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The development of pedagogical-content knowledge: Two case studies of exemplary general music teachers

Duling, Edward Burger, Ph.D.

The Ohio State University, 1992

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THE DEVELOPMENT OF PEDAGOGICAL-CONTENT KNOWLEDGE:
TWO CASE STUDIES OF EXEMPLARY GENERAL MUSIC TEACHERS

DISSERTATION

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

By

Edward Burger Duling, B. M., M. A.

*****

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1992

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To my parents, Edwin T. and Mary B. Duling, for their support through my many years of study—
"they also serve who only stand and wait"—
and to four exemplary music teachers in the River View Local School District who were each sources of MY pedagogical-content knowledge:

Lillian P. Huntington

Raymond J. Holm

Richard McCluggage

J. P. Branham
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CHAPTER I

INTRODUCTION

In every field of human endeavor there exists a body of explicit knowledge as well as a set of procedures for using that knowledge. Likewise, in every profession there exists a set of implicit assumptions, replete with their own jargon, maxims, and patterns of action aimed at some practical end.

This is no less true in education than in other fields. Most practitioners at all levels of education have either stated or heard, "don't smile 'til Christmas," "be firm and be fair," "objectives first," as well as a host of other advice--much of it extant without any empirical evidence. One of these is heard when supervisors of pre- and inservice teachers refer to one of their teachers as a "born teacher." This statement suggests that the teacher would have been just as good a teacher without the preservice practicums and methods classes or inservice experiences. The statement further implies that some may attribute success in teaching to uncontrollable factors such as genetics!

"While it is true that some teachers ARE 'born-naturals,' chances are greater that we who are motivated to teach can LEARN
to teach well" (Campbell, 1991, 36). If indeed "teaching is essentially a learned profession" (Shulman, 1987, 9) educators are left with a logical series of unanswered questions parallel to the educational maxims outlined above: if teachers can learn to teach, how will that learning be accomplished? How do people learn to be teachers? What do they need to know how to do? How much do they need to know about their subject(s)?

These questions serve to introduce this study of the development of pedagogical-content knowledge of exemplary middle-school general music teachers. Specifically, the queries become: how do exemplary general music teachers--specifically at the middle school level--become such teachers? What do they know about musical content? What do they know about how to teach music? How did they come to know these things?

Music educators at all levels have always been interested in improving the quality of music education. In recent years, descriptive research has undertaken to explicate various behavioral characteristics of good teachers in general (Brophy, 1979) and music teachers specifically (Yarbrough, 1975, 1987; Tabel & Coker, 1980; Price, 1985). Investigations of teacher intensity focusing upon enthusiasm and timing factors have shown that prospective music teachers can be successfully trained to demonstrate and recognize those factors (Madsen, Standley, Byo & Cassidy, 1992; Byo, 1990; Cassidy, 1990; Madsen, Standley, & Cassidy, 1989).
Such studies clarify for music education what has historically been unclear, especially in the specialty area of general music. For nearly half a century, music educators have been concerned more with teaching (methodology and technique of presentation) than with how the music teacher thinks about teaching, goes about teaching, and reflects upon teaching. Because of this preoccupation with observable aspects, excerpts from the "Junior High School Curriculum" section of the Music Education Curriculum Committee Reports of the Music Educators National Conference from 1945 sound current: "A sincere concern was shown for the validity and effectiveness of music teaching in the Junior High School grades. Many suggestions indicated that there was little uniformity in practices and that some basic concepts were at variance" (3).

Lack of "uniformity in practices" is one reason that there is continual advocacy of numerous curricular models, theoretical frameworks, and teaching strategies. In middle school and high school general music, effort is being expended to refine model curricula (Gerber, 1987; Shuler, 1990), and to find materials suitable for teaching secondary general music (Hinckley, 1987; Hughes, 1987; Guerard, 1988). Identifying and employing exemplary secondary general music teachers (Hinckley, 1987) who can (or believes he or she can) teach secondary general music (Caballer, 1986; Quay, 1987; Glidden, 1989) are related concerns.

Research in music education has sought to realize the curricular needs of music teachers and students, and share
findings, implications and techniques; "it represents another step toward improving the process of music education" (Karjala, 1991). Though research data and conclusions have contributed much to finding and describing various teacher characteristics and methodological strategies, the time has come to take a different approach to research, particularly as it relates to describing the sources and expertise of the middle school general music teacher and his or her perception of such sources and expertise.

The frequently cited page of prose about the teacher being the "decisive factor" may, in fact, be true. Even though there may be "little uniformity in practice," middle school general music teachers across the nation seem to attain at least a modicum of success everyday. By looking at the thoughts and practices of two exemplary general music teachers at the middle school level, this researcher has raised several hypotheses and a theory that may explain how these teachers accomplish their tasks in spite of individual variation in technique and methodology.

**Purpose and Guiding Questions**

The purpose of this study was to identify the factors that have influenced the development of exemplary middle school general music teachers' pedagogical-content knowledge (Shulman, 1987). Shulman defines pedagogical-content knowledge as a special category in his taxonomy of knowledge. Pedagogical-
content knowledge "identifies the distinctive bodies of knowledge for teaching. It represents the blending of content and pedagogy into an understanding of how particular topics, problems, or issues (content) are organized, represented, and adapted (pedagogy) to the diverse interests and abilities of learners and presented for instruction" (1987, 8).

Specifically, the research was guided by five questions:

1. What factors, observed by the researcher and cited by the subjects, have contributed to their content (musical) knowledge as exemplary middle school general music teachers?

2. What factors, observed by the researcher and cited by the subjects, have contributed to their pedagogical knowledge as exemplary middle school general music teachers?

3. What factors, cited by the subjects, were meaningful in their personal and professional development in content and pedagogy?

4. What effect, observed by the researcher and cited by the subjects, does teaching context have upon their pedagogical organization and practice as exemplary middle school general music teachers?
5. What was the extent of awareness, as cited by the subjects, of their pedagogical-content knowledge?

Need for the Study

This study consisted of two parallel, naturalistic case studies of the development of the pedagogical-content knowledge of two exemplary middle school general music teachers. Qualitative methodologies were used in the collection and analysis of the data. Three specific subcategories were evidence of the need for such a study: (1) lack of qualitative research on the influences upon and processes of teachers' thinking in terms of Shulman's model, (2) lack of descriptive, naturalistic case studies in music education, and (3) a lack of case studies specific to the exemplary (expert) general music teacher.

Teacher Thinking

Research in teacher thinking in music (or any content area) at the secondary level may be outlined in terms of: (1) a need for teacher thinking research at the secondary level, and (2) a need for qualitative inquiry in teacher thinking.

Clark and Peterson's chapter in the third edition of the Handbook of Research on Teaching supports the need for general studies of teacher thinking at the secondary level. "Most of the
research on teachers' thought processes has been done with teachers of elementary school, and there is a conspicuous absence of attention to the thought processes of secondary school teachers (1986, 292).

Researchers have added the dimension of human thinking to educational research literature in two ways. Most recently, researchers have begun to apply qualitative methodology to studying teachers and their thoughts, interactions, and planning.

Most studies of teacher thinking over the last three decades have used quantitative methodology. Shulman (1986a) asserts that this "process-product tradition": (1) seeks quantifiable relationships between what a teacher does and resultant student capacities; (2) emphasizes what worked, rather than why it worked; and (3) seeks empirical proof over theoretical construct.

When educational process-product research primarily addresses teacher behaviors, it usually emphasizes the result of such behaviors on student performance on standardized tests. Such research, commonly known as teacher effectiveness research, is exemplified by the work of researchers like Dunkin & Biddle (1974), Gage (1978, 1985), Emmer & Evertson (1981), Brophy (1982), Rosenshine (1983), Good, Grouws & Ebmier (1983), Emmer, Evertson, Sanford, Clements & Worsham (1984), and others.

Studies of teacher effectiveness are discussed in four chapters in the third edition of *Handbook of Research on Teaching* as well as in a recent literature review (Single, 1991). As Shulman
(1986a) believes, process-product research has been important because it has extended educational research into actual classrooms and removed it exclusively from laboratory settings.

Likewise, quantitative process-product studies in music education have made a contribution to the music education profession. In the final analysis, though, such studies feature only a detached perspective of the end products, e.g. the students' statistically described scores on a standardized test.

