don’t do that." When the team agreed Mark would do something and then it didn’t go the way Janis wanted it to, she thought, "Well, we should have talked about it more." Steve suggested that this might be how she insured that her high standards were met, and Janis agreed that perhaps this was true. Whatever the reason for Janis’ feeling responsible for helping Mark, this undoubtedly created yet another competing factor for her time.

No easy solutions were found for these concerns, but the team made adjustments to the daily schedule to build in a little more teacher time. At the end of the year evaluation meeting, Janis still spoke of the need to address this
problem and described steps she had begun using to gain valuable time.

The emergent nature of the curriculum presented other challenges. Janis reminded me that she was, in some cases, teaching topics not traditionally taught in sixth grade. This created demands for "accessing information" as well as the task of planning lesson strategies. "I can't just go to the textbook and say, 'Well, we're going to do the next chapter in there and pull out worksheets that I have from years before.' She related this to the experience of a "first year teacher who doesn't have anything made up for the units that they're going to teach and how they constantly have to do that to be one step ahead."

The team's goal of involving students in determining the curriculum content meant that Janis could not prepare long-term plans in any detail.

We're one step ahead, but not any farther than that because the kids are helping to dictate where we go. We can come in and say, 'Well, tomorrow this is what we need to do,' and we'll throw together a lesson that does that.

Making It Work

Personal Relationships

As one might expect from Janis' concern with students' affective needs, she believed that teachers' affective needs were a crucial element in the success of the team's curriculum work. "I just think that interpersonal relationships need to be part of what you're doing." She recalled that as a volleyball and track coach she periodically did team-building activities with the
team members. She applied the same principles to her teaching team.

The more camaraderie they have, the better they're going to be able to work with each other. If you throw three or four random people together and don't do any team-building at all, they could have the best ideas, but I don't think it's ever going to gel.

Janis described how her team had done team-building activities with a group of school board members and school administrators "to build that understanding of where each group is coming from." Listening to one another is essential, in Janis' opinion, to successful team functioning. She believed that listening to each other's interests and concerns is the reason the team was able to plan curriculum together.

If we weren't doing that, this program wouldn't be happening right now. And if we couldn't have been doing that through the summer and to the beginning of the year...we would have gone back. We would be traditional and we would have said, 'Forget it. I'll teach science. You teach language arts...'

Janis did not think that rapport happened by chance. She believed the team built it through activities intended to develop habits of listening to other's perspectives.

**Responsiveness to Specific Needs**

Janis stressed that the curriculum developed this year was specific to this group of students in this place and time. When the team explained their work to groups of teachers from other schools, Janis reminded them, "It's not going to be a canned program that you're going to take back and do that's going to solve...the problem there." She said teachers must develop curriculum
"based on their needs and their interests and knowing their students and their population." This would be different, she said, for every school. She recalled that during a presentation to teachers in another community, Steve had said their program could not be duplicated in exactly the same way.

Because it's so much of us and what we've put in and our own ideas which may not fit with another group of teachers. You think general ideas, but part of it's got to be from yourself, and that makes that ownership anyway.

The curriculum, Janis believed, needs to be responsive, not only to context-specific needs, but, should change in response to varying needs over time. Sometimes the team made adjustments in procedures and routines to better meet their needs. "We've decided that...if things are getting so cramped we can't get stuff done that our schedule is flexible. We should be able to change that." Adjustments included such things as decreasing the number of student/teacher reading conferences and increasing the length of core class sessions to make it possible to explore topics in more depth. "And again we change things...It's one week and the next week it's changed! And next week it's something different. We just keep trying."

Janis expected the curriculum would also continue to change in more fundamental ways. One reason for this would be that this year had taught the team "what needs to be changed and how we need to approach things differently." She said she already knew things she would change. For example, she said, this year she had been unfamiliar with the new math book and had to prepare for a math lab for the first time. She learned what parts
of the book to skip and what skills students would need extra time on.

Explaining that next year will be easier in some ways, Janis said the team now has built a basis for curriculum focus with the themes they explored this year. "But it's still going to be a very different group of students and the direction of things could go very differently or they may not get into one thing that we spent a long time on [this year]." Janis referred to some lessons the team had planned in response to their realization that students had been using terms like area and population density without understanding them. Next year, Janis said, "They might all get that knowledge, and that may not be an issue, so we don't have to do that next time."

Janis reiterated her belief that "the middle school curriculum has to be student-centered." This fact, she believed, meant that the curriculum must always be subject to change if it were to be responsive to changing populations and their needs. Therefore, she did not know the extent to which this year's plans could be used again.

I think we'll probably talk to the students again at the end of this year to see about what we did and if it met their needs. I also feel that we'll be more in tune at the beginning of next year, that we can sit down with the students right away at the beginning of the year and say, "What do you want to do?" Because we know that can be done.

A Supportive Environment

Janis described also the conditions she believed must exist in order to nurture the kind of curriculum change efforts engaged in by the integrated team. First, she mentioned the principal's role.
You'd have to have a very supportive administrator—someone who believes in that concept, and, if difficulties arise with the parents or whatever, is able to handle that...You know, we laugh and say Steve is one of our team members, but then it's real important in helping with the support of that and...helping to explain that process to other people.

A facilitative physical environment is also needed to support innovative curriculum change, Janis believed.

There needs to be space in the building to work, both in the classroom and for the things that you're doing out of the classroom. When we put our students together for one major learning type things, we wouldn't know where to go. When they're sharing their demonstrations, we've got nowhere to do that.

During the year the team was frequently observed scheduling things in terms of when some school space might be temporarily available for their use. For example, the school cafeteria was used for student/parent conferences, and videotaping was done in classrooms vacated by students on a field trip. In fact, one team meeting I attended took place in the principal's office which he obligingly left for an hour.

Janis also emphasized the need to "rework schedules" so that teachers have time to carry out planning with their colleagues. The importance of this to her was apparent in her descriptions of her difficulty in finding enough time to plan and prepare for teaching. She believed that if teachers were going to take on new curriculum roles, there would have to be new ways to structure the school day to accommodate this kind of work.

Janis believed that her team had managed to achieve their goals to a
large degree. She thought that greater availability of time and space would enhance their effectiveness and remove sources of stress. On a positive note she hoped that perhaps their efforts would show others that curriculum change could occur in less than ideal contexts. The integrated team, she said, had a typical mix of students and had few special materials or supplies. They also had three of the smallest classrooms. "So I think that under some adverse conditions we're seeing success and other people can see that too."

**Summary: Janis**

Janis' curriculum decisions were based on her beliefs about the characteristics of middle school students and how they learn best. These beliefs included several key elements. First, she believed that for middle school students, peer and family relationships and issues of self-esteem were of primary importance and must be dealt with before academic learning can take place. She also considered preadolescence to be a time when students were making crucial life choices and were at-risk for beginning many destructive behaviors. However, she stressed that her students were still children in many ways and had some of the same needs as elementary school students. In terms of cognitive development her instructional decisions assumed that many of her students were not yet abstract thinkers and therefore needed concrete and visual means of learning. She believed her
students learned best through active participation and social interaction with peers.

These beliefs about preadolescents were joined with more general theories about learning. Janis was very concerned about students' engagement with the content and the processes of learning. She related a high level of engagement to greater enthusiasm for learning and greater retention of information. She also thought that learning was increased when students used their learning through applying it and teaching others. All of these beliefs significantly influenced the kind of curriculum Janis considered appropriate for her students.

In order to engage students, Janis thought the middle school curriculum should be centered on interests and concerns common to preadolescents. Students, she believed, should be actively involved in making choices about what they studied, setting goals for themselves, and solving meaningful problems. She saw herself as a guide for learning rather than as the sole provider of information. She saw students as important resources for each other and encouraged cooperative group work and peer teaching. In her opinion, the processes of learning, such as accessing information, working with groups, and communicating what was learned, formed as important a part of the curriculum as did disciplinary content.

One of Janis' priorities was to address affective and social needs of her students. Her experiences as a teacher consultant on affective education had
equipped her to address these needs. She used a repertoire of activities to help build students' self-esteem and she also initiated special school-wide programs for this purpose. The importance she attached to affective needs was also evident in her expressed views that learning should be fun and that extracurricular activities and personal recognition were important to the overall education of the child.

Janis' definition of curriculum seemed still to be evolving. She most often used the term in its commonly understood sense to refer to the content required by the course of study. When she talked about how this year's curriculum was different, she first described changes in disciplinary content. However, she also pointed out that she was teaching learning processes as much as disciplinary content. She also differentiated between the curriculum of the course of study and the curriculum she constructed with students in her classroom. Janis described a view of curriculum that she could not express with the familiar terminology.

An examination of Janis' curriculum knowledge revealed that she had a considerable degree of content knowledge and pedagogical expertise. She was observed most often teaching math or science, areas in which she had a great deal of teaching experience. In math, she had also received recent additional education. She also possessed an awareness of how disciplinary topic related to each other. This year she had been surprised at how easily she had been able to integrate content areas.
Janis gave a high level of attention to planning teaching strategies, and a large degree of correspondence was apparent between these strategies and her curriculum beliefs. She was observed frequently using hands-on activities often involving manipulative materials. Students worked in small groups daily, and Janis structured the work of the groups to ensure that all students participated. She explicitly taught the skills of cooperative learning. The materials and methods she used carried out her beliefs that learning is doing, learning is visual, and learning is fun.

Both Janis and her fellow team members described her as "the organizer" on the team. An important function she performed was to provide ideas and details necessary to operationalize the team's plans and to turn general intentions into specific plans. The team also appreciated her creation of visually appealing formats for their communications with parents or other teachers. Perhaps most important of all was her sharing with her teammates her repertoire of lesson ideas and teaching strategies.

For Janis, the most important reward of this year's changes was the increased personal and professional support that the team provided its members. In addition, she believed that the curriculum was enriched because of the pooling of ideas and teaching strengths. She also enjoyed being released from the constraints of the previously required course of study.

Janis felt that, of the three teachers on the integrated team, she had to change least in order to carry out the team's goals. She said that her teaching
this year had been very similar to the ways she had taught in the past. She was aware, however, of important differences in the content that was taught and of new demands involved in working so closely with others.

The greatest difficulty, she found, was in giving up time for her own work to allow time for team planning. She sometimes felt she was spending twice as much time than in previous years. One reason for her increased workload was that she had to prepare for teaching topics she had never taught before. Also, the emergent nature of the curriculum meant that she could not always do long term planning and preparation.

Janis listed several factors that were important in determining the success of curriculum change such as that undertaken by her team. The most important factor was the quality of interpersonal relationships developed among team members. Rapport did not happen by chance, she believed. There were specific activities which could facilitate team building.

Another element Janis thought was crucial to successful curriculum change was the realization that strong curriculums are context-specific. She believed that teachers should avoid "canned" programs and instead develop curriculum based on the needs of specific populations. She also said that teachers put something of themselves into their curriculum decisions. Finally, she stressed that curriculum should remain flexible to adjust to changing needs.

A supportive environment was important to encourage curriculum
innovation. The principal, Janis believed played an important role, especially in smoothing relations with parents and other teachers. It was also important to have adequate space and materials to carry out curriculum intentions. Finally, Janis believed that if teachers were to assume new curriculum planning roles, the school day must be restructured to accommodate this kind of work.
THE PRINCIPAL

In the course of carrying out this study, I have realized that the principal, Steve, filled a role this year that went far beyond that of the usual building administrator. Besides appointing the teachers on the team, he was closely involved in its day-to-day work to the point that both he and they considered him in some sense a member of the team. Data provided by the teachers indicated that he supported the team and used his influence to provide political support for their decisions. This, they felt, allowed them to experiment and take risks. The case studies also yielded examples of ways in which he facilitated the work of the team by lessening practical constraints and providing resources. Finally, he functioned as an instructional leader who raised important questions about teaching and learning.

During my observations I encountered many instances of Steve's facilitation of the team's work. One of the most important things he did was to help the team to gain valuable time for team meetings. He arranged the daily schedule so that their students would be with resource teachers at the beginning of the day, thus freeing the team teachers for planning together. On at least one occasion, when the team had an urgent need to meet, he arranged for substitute teachers to cover their classrooms and took one class himself.
He more than once provided his own office space for team meetings.

Steve also promoted the work of the team by providing resources. Whenever possible, he saw to it that they had what was needed for their unique curriculum. These included such things as a computer, telephone, books, and other material resources. Recognizing that the team needed to spend time planning together outside the school day, he allocated some of the budget to provide compensation for some of these meetings. All of these things helped to provide psychological, as well as practical, support for teamwork.

Steve discussed with me the elements he considered necessary for teachers to be able to carry out the kind of curriculum work undertaken by the Integrated Team. These elements fell into three broad elements: time, human resources, and material resources. "We've learned it's time, time, time. If we want teachers...to be true curriculum developers for a new program, we must give them time to do that." He believed that administrators needed to provide for the additional time teamwork required beyond the teachers' usual tasks.

If curriculum responsibility is given to teachers above their usual tasks, he stressed that there must also be changes in the ways in which teachers must be reimbursed. He has done his best this year to try to address this. He was able to pay the teachers for some of their team work sessions. During the summer and fall he said he tried to "garner resources that I knew we were going to need...I do not expect these teachers to continue to give their time. Over the long haul that'll burn them out. And I don't want to be a part of that
process." He believed that the team had been somewhat limited by the lack of available resources this year. "I've got to fatten the budget to allow those teachers to purchase a much different array of instructional resources than we've ever had."

Teachers also need to take advantage of human resources, Steve said. He gave examples of the help that had been received from the university. He said teachers should not be afraid to say that they did not have all the answers and should "reach out to businesses and professionals at different levels in their career and be good listeners." Steve also stressed the need for better communication among teachers at different grade levels.

Even though we're developing our own curriculum for this group of kids, we can't do it in a vacuum. After nine months they're going to be leaving us, and nine months prior to when we have them, they came from an environment that impacted them in some way. So we need to talk, to share, to observe where these kids are headed and from whence they came.

As Steve described to me his administrative philosophy, it became clear that he strongly believed teachers have an authentic and important role in curriculum making.

"I've learned that teachers, if given the latitude and encouragement and support can be much more effective curriculum developers than a Board of Education or the State Department or a committee of teachers who try to represent all the kids in the district...Any time decisions about curriculum are made away from the classroom, you lose validity. When someone who doesn't know children tries to make decisions about those children or for those children, there's just a gap of what somebody thinks should be taught and what, indeed, kids are actually taught. The closer to the classroom those decisions are made, the more relevant, the more real, and the more more effective those
decisions are.

The harsh reality for teachers is that it's always easier and a lot
less time-consuming just to take the existing course of study and
develop your unit plans and lesson plans around what somebody
else has told you it's important to teach.

What the Integrated Team did this year was, in Steve's opinion much
harder, but much more rewarding. He hopes to encourage other other teachers
to take on that responsibility. "To me that's the essence of professionalism."
He doesn't believe, however, that he as a principal can cause that to happen.

"Teachers initiate change. If any school board or superintendent
thinks that they initiate change, they're mistaken. I cannot
initiate change. I can support it. I can set up the environment.
But it has to come from the heart of the teacher.

He referred to a group of teachers who had approached him about forming a
restructured team next year. This was a result, he believed, of seeing the
Integrated Team work this year. "They've seen what can happen when
teachers have some autonomy, and they like that." Their plans are similar in
some ways to those of the Integrated Team, yet they are different. This is
okay with Steve as long as they are consistent with what he describes as the
school's focus on the needs of children.

My objective, my vision, is not to have every teacher in this
building teach in the way Peggy and Mark and Janis teach. We
have some common missions, but we can differ on how to get
there. I've said we want teachers to know what the mission
is...and I'll give teachers latitude on how to get there.

The mission Steve described is very similar to the child-centered views
espoused by the individuals on the Integrated Team. "They're all different, but
they come from the same perspective in terms of what they want to accomplish. Their philosophies are similar. How they deliver that is very much different." He also confirmed the team roles identified by team members. He saw their diversity as a source of both strength and weakness.

I think the strength of the team is really that each teacher can bring his or her own strengths to that team concept. And the weaknesses of the team are those situations where someone may not be able to provide information or deliver the program the way it's supposed to be.

In conclusion, the data from individual case studies, observations throughout the year, and lengthy conversations with Steve revealed him to be an instructional leader who was interested in the substance, as well as the process, of change. He said that when teachers approached him with ideas for curriculum change, "the key word is 'why'. We need to get teachers thinking more about why we're doing things and then why are we changing?" He expected teachers to "justify and defend" the changes they want to make. Then his role will be to facilitate that change in every way possible.
CHAPTER V
CONCLUSIONS AND RECOMMENDATIONS

Introduction

The purpose of this study was to provide an in-depth look at curriculum change initiated and carried out through teachers' collaboration. Throughout the course of one year participant observation was used to explore the curriculum deliberations of a single team of middle school teachers engaged in an innovative program of curriculum development. An unusual characteristic of this study was that it focused on a curriculum which was developed by the teachers in accordance with goals they themselves had formulated. Teachers became agents who made decisions about the desired ends of curriculum as well as the means to achieve these ends. The more usual pattern is for teachers to focus their curriculum efforts on developing instructional methods to carry out or adapt a curriculum designed by specialists outside the classroom.

Much of the prior literature in the field of curriculum study has aimed at better understanding factors affecting implementation of curriculum and especially at developing ways to ensure that teachers implement it in ways
that are congruent with the theories of the designers of the curriculum. This study, in contrast, has been influenced by another growing body of research which views the teacher as a deliberative curriculum agent and the curriculum as inseparable from the practice of teaching (Connelly & Elbaz, 1980). When teachers are thus seen as active curriculum agents, curriculum itself becomes an emerging construction of teachers and students in a situated context. The work of teachers is therefore central to understanding how curriculum is planned and enacted in classrooms.