An emic view (perspective of the insider) of a middle school general music teacher will, as a matter of course, include researcher observation as well as interviews and structured probes of teacher thinking. Data is gathered and studied which is not generally available through the collection of traditional student performance measures on controlled tests. The focus is, rather, upon what the teacher thinks (1) before, during and after planning, transforming, and transmitting content material; (2) before, during and after evaluating the student output obtained; and (3) before, during, and after reflective thinking about the content and pedagogical application.

The emphasis upon the teacher is consistent with contents of reports released by the Holmes Group (1986) and the Carnegie Foundation (1986). Teacher knowledge of subject matter (content), and teacher knowledge of teaching approaches (pedagogy), are both dimensions of this emphasis. Balancing the two dimensions, content and pedagogy, is advocated by Shulman
(1986b). Shulman's Model of Pedagogical Reasoning and Action [Figure 1] presents an outline of how teachers think, how they transform and instruct, how they evaluate students, and how they reflect upon their teaching.

The crucial need at this time is for information on what the teacher thinks, why he or she has come to think that way, what actions result from the thoughts, and where such information will lead teacher educators in preparing pre- and inservice teachers in both content and pedagogy. Researchers have examined such knowledge acquisition in mathematics teachers (Barnett, 1991), and have begun the compilation of cases of experienced teachers' use of such knowledge (J. Shulman, 1991).
A Model of Pedagogical Reasoning and Action: Shulman

Comprehension
Of purposes, subject matter structures, ideas within and outside the discipline

Transformation
Preparation: critical interpretation and analysis of texts, structuring and segmenting, development of a curricular repertoire, and clarification of purposes

Representation: use of a representational repertoire which includes analogies, metaphors, examples, demonstrations, explanations, and so forth

Selection: choice from among an instructional repertoire which includes modes of teaching, organizing, managing and arranging

Adaptation and Tailoring to Student Characteristics: consideration of conceptions, preconceptions, misconceptions, and difficulties, language, culture, and motivations, social class, gender, age, ability, aptitude, interest, self concepts, and attention

Instruction
Management, presentations, interactions, group work, discipline, humor, instruction, and the observable forms of classroom teaching

Evaluation
Checking for student understanding during interactive teaching
Testing student understanding at the end of lessons or units
Evaluating one's own performance, and adjusting for experiences

Reflection
Reviewing, reconstructing, reenacting and critically analyzing one's own and the class's performance, and grounding explanations in evidence

New Comprehensions
Of purposes, subject matter, students, teaching, and self
Consolidation of new understandings, and learnings from experience


Figure 1. A Model of Pedagogical Reasoning and Action
Descriptive Naturalistic Case Studies

Descriptive, naturalistic case studies in music education center upon a need to examine: (1) process in teaching versus products of teaching, (2) the actual setting versus a tested outcome, and (3) case literature in music education versus inferences drawn from a random sample. "A focus on process is a focus on how something happens rather than on the outcomes or results obtained" (Patton, 1990, 94).

Little is known through research about how an exemplary general music teacher becomes an exemplary general music teacher. What is the process and what are the factors that lead to the development of pedagogical-content knowledge in the secondary general music teacher?

In addition to emphasizing process, a descriptive, naturalistic case study in education is characterized by use of natural school settings with no attempt to manipulate any variables; the researcher observes in the classroom, conducts interviews with the subject(s), and evaluates written documents (Patton, 1990). Additionally, in studying events in such natural settings, the researcher becomes the data collection instrument. The data, rather than being quantifiable incidents, are the expressed thoughts of the teachers, notes of observations, and written documents as categorized, analyzed, and interpreted by the researcher.
Advocates of case studies of teachers usually cite a lack of cases that one might draw upon to educate the novice (Dewey, 1929 in Jackson, 1968; Jackson, 1968; Berliner, 1986; Shulman, 1986b, 1987). Unlike medicine and law, educational research is largely limited to descriptions of outcomes, interpretations of results, and implications for new strategies. A body of case literature describing the thoughts and work of teachers has only recently begun to accrue (Kennedy 1991; J. Shulman, 1991). Uses being made of cases include enhancement of pedagogical-content knowledge in teaching mathematics (Barnett, 1991) and analysis of pedagogical knowledge through examination of teacher-written cases (Kagan & Tippins, 1991).

The need for such case study is especially crucial in music (Jordan, 1989; Ross, 1989) and at the secondary level (Clark & Peterson, 1986). This assertion is supported by the fact that of the reviews of teacher thinking in planning, presenting, and reflecting upon instruction, none presents evidence of research in secondary general music (Clark & Peterson, 1986; Peterson & Comeaux, 1987; Mitchell & Marland, 1989). Jordan asserts:

"The practical pedagogical wisdom of the ablest of teachers has not been recorded in any fashion. Music education should consider means by which that lore of teaching can be collected, examined, and codified so that others that follow in the profession can begin from that point in pedagogical time and move forward" (Jordan, 1989, 54).
Studying the Expert

Necessary research in the study of the exemplary teacher is outlined as follows: (1) a need for case studies of the expert in music education, based at least in part upon existing expert research; and (2) a need for cases in music education such as those extant in other professions.

Over twenty-five years of work has gone into the study of expert versus novice knowledge in everyone from chess players (de Groot, 1966; Chase & Simon, 1973) and physicists (Chi, Feltovich & Glaser, 1981; Chi, Glaser & Rees, 1982), to mathematics (Clement, 1984, Leinhardt & Smith, 1985; Barnett, 1991) and social studies teachers (Peterson and Comeaux, 1987). This type of research on experts' knowledge in music education, when accomplished using existing school settings and analyzed using qualitative methodology, could provide "richly developed portrayals of expertise" (Shulman, 1987) when contrasted with portrayals of the novice.

However, description of the expert teacher as a case or series of cases augments expert/novice difference studies. In contrast to expert/novice comparison studies, comparison across the field of accessible expert teachers would inform the profession by providing sources and themes of pedagogical-content knowledge previously extant only in the hypothetical form outlined at the start of this chapter. Because the thoughts and actions of these
exemplary teachers are probed and observed in case studies, a unique perspective is added to these cases. This perspective would not be noticed in a study focusing solely upon finding differences between novices and experts. "If researchers on teaching study only experienced teachers compared to ineffective teachers, they may not uncover the important information of how the expert teacher becomes an expert" (Peterson & Comeaux, 1987). Standley & Madsen (1991) further delineate the music teachers who are "experienced" from those who are "experts."

A truer perspective emerges when research taps the pedagogical-content knowledge of teacher-experts as well as their awareness of what such expert knowledge is and where it came from. Consistent evidence shows that there is, indeed, a difference between the novice and the expert in many areas. Dissertation reviews (Wing, 1989), book chapters (Chi, Glaser & Farr, 1988), literature reviews (Berliner, 1986), music education research (Standley & Madsen, 1991), and educational psychology texts (Woolfolk, 1990) support the general assertion that "first, the experts and novices differ both in their problem representation and their subsequent approach to solutions of the problem; and second, that these differences . . . may be due to differences in the underlying schema of experts and novices" (Peterson & Comeaux, 1987, 300). Though limited, research in education has also begun to compare expert and novice teachers as exemplified by Kagan & Tippins's study of expert and novice teachers' expressions of

Qualitative testing of theory generated in case studies of exemplary teachers in content areas other than music education, e.g. Cornett, 1987, is another task facing music education researchers. The portrayals of teachers by researchers in other content areas may be applicable to music education to the extent the findings are applied to the establishment of a body of such literature in music education. For example, middle school general music, like middle school art, has begun to limit the use of performing (producing something for public presentation) as a sole teaching methodology. The cognitive learning of elements of theory and history are becoming part of a student's total education in music as in art (Greer, 1984; Reimer, 1989). These additional approaches in both fields (over production) makes examination of parallels a practical consideration.

Research in music education has sought to increase what is known about the profession and subsequently improve the quality of musical education students receive. The work of the actual public school music teacher, and in particular, cases of the exemplary middle school music professional, must be described and interpreted to the profession and public as soon as practical.
Limitations of the Study

The first three limitations below were anticipated. The second three emerged in the course of the study.

1. Observation of teacher beliefs and thinking is limited to what the subjects say their beliefs and thoughts are and what the investigator interprets their thoughts and beliefs to be.

2. Videotapes used in stimulated recall and analyzed by the researcher should be understood to be an approximation of what actually occurs during a class period.

3. Because of the nature of the study, and the use of only two subjects, the research is not generalizable. Transferability will be enhanced through trustworthiness in data collection, analysis, and "thick description."

4. The visibility of the practices of the two exemplary general music teachers varied greatly in terms of the quality and quantity of knowledge held by persons polled.

5. The teachers, each chosen from a geographic area, were those characterized as exemplary by the currently extant standards of their colleagues, supervisors and other music education professionals.
6. The perspective of the researcher as an outside (etic) observer is limited by his own experiences as middle school general music teacher.

Clarification of Key Terms

Detailed explanations of terms are provided at the most appropriate times in the following chapters. The following explanation is offered as an initial guide for the study.

"Pedagogical-content knowledge" is a term used by Shulman (1987) and exemplified in his Model of Pedagogical Reasoning and Action. In this study, pedagogical-content knowledge is defined according to Shulman's explanation, but with the added understanding that this term is similar to Elbaz's "practical knowledge" (1981), Clandinin's "personal practical knowledge" (1986), Argyris's "theories of action" (1982), and identical to McCutcheon's "theories of practice" (in press).

In this study, "secondary," used generically, refers to both middle and high school levels; therefore, the words "secondary general music" refer to both middle school and high school general music. The terms "exemplary" and "expert" are used interchangeably in this document. An exemplary teacher as defined for this study is a teacher within a school district who is so identified by his supervisors, colleagues, and musical contacts from
among those working in that district. Further information about sampling is contained in Chapter III.

Teaching experience is not the same as expertise in this study in terms of the delineation made by Standley & Madsen, (1991). Expertise in education is further reviewed in Chapter II.

Several terms common to qualitative studies are used in this document. They are *member check, triangulation, thick description*, and *transfer*. *Member check* is a technique to insure reliability in data interpretation. Participants are asked to review drafts of documents, discuss emerging researcher interpretations, and check statements of fact. Doing so insures that that their perspectives, as well as the researcher's, are represented.

*Triangulation* is the use of more than one data source in reaching interpretive conclusions. Triangulation confirms that a phenomenon was not observed, uttered, or recorded by chance alone. The term *thick description* means that the description will be detailed, truthful, and supported by sufficient evidence. Readers of the study may make their own interpretations--attempt *transfer*--to "similar, but not identical" (Patton, 1990, 489) cases based upon case descriptions.

**Overview of the Study**

The basic purpose of Chapter I has been to set forth the research problem, establish need for the study, provide an
overview of relevant literature, and define limitations of the study. Chapter II reviews literature relevant in the field of teacher thinking and presents various case studies in education and music education. Chapter III presents the methodology used in the study and various rationales for its use. Chapter IV consists of two case studies with sources and themes of the participants' pedagogical-content knowledge. Chapter V is a cross-case analysis and presentation of a general theory. Chapter VI summarizes the investigation, suggests implications of the study, and provides questions and recommendations for additional study.
CHAPTER II

A REVIEW OF THE LITERATURE

The literature that relates to this study may be divided into two broad categories: (1) publications that define and categorize teacher thinking; and (2) publications that examine and apply teacher thinking in general and music education.

Definition and Categorization of Teacher Thinking

During the last two decades, a growing number of educational researchers, theorists, and philosophers have focused upon the thoughts and actions of teacher-practitioners instead of judging teacher effectiveness through student outcomes. Investigations of this type and the resultant theories and philosophies of education at all levels are called teacher thinking research.

Teacher thinking is broadly defined as the mental processes, implicit or explicit, which underlie the theories of practice of a teacher and thus influence and are influenced by his or her actions in the classroom. In seeking the pedagogical-content knowledge of
two exemplary middle-school general music teachers, this study attempted to define and categorize these mental processes both discretely and across the two cases.

Increased attention to teacher thinking may be traced directly to the work of John Dewey. He advocated: (1) analysis, "what the gifted teacher does intuitively, so that something accruing from his work can be communicated to others" (Dewey in Jackson, 1968, 115); (2) deliberation, "an act tried out in imagination" (in McCutcheon, in press) (thoughts of the teacher as opposed to trying new approaches for the first time in a classroom); and (3) a dialection between theory and practice (in Elbaz, 1981, 48; in Goodman, 1984, 9).

From Dewey's initial insights, various researchers have defined and categorized teacher thinking as described in Chapter I of this document. Their definitions, categories and models of teacher thinking have common characteristics: (1) inductive thinking is stressed; (2) connections are sought between thinking and acting; (3) there is emphasis upon the context of the teaching--the setting in which it occurs; (4) it is assumed that knowledge of objects and concepts is constructed; and (5) such knowledge is idiosyncratic to an individual teacher.

Clark and Peterson (1986) cite Jackson's Life in Classrooms (1968) as one of the first studies to attempt description and understanding of teachers' thinking processes that underlie their behavior in the classroom. Jackson's approach was conceptual rather than prescriptive as he took a more global view of the
complexity of teaching. Clark & Peterson themselves present a heuristic Model of Teacher Thought and Action by summarizing three categories of teacher thought processes: (1) teacher planning (proactive and postactive thought); (2) teachers' interactive thoughts and decisions; and (3) teachers' theories and beliefs. Clark and Peterson's three categories are partially based upon the proactive, interactive, and postactive phases of teaching (Jackson, 1968) and partially upon a subsequent National Institute of Education (NIE) report (Crist, Marx, & Peterson, 1974).

Researchers concerned with clarifying and defining approaches to teacher thinking in all three of the categories of Clark & Peterson use different epistemologies in their studies of teacher thinking. Elbaz (1981) proposes that the teacher possesses "practical knowledge" . . . encompassing knowledge of practice as well as knowledge mediated by practice" (46). Like Schwab (1978), she believes that this knowledge has two "commonplace" categories: subject matter knowledge and curriculum knowledge, and three other categories: practical knowledge derived from practice, personal knowledge, and interactional knowledge.

Argyris (1982) defines the "reasoning process" as a movement from premises through inferences to conclusions. Of special interest to researchers in teacher thinking is Argyris's point, influenced by his work with Donald Schon, that people, including teachers, work with "theories of action. . . like master or executive computer programs, which can be used to design and execute action in a given situation. These master programs, or
theories, appear to have been learned early in life through socialization" (84).

This assertion on construction of theory is the result of Argyris's belief that people attempt to produce actions that make sense to themselves, and have intentions about what they are trying to accomplish, even if they are not totally aware of the degree of the action or intention.

Argyris's theories of action can be further divided into theories-in-use and espoused theories. The former are those theories actually and automatically used versus the latter, which are those theories that are only "talked about." The two are not always congruent in teaching or in any other profession. Argyris believes persons always act on their theories-in-use, but may be unaware that they are doing so. In contrast, actions incongruent with espoused theories are more explicitly known.

Clandinin (1986) returns to Dewey's dialectic between theory and practice as a basis for defining teacher beliefs as "personal practical knowledge." "Theory and practice are seen as inseparable; practice is seen as theory in action" (20). Cornett (1987) adopts the terminology of Clandinin in his study of personal practical theories and their influence on curricular and instructional actions of a secondary social studies teacher.

Models for teacher thinking advocated by Shulman (1986a; 1987) are the basis for the methodology used in this study. First, Shulman defines teaching "as an activity involving teachers and students working jointly" (1987, 7). He points out that
teaching involves thinking and acting. To accept Shulman's
definition of teaching and what it involves, is to acknowledge that
research with exemplary middle school general music teachers
must study both teacher thinking and actions.

Further, Shulman sets forth three attributes of the actors:
capacities, actions, and thoughts. Capacities are "relatively stable
and enduring characteristics of ability, propensity, knowledge, or
character" (1986, 7), and actions are "the observable physical or
speech acts (7). Both capacities and action are affected by
thoughts." Thoughts "precede, accompany, or follow the
observable actions" and "foreshadow (or reflect) changes . . . in the
capacities (in the form, for example, of knowledge and habits or
skills)" (8).