Another significant characteristic of this study was that it focused, not only on the curriculum beliefs and understandings of individual teachers, but on their interactions in the process of team collaboration. Interdisciplinary teams have recently been the focus of increasing attention in the context of school restructuring, especially at the middle school level. Because of this, there was a need to examine more closely how individual teachers' curriculum conceptions influenced, and were influenced by, their interactions with the team. It was hoped that the study would provide insight into the process of teachers' joint curriculum construction and into the factors reinforcing or limiting such collaboration.

Three initial questions guided this study.

1. How do middle school teachers' knowledge, beliefs, and concerns affect the ways in which they plan and talk about curriculum?

2. When a middle school instructional team is involved in collaborative curriculum change, how are the curriculum
deliberations of the team influenced by the knowledge, beliefs, and concerns of the individuals making up the team?

3. What are important variables which limit or reinforce teachers' collaborative efforts to plan and implement middle school curriculum change?

Although these questions provided a focus for interviews and observations, a major concern throughout the study was to remain open to the perceptions of the participants rather than to preconceived notions of curriculum, teaching, or teacher knowledge.

Cross-Case Analysis

Analysis of the data across the three cases in this study yielded nine recurring themes relevant to the research questions. These have been presented in Table 1 as generalizations that held true for all three participants from their own perspectives and from mine. In the next section of this chapter I will explain how each of these generalizations are supported by the data from individual cases. These themes that emerged through the cross-case analysis led me to form several conclusions which have important implications for those interested in facilitating teachers' collaborative curriculum work. The analysis of the recurring themes will be followed by a discussion of the conclusions and their implications for practice.
Table 1. Generalizations Across Cases

1. The teachers' personal beliefs and concerns influenced their rationales for the curriculum changes envisioned by the team and their choices of the means to interpret curriculum intentions.

2. The teachers' individual knowledge influenced the ways in which they interpreted the team's envisioned curriculum.

3. The teachers agreed that teachers should be active curriculum agents who make context-specific decisions, not only about teaching methods, but also about what should be taught.

4. The teachers all cited team collaboration as a source of shared knowledge and of joint construction of new knowledge.

5. The teachers believed that each played a different role on the team and that their diversity contributed to the team's effectiveness.

6. The teachers listed as rewards of this year's collaboration an increased sense of personal and professional support and validation, improved curriculum for students, and improvement in the quality of teaching.

7. Difficulties cited most frequency by teachers were related to limitations in physical facilities and time constraints and to compromises in teacher preferences and habits because of team needs.

8. A shared vision of curriculum purposes was believed by the teachers to be the key element in determining the success of the team's change efforts.

9. Teachers all stressed the critical importance of the principal's strong support in carrying out curriculum change.

Teacher Beliefs and Concerns

The teachers' personal beliefs and concerns influenced their rationales for the curriculum changes envisioned by the team and their choices of the means to interpret curriculum intentions. Key beliefs and concerns were identified which helped to define individual teachers' curriculum orientations. Data from interviews and observations also suggested a high degree of consistency between these beliefs and concerns and the levels of significance
particular teachers accorded to specific curriculum decisions. For example, Peggy's concern with preparing students for what she saw as "the real world" was reflected in her attitudes about content, learning processes, and her own role as a teacher. The three case studies yielded many such examples which are summarized in Table 2.

<table>
<thead>
<tr>
<th>Motivations for Change</th>
<th>Dominant Concerns</th>
<th>Instructional Strategies</th>
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<tbody>
<tr>
<td>Peggy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implementing middle school philosophy</td>
<td>Addressing needs of adolescents</td>
<td>Teacher models, builds structure, facilitates</td>
</tr>
<tr>
<td>Seeking professional challenge</td>
<td>Preparing students for &quot;real world&quot;</td>
<td>Cooperative learning, some structure</td>
</tr>
<tr>
<td>Advancing political goals</td>
<td>Empowering learners</td>
<td>Discussion of issues, concerns of students</td>
</tr>
<tr>
<td></td>
<td>&quot;Making sense of knowledge&quot;</td>
<td>Students accessing, organizing, sharing knowledge with peers</td>
</tr>
<tr>
<td>Mark</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Putting philosophy into action</td>
<td>Understanding, communicating</td>
<td>Teacher-guided discussion, connects current events</td>
</tr>
<tr>
<td>Working with respected peers</td>
<td>&quot;Selling ideas&quot; to kids</td>
<td>Teacher provides resources</td>
</tr>
<tr>
<td>Learning new ways to teach</td>
<td>&quot;Localizing&quot; knowledge</td>
<td>Cooperative learning, not structured</td>
</tr>
<tr>
<td></td>
<td>Seeing learning as connected whole</td>
<td>Use of peers to explain</td>
</tr>
<tr>
<td>Janis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asking questions about teaching</td>
<td>Getting kids involved</td>
<td>Use of manipulatives, visual, concrete learning</td>
</tr>
<tr>
<td>Being on the &quot;cutting edge&quot;</td>
<td>Meeting affective and social needs</td>
<td>Cooperative learning, skills explicitly taught</td>
</tr>
<tr>
<td>Sharing ideas with others</td>
<td>Learning by doing</td>
<td>Affective learning activities</td>
</tr>
<tr>
<td></td>
<td>Learning with peers</td>
<td>Use of peer tutoring</td>
</tr>
</tbody>
</table>
For all teachers a high degree of consistency was found between their motivations for putting effort into curriculum development, their dominant concerns and curriculum priorities, and their instructional approaches. (See Table 2.) This is not intended to suggest that a perfect match was found between envisioned curriculum and enacted curriculum. It also does not address in any substantive way the issue of "words and deeds" (Deutscher, 1966). However, the recognition of this consistency does serve to underscore the relationship of teachers' beliefs and concerns with the curriculum decisions they make. This can be illustrated by examples from each case study.

Peggy's motivations for initiating this team curriculum effort were based largely on her need for professional challenge and on the goals of empowering teachers and learners and advancing a particular middle school philosophy. She furthered these goals in the classroom through her stress on teaching processes for independent learning and her attempts to give students a voice in choosing curriculum content. Her beliefs about appropriate middle school education caused her to stress the relevance of content to students' interests and to their social and affective needs. She satisfied this concern in part by her use of active learning strategies and cooperative groupwork and her encouragement of student choices of learning activities. Finally, her need for professional challenge was met by the opportunity to implement theories she had developed through academic study and teaching experience.
In contrast, Mark's chief reason for participation in curriculum work was based on his perception that he would be able to make his teaching more congruent with his personal philosophy which he described as "people-centered". His motivation was increased by his desire to improve his practice by learning from peers. His curriculum goals were in keeping with his personal concerns. He believed that knowledge should be personalized for students and made applicable to their lives. He placed a high value on communicating and on learning from other people. These beliefs were visible in his encouragement of peer tutoring and groupwork and his frequent attempts to relate content to current events and community problems. These beliefs also caused him some dissatisfaction when time constraints limited his one-to-one conversations with students.

Janis was asked to join the Integrated Team at a time when she was questioning her own teaching practices in the light of new ideas. She liked the idea of sharing good ideas with her peers using skills she had developed as a consultant. She brought a repertoire of activities for team-building, affective education, and cooperative learning to the work of the team and to her classroom instruction. She also shared with her colleagues her ideas for teaching in concrete, hands-on ways. In the classroom these instructional practices carried out her beliefs in getting kids actively involved in learning and learning by doing. Her explicit teaching of cooperative learning strategies advanced her goals of meeting affective and social needs and helping students
learn from each other.

Examination of the interview and observation data revealed that the teachers were substantially in agreement on the types of instructional practices they espoused. Such practices included cooperative learning groups, active learning, hands-on activities, and attention to learning processes. However, each teacher justified these practices on the basis of different curriculum goals. These practices also appeared in varying degrees and took different forms in each classroom. Differences in personal focus may help to explain, at least in part, such questions as why cooperative learning looked very different in each of the three classrooms, why controversial issues were important content in Peggy's class, or why concrete, visual materials were seen most in Janis' class.

Teachers' Knowledge and Their Curriculum Visions

The three teachers on the Integrated Team held different kinds of knowledge which also affected the ways in which they interpreted the team's envisioned curriculum and the strategies they chose to achieve these purposes. Each teacher exhibited and perceived themselves to hold a somewhat different body of content knowledge and a different repertoire of instructional strategies. They also revealed differences in the degree to which they were able to bring other types of practical and theoretical knowledge to their curriculum deliberations (See Table 3).
<table>
<thead>
<tr>
<th>Peggy</th>
<th>Definitions of Curriculum</th>
<th>Sources of Curriculum Knowledge</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Theory-oriented</td>
<td>Experience of Practice</td>
</tr>
<tr>
<td></td>
<td>Curriculum is a conceptual framework</td>
<td>Research and scholarly literature</td>
</tr>
<tr>
<td></td>
<td>Curriculum is an unfolding creation of teachers and students</td>
<td>University coursework</td>
</tr>
<tr>
<td></td>
<td>Content should be based on student interests, needs</td>
<td>Professional committee work</td>
</tr>
<tr>
<td>Mark</td>
<td>Practice-oriented</td>
<td>Experience of practice</td>
</tr>
<tr>
<td></td>
<td>Teachers &quot;pick and choose&quot; content and sequence</td>
<td>Personal life experience</td>
</tr>
<tr>
<td></td>
<td>Curriculum is inseparable from instruction</td>
<td>Communication with family, friends</td>
</tr>
<tr>
<td></td>
<td>Concern with curricular balance</td>
<td>Communication with colleagues</td>
</tr>
<tr>
<td></td>
<td></td>
<td>University coursework</td>
</tr>
<tr>
<td>Janis</td>
<td>Practice-oriented</td>
<td>Experience of practice</td>
</tr>
<tr>
<td></td>
<td>Teachers pick and choose content</td>
<td>Communication with colleagues</td>
</tr>
<tr>
<td></td>
<td>Curriculum combines course of study and student choice</td>
<td>Work as state consultant</td>
</tr>
<tr>
<td></td>
<td>Instructional processes are part of the content</td>
<td>Professional workshops</td>
</tr>
<tr>
<td></td>
<td>Concern with disciplinary accountability</td>
<td>University coursework</td>
</tr>
</tbody>
</table>

Peggy acknowledged two sources of her curriculum knowledge. She spoke of a knowledge of research and a knowledge of practice and said she drew from both. Of the three teachers she appeared to have been most
influenced by the theoretical knowledge of the university and of academic literature. She also was the only one to exhibit substantial knowledge of current trends associated with middle school restructuring. Peggy believed that her experience gained from working on professional committees and with the teachers' association enabled her to develop knowledge about adult learning. This, she believed, facilitated the work of the team. Finally, Peggy brought to the team her content expertise in language arts. She believed that the whole language approach was the embodiment of the child-centered philosophy of the team.

Janis also drew on a wide experience of teaching that provided her with specialized knowledge. She began as a teacher for children with learning disabilities before moving to sixth grade. She drew on this experience and that gained as a consultant when planning ways to build self-esteem and address affective needs. This year she accepted a large part of the responsibility for math and science because of her experience in previous years and because she had recently been part of a math workshop at the university. Janis' repertoire of strategies for teaching learning disabled students, her knowledge of hands-on science techniques, and the methods learned in the math workshop enabled her to implement her beliefs in concrete learning activities and learning by doing. It also appeared that Janis' greater awareness of content knowledge was also accompanied by more evidence of disciplinary loyalty.

Mark considered his most valuable knowledge to be his knowledge of
how to work with other people. He believed that he used communication skills
to reach students. This personal orientation is evident in his most frequent
choice of content to teach. Mark preferred the social studies because he could
easily relate it to students' daily lives. His knowledge of his students and their
families helped him in doing this. He also drew on his own teaching
experience to know what content, sequence, and pace were appropriate for his
students. In Mark's case, however, a perceived lack of instructional and
managerial knowledge caused him some stress and created a certain amount
of pressure to learn more. He had not yet developed a repertoire of the kinds
of active learning strategies agreed upon by the team, and he felt a need to
learn to teach and manage his classroom in ways more consistent with his
colleagues.

Teachers As Curriculum Agents

The teachers approached their curriculum deliberations from somewhat
different understandings about the nature of curriculum. Their definitions of
curriculum ranged from very theoretical and academic to completely practical.
However, there were substantial areas of agreement. First, all agreed that
teachers should be active curriculum agents who made decisions, not only
about teaching methods, but also about what would be taught. All the
teachers agreed further that teachers should be involved in establishing
curriculum goals or purposes, which they believed were inseparable from the
instructional means used to achieve those goals.

Peggy's view of curriculum was primarily a theoretical one drawn from both academic and experiential sources. She defined curriculum as a mental framework which provided a sense of direction. The details of content and process should not be prescribed, but should be determined by teachers and students in their particular classrooms. In support of this view she cited scholarly literature she had read. Peggy's insistence on teacher autonomy in curriculum decision-making was consistent with this literature and with her vision of teachers as empowered professionals.

The view of curriculum held by Janis and Mark, on the other hand, were completely practice-oriented. Mark, in particular, said that he never thought in terms of theory. Both Mark and Janis described curriculum as disciplinary content from which teachers selected what was appropriate for their particular students. Beyond this, Mark understood curriculum to include the ways in which teachers made content understandable to students. Janis went further, actually including the learning processes as part of the curriculum content. All the teachers agreed that curriculum could not be simply a predetermined plan to be implemented by teachers.

**Team Collaboration and Knowledge Construction**

The teachers all cited team collaboration as a source of shared knowledge and of joint construction of new knowledge. Individual teachers
attributed their curriculum knowledge to many sources. These included university classes, professional workshops, professional committees and task forces, books, and their own teaching experiences. All three teachers found their colleagues on the team and their principal to be valuable sources of knowledge. Another source of knowledge, however, became evident as the data were examined more closely. Much knowledge was constructed from interactions among the team members through their collaboration. This was not static knowledge, but instead was of a transactional nature, emerging through the nonlinear process of planning, implementation, sharing, revising, and continually consulting and evaluating.

Data from observations of team meetings revealed three principal activities through which knowledge was exchanged or constructed by team members. The teachers also acknowledged these knowledge sources in our conversations. First, the data yielded many examples of teachers simply sharing lesson ideas or managerial procedures. Janis, especially, was a frequent contributor of practical suggestions for operationalizing the team's curriculum intentions.

A second kind of knowledge-sharing resulted from the teachers' bringing back to the team their experiences carrying out team plans. This kind of sharing was observed to result in better understanding of the conceptual relationships among the content areas being taught by individuals. It also resulted in changes and refinements in teaching plans. Finally, the teachers
needed to address specific needs as they arose in the emergent planning/teaching process. Through brainstorming and other problem-solving procedures, the team constructed knowledge which was not previously available to them as individuals. All three teachers described how team collaboration had contributed in practical and conceptual ways to more individual insights into their own teaching.

**Diverse Team Roles**

The teachers believed that each played a different role on the team and that their diversity contributed to the team's effectiveness. Interviews and observation data revealed early in the study that each teacher was able to define his or her own particular role in working with the team. There was a high level of consensus among the team members about the ways in which each contributed to the team's work. Discussion of these roles was first observed in a team meeting and referred to often thereafter. Each teacher saw him or herself as contributing some skill or strength needed to support the team's efforts.

A strong correlation was noted between these perceived contributions and the characteristic features of each teacher's personal curriculum orientation. Teachers appeared, at least to some extent, to contribute to the work of the team in ways related to areas of expertise or of concern or interest for themselves. Peggy, for example, described herself as "the conceptual person
This role allowed her to explore her theoretical interests and academic knowledge of curriculum, middle school restructuring, and authentic assessment. Her verbal facility meant that she also had an important role as a communicator who could articulate the team's work in written form.

Janis, as "the organizer on the team", used her extensive knowledge of instructional strategies to help the team operationalize their curriculum intentions. For example, when team members planned in general terms to use cooperative learning or student demonstrations, she offered them very specific teaching ideas. Her interest in affective learning was apparent in her use of "teambuilding" activities with her colleagues. Her preference for visual learning and her skill with creating visual materials caused the team to look to her when they needed to represent their ideas attractively. Also her disciplinary knowledge made her primarily responsible for planning math instruction for the team.

Because Mark had no prior experience as a member of a team and because he perceived himself as lacking in some kinds of curriculum knowledge, he had a more difficult task in defining how he could contribute to team functioning. The role he did adopt was closely related to his dominant concerns as a teacher. He considered himself "a people person" and "a communicator", and he brought these concerns to the team. He frequently reminded his colleagues of the perspectives of the students, their families, and the larger community. He also was said to be "the realist" because of his
awareness of these other perspectives and because of his practical focus on the realities of the school context. Finally, his belief in learning from other people enabled him to use ideas from his colleagues while valuing his own contributions to the team.