The concept of pedagogical-content knowledge is one of
seven categories of the teaching knowledge base (Shulman, 1987).
It "represents a blending of content and pedagogy" (8) or "lies at
the intersection of content and pedagogy, in the capacity of a
teacher to transform the content knowledge he or she possesses"
(15).

The two areas of content and pedagogy are included on the
chart "A Model of Pedagogical Reasoning and Action" (Shulman,
1987, 15). In his model, Shulman divides content into four sources
for the teaching knowledge base: (1) scholarship in the content
disciplines, (2) materials and the settings of the educational
process, (3) research information on schooling, and (4) the wisdom
derived from practice. This content knowledge imbues the aspects
of pedagogy—the "pedagogical" part of pedagogical-content knowledge—resulting in the model [Figure 1].

Shulman, believing that "expert teachers are able to define, describe, and reproduce good teaching" (12), sees pedagogical reasoning as a cycle through comprehension, transformation, instruction, evaluation, and reflection. This cycle provides the framework for investigations like the current study which seeks to describe the development of pedagogical-content knowledge used by exemplary middle school general music teachers. The model has been found useful for studying the qualities of effective music teachers and their effects upon the music class environment (Jordan, 1989) with only minor semantic alteration [Figure 2].
A Model of Pedagogical Reasoning and Action in Music Education:  
(as adapted by Jordan)

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**Comprehension**

of purposes of instruction and comprehensive and sequential objectives.

**Transformation**

Preparation: Interpretation and synthesis of music content, structuring and sequencing, development of curriculum, and clarification of purpose.

Representation: Use of analogies, metaphors, examples, music demonstrations, modeling, and explanations.

Selection: Selection of teaching techniques that are chosen from various modes of instruction. Appropriate observation of learning sequence or applied methodology.

Adaptation: Considerations of music aptitude, conceptions and preconceptions, language, culture, motivations social class, gender, age, ability, interests, self concepts, and attention.

**Instruction**

The observable aspects of classroom teaching: management, presentations, group work, discipline, humor, questioning, and discovery or inquiry instruction.

**Evaluation**

for individual understanding during interactive class or private instruction. Measuring performance through a measurement tool, i.e. continuous rating scales. Evaluating one's own performance, accepting criticism, and adjusting for experiences.

**Reflection**

Review, reconstruct, and reenact one's own performance, as well as the performance of one's class.

**New Inferences**

of content, students, teaching and self. Learning takes place through inference.


Figure 2. A Model of Pedagogical Reasoning and Action in Music Education
Application and Examination of Teacher Thinking

The research in general and music education that relates directly to the pedagogical-content knowledge of the exemplary middle school general music teacher includes: (1) research pertaining to secondary teachers in several content areas, (2) research examining teacher thinking of several kinds at all levels of music education, and (3) observational studies in music education. Many of the studies in these categories have been conducted wholly or in part through qualitative methodologies. A fourth category is literature defining and advocating criteria for music educators, and characteristics of practice.

There are far fewer studies of teacher thinking at the middle school and high school level than those extant at the elementary level (Clark & Peterson, 1986). A review of the literature yields several studies at the secondary level having to do with teacher planning.

Taylor (1970) investigated teacher planning as evidenced through the syllabi of 261 British secondary teachers of English, science and geography. He analyzed their completed syllabi, finding—not unlike the more numerous studies in teacher planning at the elementary level (Clark & Peterson, 1986)—that the teachers considered context of teaching first and then moved to the needs, interests and abilities of his or her pupils.

Junior high teachers who audiotaped their "out loud" thinking during planning were studied by Peterson, Marx & Clark
The teachers in this study spent the most time on considerations of appropriate content, followed by strategies and activities for instruction. The least amount of time was devoted to considering instructional objectives.

Three stimulated recall studies investigated the interactive decision-making of twelve experienced seventh and eighth grade teachers (Clark & Peterson, 1981; Marx & Peterson, 1981; Peterson & Clark, 1978). It was found that concern for the learner occupied the greatest percentage of interactive thoughts. The third study yielded the Peterson and Clark "Model of Interactive Decision Making." Using this model and others, Shavelson & Stern (1981) proposed a modification to the Interactive Model that considered the use of routine by teachers, such routines being few in number, but, indeed, minimizing the conscious decision making during teaching and keeping the learning activity moving forward.

Elbaz (1981) conducted a case study of a high school English teacher to ascertain the teacher's "practical knowledge"—i.e. "implicit theories" (Clark and Peterson, 1986). The practical knowledge of teachers is "broadly based upon their experiences in classrooms and schools and is directed toward handling the problems that arise in their work" (Elbaz, 1981, 67). Related studies include the work of Olson (1980, 1981) with eight British secondary science teachers. He found that classroom influences were the most important feature in the practical knowledge of these teachers. Using repertory-grid techniques in studying 14 junior high teachers, Munby (1983) found that the case study "was
the most appropriate mode for reporting findings from his research" (Clark & Peterson, 1986, 291).

Sardo (1982) studied the planning of four junior high teachers. Her findings supported the results of previous researchers: (1) consideration of content was the guiding factor in planning; and (2) consideration of objectives was less important. For example, of the four teachers, only the least-experienced teacher consistently used objectives.

In 1988, Brown (nee Sardo) conducted case studies of the yearly, weekly, unit, and daily planning of twelve middle school teachers. She found that school schedule, proven strategies, availability of materials, and interests and abilities of students dictated the planning of teachers.

Cornett (1987) conducted a case study of an outstanding high school social studies teacher in a government class setting. Five personal-practical theories and two sub-theories were constructed using a modified constant-comparative method (Glaser & Strauss, 1967). Theories were: (1) unconditional positive regard, (2) empathetic understanding, (3) teacher as human, (4) learning and teaching as fun, and (5) organized and systematic presentation of material. Subtheories were: (1) students as responsible, and (2) students as informed citizens.

Across several content areas in education, the process of writing cases was used to analyze teachers' pedagogical thinking and beliefs (Kagan & Tippins, 1991). Pedagogical content
knowledge was enhanced in the approaches taken to solving a mathematics case as reported by Barnett (1991).

Case study research in music education includes at least three interpretations of the word "case." Such studies may be classified into categories according to the type of sample: institutions, classrooms, and individuals. Within these categories, the literature may be further delineated as in the following review. While case studies exist, qualitative case studies of exemplary middle school general music teachers have yet to be written. Of the applicable literature, the following studies are germane to the research proposed because of the subject matter they address or the qualitative methodology they employ.

Case Studies Describing Institutions

A survey of case studies of institutions in music education reveals research ranging from music schools (Lampkins, 1976; Johnson, 1983) to professional orchestras (Chung, 1990). Case studies have also been conducted on implementation of the Contemporary Music Project (CMP) in five Southern Region Colleges (Bess, 1988), the historical role of music in the Detroit public schools (Law, 1988), and a cultural/historical evaluation of the Newark (NJ) Boys Chorus school (Mitchell, 1981).
Case Studies Describing Classrooms

Of greater import to this study are the case studies of musical experiences in elementary classrooms which have been undertaken—usually employing ethnographic methodology. Because they focus upon the teacher as well as upon the total environment, some of these studies have theoretical and methodological implications for the current study.

In four elementary classrooms with teachers judged highly effective, Pfeuffer (1981) described, analyzed, and assessed the curricular and instructional means and ends in music, visual art, dance and drama over a period of eighteen weeks. Participant observation and photography were used in phase one and a modified observational instrument in the second phase. The results, qualitative and quantitative data, were analyzed and written as four case studies. Finally, five categories were discussed across cases.

An important ethnographic study of musical experiences of two elementary music classrooms was conducted by Zimmerman (1983). Using the techniques of participant observer, interviews with students and teachers, a researcher journal, and various documents, she concluded ethnography is a viable methodology for studying the musical experiences of children in elementary school because it: (1) enables the researcher to address a wide variety of unanticipated questions and behaviors, (2) provides a well-documented narrative that is a valuable contribution to the
literature, (3) may be useful in training future music teachers, (4) uses language that is more intelligible to teacher-practitioners, and (5) provides a holistic view effective in anticipating new directions and identifying strengths and weaknesses of teacher training.