Rewards of Collaboration

Individual teachers reported receiving a variety of rewards from this year's collaborative work. The benefit described by all three teachers as most valuable was the increased personal and professional support team members provided each other. The teachers varied in terms of how they valued the personal aspects as opposed to help in carrying out professional tasks. Mark and Janis reported an appreciation of the personal camaraderie that developed among team members. In contrast, almost all the rewards described by Peggy related to professional goals. All valued the professional validation of working with others who had similar goals. They also stressed day-to-day assistance the team members gave each other. This assistance took various forms, including help with students, practical suggestions, sharing the workload, or carrying on in case of a teacher's absence. All the teachers also mentioned rewards directly related to the nature of their specific curriculum design. Integrated teaming, they believed, provided a guarantee of curricular balance and depth, allowing them to concentrate on areas of interest to them they had previously not been able to teach. Also, they thought teaming strengthened
the curriculum because they were able to draw on a larger pool of ideas and were forced to think about the relationships among various content areas. There was agreement, too, that a team was able to contribute a greater variety of individual perspectives and strengths.

All three teachers reported that working on the team had improved the quality of the individual members' teaching. Janis said this was because each could capitalize on personal strengths and could count on others to make up for weaknesses. Mark and Peggy, on the other hand, said that teaming helped them improve their own teaching practice. Mark believed that he, especially, had been forced to learn from the others in order to make his teaching consistent with theirs. Peggy suggested that they had all grown professionally because they had been forced through the collaborative work to articulate their beliefs. They then reflected at a higher level about what they had accepted intuitively. In contrast, Janis reported no significant changes in her teaching practices.

Another source of gratification was a sense of professional validation from the recognition the team received from other teachers from within and outside their district. This was most important to Peggy and Mark. Janis spoke of this in a different way, in terms of a professional duty to share ideas which could be helpful to others.
Difficulties of Collaboration

This year’s change efforts were also accompanied by some difficulties reported by all of the teachers. These were of several types. The most commonly mentioned constraint was the necessity to consider all teaching decisions in relation to those of others. Another extremely important related concern was finding time for both collaborative and individual planning and preparation. Team members differed on the ways in which they expressed this concern. Peggy believed that the benefits of increased support and professional growth were tempered somewhat by a loss of personal flexibility due to accommodating the schedules of others. Mark was anxious about not being able to make detailed long range plans independent of others. Janis, especially, experienced stress because team planning at school meant long hours of individual planning in the evenings.

Another problematic area mentioned by all included the need for compromise and tact in handling relationships among teachers with different personalities and teaching styles. The teachers talked about this in various ways. Janis and Peggy described the difficulty of talking about observed problems without hurting feelings. Mark talked about the value of "give and take" and the need to avoid letting pride get in the way of working with others.

Whereas at the beginning of the year teachers voiced these interpersonal concerns to me individually, they were discussed openly among them in a team meeting in the spring. The consensus was that working together had made
them more aware of the need to deal with these problems and more comfortable with a greater degree of openness.

Compromises and flexibility were also required when content was divided and teaching responsibilities were assigned. Mark, in particular, was conscious of giving up teaching content that he enjoyed. Both he and Janis pointed out that the emerging nature of this year's curriculum meant that they often had to prepare quickly for teaching unfamiliar content.

Several areas of concern were mentioned by only one teacher. Janis reported that the emergent nature of the curriculum and the fact that she was teaching new topics meant that she had insufficient time to gather resources and to prepare lessons in advance. Mark alone reported discomfort due to the need to change his teaching style and to sacrifice practices and content he had enjoyed previously. Although all three teachers valued the collegiality of teamwork, Peggy also indicated that working so closely with others had been a big adjustment for her. However, she believed that the professional benefits outweighed the loss of privacy and autonomy she felt.

Practical constraints represented a source of difficulty that was only partially addressed this year. Chief among these were needs for physical space to carry out the nontraditional curriculum and adequate time during the school day for joint planning and student evaluation. All the teachers complained that, although their curriculum posed the most demand for large areas, their classes had been assigned the smallest classrooms. They explained that this
was because the principal had not wanted to appear to favor the Integrated Team. Therefore, dealing with the space problem was postponed until next year when the school grade configuration would be changing.

The problem of time was more successfully dealt with, although all three teachers still considered it only partially solved. They credited the principal’s support for the degree to which they gained the necessary time for teamwork. However, they all insisted that, in order for teachers to be successful in sustainable collaborative curriculum work, major changes must be made in the structure of the school day. In the shorter term, Janis suggested at the end of the year that the problem could be at least partially alleviated by redesigning student tasks to require less time-consuming evaluation and by allocating the workload more evenly among team members. Mark reminded his colleagues of the need to be realistic and limit themselves to what could feasibly be done given the time and resources they had.

**A Common Curricular Vision**

A summary of interview and observation data indicated several factors that the teachers considered critical to the success of collaborative curriculum efforts such as theirs. The single most important factor, in the opinion of all the teachers, was that the teachers possessed a common vision of curriculum purposes and similar teaching philosophies. Mentioned almost as often was the importance of having a team composed of teachers who were somewhat
diverse in terms of teaching strengths and styles. The first of these factors ensured that the team could quickly agree on fundamental goals for developing curriculum. The second factor meant that teachers were able to bring a wide range of knowledge, skills, and teaching styles to the team’s deliberation.

On almost every occasion when teachers mentioned some difficulty associated with the changes this year, they went on to stress that their common purpose made the struggle worthwhile. This was their common vision of a child-centered curriculum. All talked about the underlying commitment that was more important than their differences. Mark believed it was this commitment to a common purpose that enabled teachers to "give and take" and accept help from others. Peggy stressed that if team members didn’t agree on a common philosophy and fundamental beliefs about teaching, they would spend all their time debating and never be able to plan curriculum together. Although she agreed on the primacy of a common curricular vision, Janis also believed that the team could not successfully enact this vision without explicit attention to affective needs and building working relationships among team members.

Other elements believed important by all three teachers included positive support from school administration, particularly from the principal; a facilitative physical environment; and a restructuring of the school day to provide more time for collaborative work. Other factors deemed important by one or two teachers were time and effort spent on developing personal
relationships among team members, a recognition of the context-specific nature of curriculum development, and the establishment of flexible structures which signal a commitment to continued change.

The Principal's Role

All three teachers believed that the support of Steve, the principal, had been a critical factor in what they saw as the success of this year's curriculum changes. Peggy described his role as an initiator and facilitator of change. She thought he already had the idea of an integrated team in mind when he enabled her to go to the summer workshop on integrated teaming. Both Peggy and Mark stressed that Steve knew his staff well and knew whose personalities, teaching styles, experience, and philosophies of education would predispose them toward participating in an experiment with integrated teaming. This was especially important when one considers how crucial these teachers believed team composition to be.

It was particularly valuable to Peggy, for whom the empowerment of teachers was an important goal, that Steve treated teachers as peers and allowed them a great deal of autonomy in making curriculum decisions. She believed that he then provided political support for these decisions with parents, community, and school board. Mark, too, placed a great deal of value on this political support. He interpreted Steve's references to site-based management as authorization for the team to take risks in deviating from
traditional practices. Janis also stressed administrative support in interpreting the team's efforts to others, especially parents.

Steve's support was practical as well as political. In team meetings and interviews teachers frequently referred to materials or information Steve had provided them. He gave them unsolicited literature that he considered relevant or interesting to them, and he also helped to locate needed items, such as examples of rubrics to help them develop their student evaluation procedures. Teachers also described many instances in which Steve had helped them to gain time and space for teamwork. Teachers also described to me how he helped them to obtain needed teaching resources such as computers, books, and a regular substitute teacher for the team. He also arranged for financial compensation for some of the hours spent planning on weekends and during the summer.

It is probably significant that all three teachers perceived Steve's educational philosophy and curriculum goals to be consistent with their own. They described him as "child-centered", the term they used to define the philosophy they believed they held in common. Janis said that he believed in the concepts that guided the team's work and that they considered him "part of the team." Mark and Peggy also repeated that their team's goals were consistent with Steve's objective of making their school more responsive to the needs of its students.

At the same time, they praised Steve's abilities as an instructional
leader who raised difficult questions and made sure that the team addressed important, sometimes uncomfortable issues. For example, Mark said he expected Steve to ask them why they were doing things, and Peggy said she expected him to keep raising the difficult question of consistency in classroom management among the three teachers. However, because they perceived their philosophies and goals were consistent with those of the principal, the three teachers discussed concerns with Steve in a collegial, rather than an adversarial way.

Conclusions

This study corroborates much that was summarized in Chapter Two on teachers and curriculum change efforts. The findings are also consistent with more recent research on the relationship of individual teacher beliefs and teacher decision-making in the classroom (Hawthorne, 1992; Paris, 1993). Two things are new in this study. First, the curriculum change effort was begun and sustained by the teachers themselves rather than by an administrative or academic initiative. Second, this study focused, not only on the individual teacher's curriculum construction, but also on the interactive curriculum construction of the individual and the team. Both of these characteristics are important because they are relevant to current revisions of the curriculum roles of teachers, especially in middle schools, and to the promising role of teacher teams in the context of school restructuring (Maeroff, 1993).
Finally, attention to middle school restructuring has, according to Beane (1990), largely focused on school climate and team organization, neglecting some fundamental curriculum questions. This study provides some insight into how middle school teaching teams may be helped to work more effectively toward curriculum development.