Conclusions reached in the study were: (1) student attitudes about music are related to their attitudes about the music teacher, (2) the space available in the classroom affects the relationships of the classroom and types of experiences possible, (3) song texts influence student preference and song selection affects the attitudes of students about music class, (4) use of Orff instruments does not imply application of Orff philosophy, (5) girls were more willing to be informants in the study than boys, and (6) demonstration and illustration are useful for allowing children to communicate their reactions to their school music experience.

Participant observations, field notes, and audiotaping were used by Theil (1984) to describe the process and content of music instruction during one semester in a fourth grade classroom. Additionally, four students were randomly chosen for weekly evaluation using a standardized musical achievement test and an attitudinal measurement instrument. Case studies of each of the four students as well as a summary and analysis of the performance of the class on the standardized tests resulted. Singing was their preferred activity rather than written work. The gain in achievement in pitch discrimination between pre- and posttest was significant. Strengths and weaknesses in the areas of
curriculum and instruction, classroom management, and evaluation were described.

Case Studies Describing Individuals and Qualities

Of greatest impact upon the current study are the case studies describing individuals and their qualities. Such studies are the most numerous type available in music education, and employ qualitative, ethnographic, and occasionally, quantitative methodology. This area can be further subdivided into cases of two or more subjects, as well as cases of individuals.

Music administrators are one sub-group of subjects for case studies. Stocking (1961) studied five selected Colorado public school instrumental supervisors. Schmidt (1982) investigated the music administrators in three public universities. Time utilization as demonstrated by Texas public school music administrators, along with the definition of their duties, was analyzed by Burden (1985). Anecdotal data were coded and use of time tabulated. Burden found the time of the administrators was spent in tasks not directly related to improving music instruction or in establishing new venues for presentation of music.

Qualities of outstanding individual music teachers at all levels have been investigated by several researchers over the last twenty-five years, using a mixture of methodologies. Qualities of these exemplary educators taken into account have included: (1) factors influencing career choice, (2) factors present in rehearsal
and classrooms, (3) factors of concern to pre-service music teachers, and (4) miscellaneous factors relating to school politics and to identification of expertise.

Using survey techniques, Burgstahler (1966) studied eighty music education graduates and selected eight for tape-recorded interviews from among those responding. Associates and family members of the eight were also contacted for interviews. He found that among those eight persons, the factors that seemed to influence their pursuit of a career in music education were as follows: (1) the presence of a piano, radio or phonograph in their homes as youths; (2) the parents were not necessarily musical; (3) the mothers were dominant; (4) poor music programs in their schools influenced them to become better teachers; (5) subjects viewed their current knowledge of music and teaching with feelings of inferiority; and (6) subjects had problems disciplining students.

Nelson (1973) used a case study with structured interview and observation to study rehearsal techniques of Texas Honor Band Directors, and to ascertain whether those techniques differed from those recommended by authorities in the field. He found techniques and procedures were congruent with those recommended. Honor Band directors: (1) are motivated to excel, (2) have found the right school and community environment, (3) have an ample number of assistants, (4) have thorough knowledge of music to be rehearsed, (5) require extra rehearsals, (6) hear and
solve problems, (7) use rehearsal time wisely, and (8) activate and maintain discipline in their students.

Bullock (1974) studied twenty-seven superior New York State junior high band directors. Using two published and two researcher-designed instruments, including a structured interview, personal and professional issues were studied and compared to a control group of "average" teachers. No significant differences were found. Superior directors were found to be: (1) shy, sober, concerned, humble reserved persons; and (2) concerned about the compensation that they receive, but not about praise or community status. Further, they seem to be creative, yet tough-minded, persistent, conscientious, and possessed of high ego-strength.

Fiocca (1986) described the rehearsal behaviors of exemplary junior high and middle school choir directors. Ratings of videotaped rehearsals, a survey, and a questionnaire in eight categories of behavior revealed that exemplary directors are those who, among other characteristics, possess competence at the keyboard, have prepared thoroughly for rehearsal, and begin with vocal warmups.

In Curtis's 1986 project, ten successful middle/junior high school general music teachers were observed using ten thirty-five minute videotapes and a nineteen category verbal and non-verbal behavior instrument. Percentages of time spent in the verbal and non-verbal behaviors included eye contact (90%), hand gestures (56%), and movement around room (22%). The remaining
categories totaled less than 10%, with the lowest times being spent in "confusion" (.15%) and negative pace (.88%), showing a propensity to have "little wasted time" (Wing, 1989, 59).

Correlations between categories selected to be paired by the researcher showed clustering of positively and negatively related categories, e. g. Negative Facial Expression and Direct Behavior Problem Solving was $r = .74$.

Knutson (1987) conducted interviews with eight choral conductors on their concepts of blend by having them respond to the methodologies and ideas of thirteen famous choral conductors from 1900 to the present. Implications for teacher training were also included.

Two case studies of the interactions of secondary choral educators with students, community, colleagues, and the school, and the impact of the interactions on their teaching practices were written by Huff (1989). The teachers, in different demographic areas, were studied using participant observation, teacher, student, and administrator interviews, and biographical/historical documents. Most important to the current study is the supportive evidence that teachers are active agents in the construction of their own perspectives, and that curricular and procedural choices made are, indeed, impacted by interaction of social, institutional, and biographical elements.

Buell (1990), in a case study of effective instrumental teachers rehearsing with symphonic bands and wind ensembles, found that effective instruction involved: (1) varied and creative
use of speaking, singing, and movement; (2) linking of teaching strategy to instructional goal; and (3) use of multi-modal instruction, including demonstration. Methodology included interviews with the teachers and students, analysis of videotaped rehearsals, and researcher observations.

Rhoads (1990) performed case studies of the decision making in choral rehearsal of five outstanding high school choral directors. Three videotaped rehearsals followed by stimulated-recall interviews comprised the data. As the subjects recalled their thinking, two broad categories emerged: rehearsal conditions and musical goals.

Case studies involving a single teacher form a small portion of the case literature in music education. Four studies exemplify this literature.

A case study of a piano professor, Joanne Baker, was written by Hatch (1987). Data included forty hours of interviews with the subject, examination of documents, questionnaires of former students, impressions of colleagues, and interviews with eight former students. The conclusion reached was that Baker is, indeed, a master teacher.

Kritzmire (1987) studied the pedagogy and philosophy of Charles Leonhard and developed a case study by reviewing his publications, interviewing him, interviewing current and former students, observing and audiotaping his teaching, compiling a photo-essay, and completing student profiles and questionnaires. The basic conclusion was that Leonhard's pedagogy is
characterized by consistent adherence to his philosophical and instructional beliefs, which seem to transfer to his students.

Tyson (1988) conducted a descriptive case study of the verbal rehearsal behavior of an outstanding director of a high school chorus. An observational instrument was developed which was used to identify eight verbal behaviors of the director in both content and instructional areas. Giving directions accounted for the largest percentage of instructional time, while the content-based events identified most frequently included phonation and diction.

Holmes (1990) conducted a case study of aural transmission during fiddle (violin) lessons. After observation of the teacher giving lessons, the aspects of the teaching model were identified as: (1) use of purposeful demonstration, (2) constant and appropriate guidance, and (3) immediate and continual participation.

Several case studies concentrate upon the preservice (student) teacher. Four studies are germane here.

Bennett (1982) developed case studies of six preservice music teachers enrolled in an initial field experience class over the course of a semester to answer questions about the differential effects of such experiences on the concerns exhibited by the students. Data consisted of pre- and post-teaching concerns, journals during field experience, and background academic and social information. Findings indicated that differential effects are experienced as evidenced by change of concern over the course of
the study. The change was found to be the result of interaction between prior socialization to teaching and factors related to the field experience.

Hearson (1983) investigated the relationship of prior experience with youth and prior leadership activities to the development of self-confidence, leadership ability, and success in music student teaching. Using interviews and a researcher-designed questionnaire, prior experience was assessed. Five standardized confidence and personality inventories were used prior to and after student teaching. The significant findings indicate a relationship between prior leadership experiences and pre-student teaching confidence, but not between prior experience with youth and pre-student teaching confidence. Personality was a significant factor in indicating success in student teaching, but neither leadership experiences nor experiences with youth were significant factors in the confidence level exhibited at the conclusion of student teaching experience.