Analysis of the single case studies and of the findings across all three cases enabled me to reach several conclusions relevant to the research questions. These are summarized in Table 4. Following the recommendations of Schwab (1970) to look at curriculum in the particular case, this study attempts to provide a close look at one curriculum change effort. The conclusions developed from this study would need to be tested in many other contexts before they would be able to claim any status as formal theories (Strauss & Corbin, 1990).
Table 4. Summary of Conclusions.

1. The curriculum work of a teaching team is enhanced when its members perceive that they share a common philosophy which underlies curriculum purposes.

2. Even when there is agreement on fundamental curriculum purposes, teachers' individual knowledge, beliefs, and concerns lead them to interpret these purposes in different ways and to value them for different reasons.

3. The curriculum work of a teaching team is enhanced when its members contribute a diversity in personalities and strengths while sharing a common vision of curriculum goals.

4. The opportunity to collaborate with colleagues in developing curriculum results in both the sharing of professional knowledge and the construction of new knowledge.

5. The rewards of collaborative curriculum work must be substantial and meaningful to individual teachers in order to compensate for the practical difficulties and individual sacrifices connected with change.

6. A critical element in teacher-initiated curriculum change is an administrator who believes that curriculum development is an appropriate role for teachers and who gives practical support in that role.

The next section of this chapter will discuss the conclusions which emerge from these findings. Discussion of each of these conclusions will be followed by consideration of their possible implications for educators and researchers.
Common Philosophy

The curriculum work of a teaching team is enhanced when its members perceive that they share a common philosophy which underlies curriculum purposes.

Discussion:

After sharing this year with the Integrated Team, I concluded that, at least for these teachers, the most important factor that contributed to their collaboration was the perception that they shared a common curricular philosophy. Throughout the study I was impressed with the frequency with which the teachers talked about a shared curriculum philosophy which they described as "child-centered." This term was interpreted by each in a slightly different way, but it retained a core of meaning common to all three. Peggy, influenced by the literature of middle school reform, stressed most the importance of meeting the developmental needs of early adolescents. Janis shared this concern for meeting developmental needs, but her teaching was also shaped by her awareness of individual cognitive styles. This was perhaps due in part to her background as a teacher of children with learning disabilities. Mark's child-centeredness was less focused on a specific developmental stage, but was based on a belief in the uniqueness and value of all people as individuals.

The common element of belief among these three individuals was the
idea that curriculum should be based on the needs of particular students rather than on a preestablished body of content. This belief was quite different, for example, from a discipline-centered approach, and it resulted in quite different kinds of curriculum decisions. Their definitions of students' needs tended to be based more on social and emotional needs and on predictions of processes and skills needed for future independent learning than on disciplinary canons. It could be speculated that the teachers' elementary certification backgrounds may have had something to do with this orientation toward curriculum content. In any case, their lack of disciplinary loyalty was a major factor in their interest in integrated curriculum.

The fact that the teachers shared a common vision of curriculum as "child-centered" had several important results. The most relevant to this discussion was related to the team's ability to reach consensus on such things as desired student outcomes, appropriate teaching strategies, evaluation processes, and curriculum content. The team's fundamental agreement on the "why" of curriculum allowed them more time and energy to concentrate on the "how." As Peggy said, if this agreement had not been there, they could have spent all their time arguing rather than developing curriculum. A shared curriculum vision also resulted in other benefits such as a sense of validation of personal beliefs, a higher level of professional reflection, and a high level of commitment to the change effort. These aspects will be more fully discussed in a later section of this chapter.
Implications:

The goals of the Integrated Team in this study went far beyond what is usually intended when teachers are organized into teams. Maeroff (1993) has described a number of types of teams which might be formed to fulfill different purposes. These purposes include, but are not limited to, governance, collaboration among subject matter experts, grade level organization, staff development interest, or interdisciplinary coordination of instruction. The Integrated Team's aim was much more ambitious. They were trying to create for their grade level a totally integrated curriculum and to collaborate in all aspects of their teaching. This emphasis on curriculum made it more crucial that they shared a conception of what kind of changes were needed, rather than just having an openness to change in general.

The crucial importance of teachers' sharing a common vision of curriculum should not be underestimated by administrators who want to involve teachers more actively in curriculum collaboration. The congruence of teacher beliefs with the underlying purposes of proposed curriculum has been a critical, but overlooked factor in the success or failure of many curriculum innovation attempts (Fullen, 1993). This seems to be especially true of projects where teachers are involved only at the implementation stage of curriculum development. As Werner (cited in Fullen, 1991) has observed, successful curriculum implementation required shared understanding among teachers of the "presuppositions, values, and assumptions which underlie a program..."
(p. 132). Only then can teachers collaborate to develop teaching plans which are faithful to the spirit of the innovation and which will be carried out in ways consistent with curriculum purposes.

In cases involving implementation of externally developed curriculum, this means that teachers must be engaged early while goals are being articulated (Bolin, 1987). This suggests, I believe, that significant curriculum change cannot be imposed in a top-down manner. Further, just having teacher representatives involved in developing curriculum which they are supposed to "sell" to their peers does little to ensure that individual teachers will share the assumptions underlying the proposed change. Those who will carry out the changes should be involved from the beginning in discussing the need for change.

In cases of teacher-initiated change, such as the effort of the Integrated Team described in the present study, two factors appear to be crucial to the team's success. First, the teachers must have compatible, though not necessarily identical, curriculum assumptions and purposes. The teachers in this study believed strongly that "not just any teachers" could work together and be successful. Principals must therefore assign teams with this in mind. Second, they must be given plenty of time together in the early stages of team planning to negotiate common curriculum understandings.

The data revealed that it was through the collaborative processes such as defining goals for students, selecting curriculum content, and designing
evaluation procedures that they truly made visible to themselves and to each other their common core of belief. All the teachers believed that the time they spent getting to know each other better as teachers was essential. It is vital to a team's success in developing coherent curriculum plans that they be provided with ample time in their initial developmental stages to articulate their curriculum beliefs and reach some consensus on philosophy and goals. It is to these that the team will return frequently to evaluate the decisions they make regarding content and instruction.

Individual Curriculum Interpretations

Even when there is agreement on fundamental curriculum purposes, teachers' individual knowledge, beliefs, and concerns lead them to interpret these purposes in different ways and to value them for different reasons. (See Table 1.)

Discussion:

The fact that all three teachers believed themselves to be child-centered did not mean that teaching and learning occurred in the same way in each of their classrooms. As was detailed in the cross-case analysis, the dominant concerns and knowledge bases of the individual teachers were reflected both in the content and the manner of their instruction. A few examples illustrate this. Peggy's political interests, her goal of student empowerment, and her
predisposition toward verbal learning meant that her students experienced lots of discussion, especially about controversial issues. Talk was also prevalent in Mark's room, but, reflecting Mark's own personal orientation, there was less emphasis on controversy. His stated focus was on relating factual knowledge to students' life experiences. In Janis' classroom students most often encountered concrete, visual experiences. To some extent, this was due to the fact that she was primarily responsible for math and science which lend themselves to concrete instruction. However, it was also undoubtedly due to Janis' own preference for visual learning.

The differences among the classrooms also reinforced studies which suggest that teachers' knowledge does matter in determining the curriculum that their students encounter (Grossman, 1990; Zumwalt, 1989; Paris, 1993). When the teachers on the Integrated Team attempted to implement in their own classrooms the curriculum intentions of the team, they interpreted these from the standpoint of their own knowledge. Through observations of many classes throughout the year and through analysis of the teachers' contributions to team meetings, I saw many examples of teachers' drawing on their individual areas of expertise and comfort. Some examples included Peggy's knowledge of the language arts, Mark's preference for social studies, and Janis' expertise and experience with math and science. A negative example was the way in which Mark's acknowledged lack of a repertoire of hands-on strategies limited his ability to plan lessons consistent with the team's stress on active
Implications:

Zumwalt (1989) has discussed the relationship of teachers' experience, insights, knowledge, values, and commitments to the curriculum decisions they make. In other words, when teachers assume a curriculum role, their knowledge and beliefs matter. One of the reasons that many curriculum innovations are said to "fail at the classroom door" is that such innovations compete or conflict with the values and commitments of the teachers who are to implement them. One might expect then that in the present study, in which teachers carry out a curriculum plan they themselves developed, implementation would be more uniform. What was seen, in fact, was that each teacher drew on different knowledge and professional strengths in order to address somewhat different concerns. The actual curriculum was therefore not a static plan, but was developed in each classroom as each teacher interpreted the intentions of the team through various personal lenses.

It is important also to realize that even when teachers agree on proposed curriculum goals and desirable instructional strategies, they may, like Mark, lack the knowledge they need to actualize their goals. To some extent his fellow team members served as a resource for him, but this demand on their time was a source of additional stress. Those who wish to facilitate curriculum change need to be mindful of the necessity of supporting teachers with
assistance and additional resources as they perceive the need for more knowledge.