Krueger (1985) examined the effects of student teaching upon two choral and two general music student teachers. Utilizing ethnographic methodology, she found that (1) the novice teachers were highly influenced by the school setting itself, and (2) the novice teachers were increasingly accepting of this setting and its practices.

Schleuter (1991) examined preactive and postactive curricular thinking of three student teachers in elementary general music utilizing a case study approach. Data consisted of lesson
plans, daily planning journals, participant observation, audiotaped conferences, audiotaped structured interviews, and stimulated recall conferences, all triangulated weekly. Two "overarching schema" were found: (1) considerations of all curricular categories that occurred in student teaching were situational, and (2) curricular categories were considered in an integrated manner. Fifteen conclusions resulted from data analysis, e.g. "elementary general music student teachers organize their planning process around the Tyler rationale [objectives first]" (Schleuter, 1991, 58).

Other Studies

Markowitz (1981) used case study methodology to test her model for analyzing the political behavior in institutional curriculum decision-making in music. Data were the verbal deliberations of music teachers, curriculum directors, and consultants during six meetings, anecdotal reports of a participant observer at the meetings, and interviews with the teachers after the meetings. Because the model consists of quantitative and qualitative methodologies, Markowitz believes it has a unique ability to explain and describe political behavior in institutional curriculum transactions.

In a study relative to the question of expertise in music teaching, Standley & Madsen (1991) asked five groups of 30 music teachers and students (freshman, juniors, novices, experienced teachers and experts) to write extemporaneously about 20
videotaped excerpts of live music teaching situations. Accurate facts and inferences were assigned points. As expertise and experience increased, so did the group mean; differences in scores between experts and experienced was not due solely to years of experience. This research is germane to the current study as it clarifies the expert/exemplary versus experienced teacher in subject selection.

Observational Literature

The nature of the current study necessitates the observation of the exemplary middle school general music teachers. Observational data collected in qualitative studies and qualitative case studies results from the researcher, often as participant-observer (Zimmerman, 1983; Cornett, 1987), freely making field notes from his or her observations in the classroom (Zimmerman, 1983; Cornett, 1987; Holt & Johnston, 1989; Schleuter, 1991) and/or from videotapes of the classroom. In the latter instance, the tapes serve as not only a review source for notes and transcripts, but may be employed in stimulated recall (Holt & Johnston, 1989; Mitchell & Marland, 1989; Rhoads, 1990).

These practices are in contrast to the quantitative research focusing upon defined student or teacher behaviors observed in the classroom, studio or rehearsal (Nelson, 1973; Moore, 1987) or observed in settings recorded on videotape (Curtis, 1986; Fiocca, 1986; Duke, 1987; Peterson & Comeaux, 1987; Standley &
Greenfield, 1987; Standley & Madsen, 1991). Videotaped presentations by preservice teachers which are observed by those teachers aids self-monitoring (Prickett, 1987; Furman, 1987). In all cases, a standard or researcher-designed instrument was employed, or a researcher-defined strategy applied.

The use of videotapes in any type of research necessarily includes auditorily observed occurrences. Music education observational literature also includes audiotaped episodes serving as data in quantitative (Shirey, 1990) and ethnographic studies (Zimmerman, 1983) as well as in stimulated recall (Schleuter, 1991), and "think-aloud" procedures (Brown, 1988).

**Music Teacher Criteria and Traits**

Individuals and commissions in the field of music education have attempted to establish criteria for the preparation of music teachers. The final report of the Teacher Education Commission of the Music Educators National Association (1972) contains groupings of qualities and competencies for music educators. These broad groupings are: (1) personal qualities, (2) musical competencies, and (3) professional qualities. Each category is developed further to include standards and evaluative criteria for the education of music teachers, outlined in the form of an evaluative instrument. Results of a survey of over 2,000 preservice music education majors' precollegiate activities is also included.

In a research-based investigation of student perception of music teachers, Gerber (1989) surveyed opinions of approximately 1,400 general music students. Gerber asked about activities that students liked best and least in these classes, and what they liked best about their particular teacher. He found that the students' preferences in general music teachers broadly paralleled preferences identified by researchers in other areas of education. Specifically, students liked teachers who were "nice," "funny," "fair" and "understanding." Recent research by Boswell (1991) investigated variables contributing to middle and junior high school students' attitudes about general music across two different teaching approaches. Eclectic approaches in her study were compared with a unilateral approach (Manhattanville Music Curriculum Project--MMCP). Across the two studies, highest and lowest scoring attitudinal statements were identical and the effect of the teacher (as a variable) contributed most heavily to the prediction of students' attitudes.
Summary

The purpose of this chapter has been to review the literature which has impacted the current study of the development of the pedagogical-content knowledge of the exemplary middle school general music teacher. The chapter reviewed the teacher thinking literature, including the terminology and models of several noted theorists. Further review included the case study and qualitative literature in general and music education germane to this study. The review concluded with an outline of various methods of observation used in music education studies.

Theorists concerned with teacher thinking use a variety of terminology, both derivative and original, in referring to teacher knowledge in content and pedagogy. Several models for studying the practice and thinking of teachers are in use. In this study, Shulman's Model of Pedagogical Reasoning and Action will form the basis for observation, interviews, stimulated recall, and document analysis. Specific information on these methodologies is given in Chapter III.

Music education literature related to the study illustrates the dearth of research specific to the investigation of the thoughts, actions, and knowledge of the exemplary secondary general music teacher. This study, in attempting to fill this gap, will draw upon general educational research methodology and findings as well as those specific to music education.
In the final analysis, the study must adhere to Clark and Peterson's (1986) assertion: "The ultimate goal of research on teachers' thought processes is to construct a portrayal of the cognitive psychology of teaching for use by educational theorists, researchers, policymakers, curriculum designers, teacher educators, school administrators, and by teachers themselves" (255).
CHAPTER III

METHODOLOGY

General Considerations in Qualitative Methodology

This study of the pedagogical-content knowledge of two exemplary middle school general music teachers used qualitative methodology including a structured interview, stimulated recall, observation, concept mapping, and emergent design. Most importantly, the method of analysis was a modified version of Glaser & Strauss's (1967) constant-comparative procedures. These procedures were determined to be the most appropriate for studying the content (pedagogical-content knowledge) with which the study concerned itself (Erickson, 1986), and for providing the researcher with information for creating the case studies and theory which follow.

Sampling

The selection of the participants for this study was accomplished by purposeful sampling (Patton, 1990). "The logic
and power of purposeful sampling lies in selecting information-rich cases for study in depth. Information-rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the research, thus the term purposeful sampling" (Patton, 1990, 169).

More specifically the two teachers who constituted the sample were chosen by "snowball" or chain sampling, "an approach for locating information-rich key informants or critical cases" (Patton, 1990, 176). Simply put, persons well-situated to know about informants are asked "who knows a lot about ______?" As the investigator is given more and more names, some information begins to repeat; in this study, it was the names of exemplary middle school or junior high general music teachers which "[converged]....into a small number of core cases nominated by a number of different informants" (176).

Strub (1957) stated:

"a teacher is not considered a successful teacher unless a number of persons with knowledge of the problem involved think and say that he is a success. If a group of education specialists think and say that a teacher is successful, then he is successful" (51).

Strub's assertion and related methods of sampling in music education relying in part upon the judgement of teacher expertise (Zimmerman, 1983; Curtis, 1986; Rhoads, 1990; and Standley & Madsen, 1991) led the researcher to pursue snowball or chain sampling.
An intention of this study was to examine the development of the pedagogical-content knowledge of two middle school general music teachers teaching in two different contexts: a small city and a large urban setting. A limitation imposed on chain sampling was that one informant would come from each demographic area, and sampling questions would be asked of persons situated in or knowledgeable about each area.

An Emergent Issue: Finding the Exemplary General Music Teacher

During the process of chain sampling some problems arose in the identification of exemplary middle school general music teachers as potential participants. The identification process itself became part of the emergent design of the study as it had implications for identification of exemplary general music teachers in the future.

It is not uncommon in qualitative studies of this nature for issues and questions to arise in the course of the study which researchers attempt to address and answer. The problem of sampling the population of music teachers for exemplary general music teachers at the middle school level became such an emergent issue.

The researcher was concerned about the gaps in research in secondary general music at both the middle and high school levels, but middle school general music teachers were chosen by the
researcher as the population base for sampling. There were four reasons. (1) They are less likely to be caught up in performance group pressures than those who may teach high school general music while also directing one or more performing groups. (2) They are more plentiful than the rarer high school general music teacher. (3) They teach a subject traditionally offered as part of the middle school curriculum. (4) They most likely teach general music because they were hired to do so as part of their teaching positions. This is a contrast to high school general music teachers, who, if they exist at all, were more likely hired as "band directors" or "choral directors" and given the general music duties later.

An added dimension to this study was the researcher's desire to study exemplary middle school general music teachers in both an urban area and a small city. The researcher's definition of an "urban area" paralleled Ausmann (1991): "a state's largest metropolitan centers of culture, trade and learning" (p. 12). Centercity was one of the seven such cities named by Ausmann in his definition.

The researcher's definition of "small city" for purposes of this study included cities and towns outside the state's cities mentioned by Ausmann. An additional limitation imposed excluded most rural school districts by specifying that an otherwise qualifying school district which had been formed by consolidation of two or more formerly independent school districts in the last thirty years will not be considered.
In contrast to the order in which the teachers participated, the first case to emerge from the sampling process was Mr. Ballenger. His name emerged easily as an exemplary urban general music teacher from first polling two supervisors of student teachers at a large university in a major population center, Centercity. One supervisor polled is a nationally recognized expert in secondary general music and the researcher's advisor; the other, also a member of the dissertation committee, is head of music education and known as a choral clinician. The supervisor of vocal and general music for Centercity also named Mr. Ballenger, as did a fellow doctoral candidate and general music teacher in the same city. (The latter teacher, himself, emerged as an exemplary general music teacher, though exempt from the study because of his close collegiality with the researcher, i. e. his practice was already too well known to the researcher.)

The practice of Mr. Ballenger was well known based upon the positions of the persons polled. The first two persons polled were those closely involved in supervising field placements for preservice teachers as part of a practicum in a methods class and/or as part of the student teaching in the middle school. They knew the practices of teachers in surrounding districts well, as they attempted to place the preservice teachers with exemplary teachers under whom the novices could learn and practice successful teaching routines. The Centercity music administrator polled had direct contact with teachers who were potential
participants. Their practices as teachers were well known to him in his position as supervisor of vocal and general music teachers in Centercity Schools. The other music teacher and doctoral candidate questioned has a state-wide reputation as an exemplary teacher and had worked with Mr. Ballenger when Mr. Ballenger succeeded him at Midcity Middle School in the Centercity system.

Based upon the recommendations of these persons and the location of Mr. Ballenger in a large urban system, the researcher decided to contact Mr. Ballenger as a possible participant in the study.

It was in the naming of the second participant that difficulty arose for the researcher. The researcher was not particularly surprised that the practice of Mrs. Tanner was less known for a variety of reasons. Having helped a colleague attempt the identification of exemplary general music teachers on a state-wide basis the previous year, he knew that such teachers tend to work in isolation. As a result of this knowledge, and the demographic context, a far greater variety of persons was polled in order to discover Mrs. Tanner's practice.

The arts supervisor in the Smallcity Public Schools, her superintendent, the researcher's predecessor in his college position, and a supervisor in the county system mentioned her. Due to the location of Smallcity and the types of institutions of higher education surrounding it, there were no music education student teaching supervisors to question; few, if any, student
teachers are placed in music education in Smallcity, especially in general music. None of the nearby colleges has a major in music education, and the distance to the nearest large state university in Centercity is generally considered too great to traverse for preservice placement purposes.

The fine arts supervisor, a former instrumental music teacher, supervises music, art, and drama. He first mentioned Jane, another teacher in the district, but added quickly that she was being transferred to a position as a choral director. He then mentioned Mrs. Tanner. The superintendent, on the job for a little over a year, had to be prompted by the researcher to mention Mrs. Tanner, and the county supervisor had heard of her only by word of mouth.

Various colleagues of the researcher at the campus where he teaches, judged by the researcher to be knowledgeable about the practice of music teachers in Smallcity, were also asked to name teachers. The researcher knew that most of these persons had children enrolled in Smallcity Schools. He was not prepared for a certain amount of ignorance about music teachers in the system, especially by those who had students directly involved in music at the very schools where Mrs. Tanner teaches. These persons often named performing group teachers, and were surprised that such groups were not "the same" as general music.

At the mid-point in the process, the researcher happened upon Mrs. Tanner in a department store. The researcher
recognized Mrs. Tanner because he had met her when he was a high school student and she was a beginning teacher. This was at a chamber music workshop at a mid-sized university. He also knew Mrs. Tanner to be an alumna of the conservatory of music from which he had graduated some years after her. The researcher reintroduced himself, and spoke peripherally about his research.

Mrs. Tanner indicated interest in any type of general music investigation by saying, "If I can be of any help, call me; general music is my thing!" (TV: 1/25). (In all chapters of this dissertation, the following symbols will be used to report data: I = Interview; FN = Field Notes; V = Vignette; C = Concept Map. The date of collection follows the symbol, along with the page number, if appropriate. To prevent confusion, the prefix "T" will be used for Mrs. Tanner’s data and "B" for Mr. Ballenger’s. So, "TV: 1/26" means Tanner Vignette, January 26.)

This self-nomination also figured in Mrs. Tanner’s selection as a participant. Information-rich cases were considered to be cases of participants who are willing to talk about their practices and who seem to have the courage of conviction about their practices as teachers. A teacher such as Mrs. Tanner who willingly encourages a researcher to contact him or her in such an open-ended fashion was seen by the researcher as one unafraid of what would be observed in his or her practice or of what questions may be asked.
At this point, a member of the researcher's dissertation committee experienced in finding participants for qualitative study, said "... you almost have to know the individuals themselves, and they typically don't brag about it" (G. McCutcheon, personal communication, January 2, 1992). Based upon the nominations, the chance encounter with Mrs. Tanner, the advice of the committee member, and Mrs. Tanner's location in a small city setting, the researcher decided to contact Mrs. Tanner as a participant in the study.

The researcher believes that the problems he experienced in finding Mrs. Tanner, when contrasted with the relative ease with which he uncovered Mr. Ballenger, may have implications for the practice of general music teaching, the way in which general music teachers are assigned, and the process of sampling itself. These implications are discussed in Chapter VI.

The following information specific to the context of each participant is furnished to: (1) justify the inclusion of each participant in terms of site definitions given above, (2) justify the inclusion of each participant in terms of the rationale for choosing middle school general music teachers outline above, and (3) ground the reader in the context and background of each participant so that variations in access might be understood in the following sections and chapters.
Mrs. Tanner in Context

Mrs. Tanner's selection as a participant was also partially influenced by her proximity to the researcher's practice as a teacher at a regional campus near Smallcity, as well as by her class schedule which allowed him access at a time which did not conflict with his own teaching schedule. A description of Mrs. Tanner's district, school and room and her early life and professional career follows. This information is furnished to provide a description of her teaching context and to offer evidence of its influence on her pedagogical-content knowledge. The readers of this study will also note that this description provides evidence of the suitability of her context to the foregoing requirements.

Smallcity Middle School is located in Smallcity, which has a population of approximately 45,000 in a county of approximately 130,000 (population as furnished by Smallcity Chamber of Commerce). The Smallcity Local School District has one high school and three middle schools. The total number of students in the district is approximately 8,000. The district is approximately 95% white, and 5% minority. Smallcity Middle School's population of 600 students mirrors these figures almost exactly. (Figures furnished by Smallcity Schools Fine Arts Director, and rounded for anonymity).

Smallcity Middle School has the traditional arrangement of grades 6, 7, and 8, with 33 faculty members. The school has a
principal, an assistant principal, and a guidance counselor. The school is in session each day from 7:40 A.M. until 2:30 P.M. The school day is divided into nine periods, which vary from 38 to 40 minutes, shortened this year to due to the availability of "Channel One," a commercial news program. There are three minutes between classes.