Strength of Diversity

The curriculum work of a teaching team is enhanced when its members contribute a diversity in personalities and strengths while sharing a common vision of curriculum goals.

Discussion:

The diversity among team members was both a source of stress and of strength. The potential for stress was referred to by all three teachers and stemmed from differences in personality, individual priorities, and classroom management styles. However, during team meetings and individual interviews team members adamantly insisted that any friction resulting from these differences was compensated by the strengths that their diversity gave the team.

One way that they dealt with their diversity was through designating individual roles to describe each teacher's contribution to the work of the team. These roles were constructed early in the year and appeared to be a combination of teachers' self-assessments with their colleagues' recognition of their talents and skills. For example, Peggy was the "conceptual" person, Janis was the "organizer", and Mark was the "realist" on the team.
These roles seemed to be important in several ways. First, they served to validate the knowledge and personal styles of the individuals. A close correspondence was evident between teachers’ roles, their curriculum orientations, and their preferred teaching styles. Another benefit of having assigned roles was that each individual was recognized as a valuable participant in the work of the team. This was especially important for Mark whose lack of certain kinds of experience sometimes caused him to question how much he was contributing. Finally, the development of these roles led to some division of labor. For example, it was frequently observed that Peggy would come up with a general framework for a lesson or unit, Janis would provide practical ideas for the actual lessons involved, and Mark would remind them of practical considerations such as time, space, transportation, or the need to consult other stakeholders.

The team members were diverse, too, in terms of their disciplinary strengths. Although all had received the generalist preparation typical of elementary certified teachers, their interests and teaching experiences gave them varied kinds of pedagogical content knowledge (Grossman, 1991). They perceived this as one of the benefits of teaming. They believed that the curriculum was enriched for students because they could combine their knowledge of teaching all the content areas. The team’s aim was totally integrated instruction, and classes were not separated into traditional subject areas. However, team members retained some concern for traditional
curricular balance, and there was some division of responsibility for some of the content areas. Janis, in particular, assumed the primary responsibility for math. Peggy stressed her background as a whole language teacher and Mark talked about his enjoyment of social studies, especially history, but in these areas specialization was less marked.

Implications:

The fact that teachers on a team are diverse seemed to be more of a strength than a liability. This is good news for administrators because of the diversity that exists among any school staff. There have been several attempts to determine the optimal mix of teacher types for effective teaming (Erb & Doda, 1989; Shillington, 1991). The present study supports the contention that it is best to try to balance team members' areas of disciplinary expertise to assure curriculum balance and depth and breadth of content. This would be true whether the teachers were certified to teach secondary students in a particular content area or were prepared as elementary teachers. As the teachers on the Integrated Team illustrated, even those educated as generalists have disciplinary strengths and preferences.

Few conclusions were possible from this study regarding the best mix of personality types. These three teachers accepted differences in personality and teaching style as inevitable and believed that their differences were complementary in terms of strengths and weaknesses. It could not be
determined whether this was primarily due to the particular composition of this team or whether this attitude was a result of a conscious determination to find and use each other's strengths and make up for weaknesses. Possibly it was both of these things. One thing that should be remembered was that the team self-selected to some extent. It can safely be concluded that these individuals felt a degree of compatibility from the beginning.

Principals usually have the final authority to select the members of teaching teams. Steve initially chose teachers for the Integrated Team on the basis of what he knew about them. However, he did not simply appoint them to the team, but waited until they decided they wanted to participate. Their commitment to the team was therefore very high. This commitment now seems to me to be a crucial variable affecting the willingness of teachers to accept the demands of increased curriculum work.

The experience of this team suggests three major recommendations for principals forming teaching teams. First, the team members must be compatible in terms of their fundamental beliefs about curriculum. Next, they should possess a varied body of pedagogical content knowledge. And finally, they should have some choice about which individuals they work with. Decisions about team composition should be made by a principal who knows teachers well enough to predict their philosophical compatibility with the envisioned change. The principal should also consider the balance of individual strengths and weaknesses among teachers wishing to form a team.
This will help to ensure a harmonious working relationship and provide some guarantee that all content areas will be effectively taught.

**Collaboration and Knowledge Construction**

The opportunity to collaborate with colleagues in developing curriculum results in both the sharing of professional knowledge and the construction of new knowledge.

Discussion:

The fact that teaming can result in an exchange of professional knowledge is so well-known as to need no further discussion, although the conditions that optimize this exchange continue to be explored. What is less obvious is that this collaboration also results in the creation of knowledge that was not previously available to the individual teachers. The teachers on the Integrated Team shared their experiences, their content knowledge, and their repertoire of teaching strategies. They also drew upon their knowledge to help solve problems as they arose in the process of curriculum deliberations. However, closer observation indicated that through this sharing individual teachers were gaining significant new understandings and insights into their own teaching.

These new understandings and insights fell into two major categories. First, teachers better understood the conceptual integration of the content they
were teaching. Second, the teachers became more reflective about their own teaching through articulating their knowledge and beliefs to others. Janis and Mark reported that through the collaborative process they understood better how the lessons they were teaching fit into the whole unit being taught by all three. It appeared that Peggy provided the conceptual nudge that initiated this kind of thinking. She played a large part in developing the conceptual framework that guided the development of the units. Janis then was able to recognize how her content knowledge fit into this conceptual framework. She said, for example, that she had previously taught a unit on chemistry, but now she could see how this related to other kinds of knowledge. Mark also was enabled through teamwork to make interdisciplinary connections. However, this understanding sometimes did not come until he was engaging in teaching the lessons and then discussing it with his colleagues. Until this occurred, he knew what he intended to do but did not fully see the relationship of his lessons with the rest of the unit.

The second kind of knowledge construction that occurred as a result of team collaboration was related to teachers' reflections about their own instructional practices. Peggy explained that when the teachers had to articulate their knowledge and beliefs to the other team members, they had to think at a different level than they did during their day-to-day activities. Mark also stated that working with the team made him more aware of whether his own teaching methods were consistent with the team's objectives.
All of the teachers repeatedly provided examples of how decisions about lessons in their own classrooms were suggested or altered by what was discussed in team meetings. When teachers shared their knowledge in a collaborative problem-solving process, the result was more than a larger body of combined knowledge. The comments of the teachers in this study indicated that the new knowledge was integrated with their previous knowledge to form new permutations of knowledge applicable to their tasks.

Implications:

Collaboration resulted in knowledge-sharing that was not only transmissive, but generative and specific to individuals. The literature on teacher teaming is full of references to benefits such as increased collegiality and shared decision-making, as well as more discussion among teachers about students, instruction, and curriculum (Little, cited in Erb, 1992). However, sufficient attention has not yet been given to the degree to which the sharing of knowledge contributes to transforming and increasing the knowledge of individuals.

Such an awareness of the constructivist nature of the knowledge used in teachers' curriculum decision-making has great significance for those who have an interest in the professional development of teachers. They suggest that teacher teaming for collaborative curriculum development may have valuable potential as an avenue of staff development. The teachers on the
Integrated Team believed that they were better teachers because they were collaborating on curriculum. Such focused professional knowledge-sharing led to more self-knowledge and more reflection on practice. Frequently, attempts toward staff development are seen by teachers as intrusive or threatening. In contrast, this study and many others report that teachers see teaming as supportive and validating. Therefore, arrangements which encourage teacher collaboration on significant curriculum decisions could result in teachers who are more knowledgeable and proficient in their own practice.

For those concerned with curriculum reform, this study strongly suggests that we look beyond a model in which teachers are given a limited period of initial training to implement a curriculum plan conceived by others. It has already been suggested that teachers be involved in the initial stages of curriculum goal-setting. In addition, it would probably be more effective to plan on a longer period of implementation, during which time teachers would continue to interact with curriculum planners and with their peers to continue to develop their knowledge and understandings in the context of their own teaching.
Meaningful Rewards

The rewards of collaborative curriculum work must be substantial and meaningful to individual teachers in order to compensate for the practical difficulties and individual sacrifices connected with change.

Discussion:

The change process is inevitably accompanied by a great deal of uncertainty, and this was true for the members of the Integrated Team. The nature of the particular kind of curriculum they envisioned increased this uncertainty, in part because of its emergent nature. The teachers were not able to make detailed long-range plans and were frequently forced to quickly gather resources to teach material they had not taught before. In addition, they were organizing instruction in new ways and were using innovative methods of evaluation and reporting to parents. Finally, they were also dealing with new ways of working with each other in a more complex level of teaming than they had ever experienced. These teachers dealt with change in almost every aspect of their professional lives.

Some changes especially presented difficulties for all the teachers. Chief among these appeared to be finding time for the demands of teamwork. Another source of stress was the result of working so closely with the rest of the team. The teachers expressed this stress in various ways as a loss of personal flexibility and autonomy, a constraining demand on personal time,
and a discomfort caused by inconsistencies in team members' teaching styles. However, all three teachers said that the difficulties of this year's changes were far outweighed by the rewards of working with others who shared their curriculum beliefs. This similarity of belief resulted in a sense of camaraderie and personal validation, as well as a sense of professional mission. They also believed that teaming had enriched the curriculum for students.

The teachers' perceptions of this year's experience as rewarding may be related to the data which described the factors the teachers believed to be crucial to effective team curriculum work. Chief among these were a shared philosophy, complementary professional strengths, and adequate practical support. These factors probably contributed to an increased sense of collegiality, shared responsibility, and personal and professional validation. They also served to mitigate somewhat the individual sacrifices of time, privacy, and personal autonomy.

Implications:

Change involves discomfort and risk. If teachers are to accept the disadvantages of a curriculum innovation such as teaming, there must be the perception of advantages sufficient to compensate for the difficulties. Otherwise no substantial, lasting change is likely to occur. When teachers do not perceive such advantages, they may ignore attempts at curriculum change or abandon such change efforts after a short time. When proposed changes do
not provide rewards that are meaningful in terms of teachers' needs and priorities, it could also result in the change occurring only on the surface, rather than in any real sense. The history of teaming is a good illustration of this.

In many middle schools where teaming has been used, such teams have existed as organizational entities, but no real curriculum collaboration is occurring. In many cases, such teams share the same group of students, but do not work together at all. Others interact only through some rudimentary forms of coordinating scheduling and grade-level policies or occasionally collaborating for limited correlation of units or for a rare interdisciplinary unit. This kind of limited teaming cannot provide the kinds of rewards valued by the Integrated Team. Lacking such meaningful rewards, the demands of teaming may not seem to teachers to be worth the effort.

Administrators who wish to encourage teachers to engage in such work need to openly discuss with the teachers their perceptions of the advantages and disadvantages such work entails. These will probably be somewhat different in each context depending on the situations and personalities involved. Variations may also be found in different stages of curriculum change. It seems clear, however, that unless advantages are seen by the teachers to be sufficient to compensate for the difficulties, the teams will not function effectively. and it will be difficult to interest other teachers in forming new teams.
Administrative Support

A critical element in teacher-initiated curriculum change is an administrator who believes that curriculum development is an appropriate role for teachers and who gives practical support in that role.

Discussion:

The data revealed that all three teachers believed that the principal played an essential role in the work of the team. They believed his knowledge of his staff enabled the team to be made up of people who could work together and who shared his fundamental beliefs about curriculum. The team members expressed to me their appreciation of the ways in which the Steve supported them with the time and resources they needed. They also valued his support for their risk-taking by his stress on site-based management and by his help in interpreting their program to parents. This afforded them security within the school hierarchy and in the community.

Perhaps most important of all to the teachers was Steve's belief that they had an appropriate and valuable curriculum role. All the teachers stated that he treated them as peers and gave them a great deal of autonomy in their decisions. At the same time, he exerted leadership by insisting that the team deal with important and sometimes uncomfortable issues. They expected that he would ask them to reflect on the reasons for their practices.
Implications:

The findings and the resulting conclusions suggest several guidelines for principals interested in forming and encouraging highly effective curriculum teams. First, principals should know well the members of their staff, paying particular attention to their individual educational philosophies and their professional strengths and weaknesses. These should be taken carefully into account when determining team composition. Just because several teachers want to form a team does not mean they will have the qualities needed to work effectively together. Team formation should be a collegial process undertaken by principal and teachers together. Principals should keep in mind that teacher commitment to the curriculum goals of a team depends a great deal on the concerns and priorities of individuals as well as on their professional strengths and personality traits. A principal may lead teachers in considering the need for change, but if teachers are not convinced that the envisioned change is desirable and doable for them at a particular time, then they will not buy into it. Principals should probably view teaming as a developmental process which cannot be imposed on a building all at the same time. It would seem more practical to start with only those teams which offer the likelihood of success and let those model change for others.

Principals should provide practical facilitation by providing a school context that allows the team's work to be carried out efficiently with a minimum of stress for individuals. Lortie (1975) found that the large majority
of teachers' complaints dealt with lack of time or disruptions of work. This was still true for the teachers on the Integrated Team. Principals can alleviate a great deal of stress by adjusting the structure of the school day to allow for the time needed for teamwork. They also may provide special teaching resources needed by teams. However, changes are needed in the ways districts allocate resources in order to truly facilitate teamwork. Such changes include viewing curriculum planning as a legitimate role for teachers and adjusting the structure of the school day and ways to reimburse teachers for this kind of work.

Principals should make it evident that they regard teachers as peers who share the professional concerns of meeting the needs of students. They should show their belief that teachers possess valuable curriculum knowledge by providing a high degree of curriculum autonomy and by encouraging risk-taking based on thoughtful deliberation. At the same time, principals should not hesitate to assume a leadership role by bringing up important questions and raising critical issues. It is especially important for the principal to make visible concerns that individual team members might be unaware of or hesitant to mention. The principal's role is therefore one of leadership, but also one of collaboration with fellow professionals.

Recommendations for Further Research

This study has attempted to provide an indepth look at the experience
of one team of teachers as they worked together over the course of a school year to plan and implement their own curriculum visions. The aim was to focus on a particular case and thereby to generate conclusions which might serve as substantive theories (Strauss & Corbin, 1990) to be tested in other similar cases. Several features of the present study suggest fertile areas for further research. Such features include the focus on teacher teaming, the attention given to teacher knowledge, and teacher agency in curriculum development. These topics offer much research potential because they represent topics of much current interest. Although studies exist on each of these topics, there is still much we need to know.

Teacher teaming, especially, has emerged as a frequently recommended element of school restructurin, especially at the middle level. Many of these studies have been directed at determining the level and extent of teacher interaction, the rewards and difficulties of teaming for the teachers involved, and on team organization. A few studies have looked at the effect of teaming on student achievement (Arhar, M.; Johnston, J. H.; & Markle, G. C., 1992). The teams in most of these studies have had varied functions, but it is rare to find examples such as the Integrated Team in which curriculum creation is a major purpose of the team. Little is known about how such teams carry out their work or about the factors that influence their effectiveness. The findings of this study suggest several questions for research on this topic.

One avenue of research on teaming would be to explore in other cases
what factors are important in determining the composition of an effective team. Are such factors as a common curricular philosophy and a diversity of personalities, knowledge, and styles important for other teams? There is also a need for research into what kind of school context best facilitates teachers' collaborative curriculum work. This study suggested that if curriculum change is to be substantive and lasting, then equally substantive changes must occur in school structures and role expectations for teachers.

The principal's role, especially emerged as a crucial variable in this study as in other studies of school change (Fullen, 1991). It would be helpful to know more about how other principals act to reinforce or limit the functioning of teacher curriculum teams. Also, how do principals' beliefs about appropriate curriculum roles for teachers relate to the kinds of teaming that occur in their buildings? Maeroff (1993) talked about principals who served as "enablers" (p. 88) for teachers' risktaking. It would be useful to explore the ways in which principals serve as enablers for teacher curriculum teams.

Teachers have only relatively recently been recognized as active participants in curriculum development. In order to refer to this emerging role, I have adopted from Paris (1993) the term "teacher agency." Even now, most studies of teachers as curriculum agents focus on individual teachers' work in their own classrooms. As teams of teachers assume curriculum responsibility, there is a great need for studies to serve as examples of how this work might be carried out in a collaborative manner. Currently, a team
like the one in this study can find few exemplars from which to learn how others have approached similar tasks.

Several questions might be usefully addressed in studying a team of this kind. One might, for example, investigate what appears from this study to be the nonlinear nature of teachers' curriculum planning. The emergent, ongoing nature of the teachers' curriculum deliberations meant that there could be no linear stages of design, implementation, and evaluation. Much could be learned by following a single member of a teaching team through the overlapping and recursive processes of team planning, individual decision-making, implementation, and evaluation. Such a study should attend also to the consistency between the teacher's statements and actions, the words and deeds issue.

Other possible studies could investigate in other contexts how teachers' individual knowledge or lack of knowledge affect the ways in which they carry out the team's curriculum intentions. Several questions would be of interest. For example, how does a teacher's content knowledge affect the way in which an interdisciplinary curriculum is taught? Will disciplinary loyalty make teachers less likely to integrate curriculum or does a depth of content knowledge enable teachers more easily to make interdisciplinary connections?

Goodlad (1984), Rosenholtz (1989), and many others have pointed to teacher collaboration as an essential element in school improvement. If teacher teaming is to be of value in securing the benefits of teacher
collaboration, then teams must function at a higher level than has usually been the case. In addition to organizational and administrative tasks, they must take on the more difficult, but more rewarding, tasks of curriculum improvement. Many more studies of team functioning in different school contexts are needed to help to support and promote teachers in newly recognized curriculum roles.
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