The room in which Mrs. Tanner teaches her general music classes at Smallcity Middle School is really a part of the cafeteria [Figure 3]. As a room, it is formed by pulling a supposedly soundproof curtain, open during lunchtime, across the center of the cafeteria. Mrs. Tanner has a desk, a small table, some files, and other storage areas in one corner of the room. A double semi-circle of chairs at the front of the room faces the chalkboard. The room is about 40' by 40'. She has arranged colorful posters on the walls in an attempt to make an otherwise dull room more attractive.

Several locked milk coolers, a few wooden tables used for cashiering during lunch hour, and a four-place steam table ring the perimeter of the room. A pull-down movie screen is on the south wall. A niche with a sink and some counter space makes the room look as if it was truly intended for multi-purpose use.

Three rows of cafeteria-type tables run behind the semi-circle of chairs. The room is either blistering hot or quite cool, according to Mrs. Tanner. The room contains no piano. The class on the other side of the curtain is a Quest class. (There is a music
wing, but the classrooms there are used for other general music classes occurring at the same time as Mrs. Tanner's. Thus, Mrs. Tanner's general music is held in this special room.)

Mrs. Tanner is not enthralled by the room, but she seems to think that it affords her extra space when she needs it to do some type of psychomotor activities associated with the units she teaches in the eighth grade sequence. As well, the cafeteria tables give the students space in which to work when necessary.

Mrs. Tanner is a white female in her early forties who has been teaching twenty-one years in various settings. She grew up in the then-suburban area of a major city, where she attended a junior/senior high school well known for its music program. One of the first influences upon her was a sixth grade teacher who taught music at least bi-weekly to several classrooms.

It was when Mrs. Tanner was a sixth grader that she knew she wanted to be "a classroom teacher who taught music" (TI: 2/6, p. 3). At the time, she did not know that there was such a position as that of general music teacher, partially because at the time her school did not have such a teacher, though some schools in her city did. In school Mrs. Tanner played woodwinds in band, violin in the orchestra, and sang in several vocal groups.

Her father had sung in a performing group as a young man, and held strong musical preferences. Her mother, she notes, did not particularly like any music, and frequently asked to have the stereo or radio turned off or the volume decreased. As she grew
up, her family was influenced by her father's musical preferences as evidenced by their attendance at a concert by Harry Belafonte. In the several references to the musical background of her home, the phrase "supportive, yet not involved" (TC: 3/28) summarized her outlook.

Points supporting this appeared on her concept map, "Preparation to Become a Teacher," including "paid for her lessons, bought good instrument [violin], came to concerts, [despite having] no background in music" (TC: 3/28). So while they supported her formal musical training, her parents themselves were not formally trained, though her father evidenced strong preferences for "music he liked."

Mrs. Tanner credits both the instrumental and vocal teachers in her junior/senior high school as influences in her playing and appreciation of music. She received two years of music theory and appreciation as part of her high school training, and began violin lessons at a well-known church-related conservatory when she was in eighth grade with a teacher whom she cites as another influence in her musical development.

Between her high school graduating class and the one following it, nine persons pursued music degrees. Mrs. Tanner graduated from the well-known, church-related conservatory of music in her hometown where she had studied violin as a youth. Her first teaching position, having graduated early in the academic year, 1970-71, was to complete the term in a general music
position in a county seat town approximately the same size as Smallcity. From there, she attended a large state university in an eastern state, having been influenced by a music text clinician and professor in that state to do so. Her masters degree, from that institution, emphasized Kodaly philosophies and approaches. While attending this school, she taught six years in two eastern states.

Mrs. Tanner began teaching in Smallcity in 1976, and has taught general music, string classes, middle school orchestra and chorus, and elementary general music. Some of her summers have been spent helping with the high school orchestra summer program. She is one of 24 music teachers in the district. (At each middle school there is at least one full-time music teacher; three other music teachers come to each school throughout the course of the day.)

Her current assignment includes Smallcity Middle School, one of three middle schools in Smallcity, where she teaches seventh and eighth grade general music and the sixth-grade orchestra. The balance of the day is spent between Otherend Middle School where she teaches sixth grade strings, general music, and a class for handicapped students, and Smallcity elementary, where she instructs fourth and fifth grade string classes.

Mrs. Tanner's husband, whom she married soon after arriving in Smallcity, is a teacher at Smallcity High; they have one daughter.
Figure 3. Diagram of Mrs. Tanner's Classroom. {R} = researcher
Mr. Ballenger in Context

Mr. Ballenger, the second participant in the study, is a teacher in a large urban city system within driving distance of the researcher's location near Smallcity. A description of Mr. Ballenger's district, school and room and his early life and professional career follows. This information is furnished to provide a description of his teaching context and to offer evidence of its influence on his pedagogical-content knowledge. The readers of this study will also note that this description provides evidence of the suitability of his context to the foregoing requirements.

Midcity Middle School is located in Centercity, population 630,000, in a county of close to a million inhabitants (Centercity Chamber of Commerce). The Centercity school district has 20 high schools, both traditional and alternative, and 30 middle schools. The total number of students in the district is approximately 60,000, with nearly identical percentages of black and white students (48%). Other minorities constitute about 6% of the student population. The official enrollment of Midcity Middle School is about 450 students, of which about 62% are white, 36% are black, and 2% are other minorities (Figures furnished by Centercity Schools Data Supervisor and rounded for anonymity).

Midcity Middle School has the traditional arrangement of grades 6, 7 and 8 with 30 faculty members. The school has a principal, an assistant principal, and a guidance counselor. The
school is in session each day from 7:50 A. M. until 3:00 P. M. and is divided into 9 periods of 43 minutes.

The room in which Mr. Ballenger teaches his general music classes at Midcity Middle School was built as a choral rehearsal room/classroom [Figure 4]. The back of the room (20' X 30') has six tiers of permanent risers upon which chairs are placed or upon which students may stand for choral rehearsals. The front part of the room (24' X 30') is a linoleum tile floor upon which are situated a five-foot grand piano with an electronic keyboard placed atop it, several tables with an array of music on them, a teacher's desk, files, and a table holding a stereo system and speakers. On the west wall is a chalkboard.

The walls contain permanent displays of note values, musical terms, posters of composers, posters of correct musical performance conduct, and information about upcoming events on a bulletin board. A small office for Mr. Ballenger is off the northwest corner of the room.

Mr. Ballenger is a white male in his mid-thirties who is in his fourth year of teaching at Midcity Middle School. Prior to teaching at Midcity, he taught for eight years at Gentry Middle School, also in the Centercity System. He grew up in a city like Smallcity, and attended the more affluent of two high schools extant in that setting. His school was known for its music and musical theater program. His earliest influences outside his home were the several
persons from whom he took piano lessons through elementary and junior high school years.

Mr. Ballenger grew up in a very musical home. Both of his parents sang in church and community functions, and he was always strongly encouraged to study music, play an instrument, and sing.

In high school Mr. Ballenger was active in musical theater, citing his high school drama director as an influence upon him. He also credits his piano teachers, from his elementary days onward, as influential, though each in a different way. He also enjoyed singing in an original rock opera written by a high school friend.

Mr. Ballenger graduated from a large state university in 1979, becoming a vocal music major part of the way through his freshman year. His family highly approved of his becoming a musician. He credits much of his musical enjoyment as an entering freshman to the influence of the conductor of the Men's Glee Club at the university. This conductor, as well as a younger faculty choral conductor, were cited by Ballenger as models whom he "watched, observed, and listened to" in order to emulate their choral conducting styles and rehearsal techniques (BI: 3/17). His applied teacher was head of the voice department and is a well-known vocal pedagogue. His masters degree, in Educational Administration, is from the same large state university.

His first teaching assignment, in 1979, was to complete the first semester as a band director in a district near his hometown;
he then returned to Centercity to substitute in vocal and general music at Gentry for the balance of the year. He was given the Gentry position permanently in 1980. At both Gentry and Midcity, Mr. Ballenger taught sixth, seventh, and eighth grade general music and chorus.

Mr. Ballenger is married and has two children. He directs the adult choir at his church, and sometimes sings solos for services. Mr. Ballenger is one of approximately 150 music teachers in the district. Each middle school has two music teachers: one vocal/general, and one instrumental.
Figure 4. Diagram of Mr. Ballenger's Classroom. \( \{R\} = \text{researcher} \)
Design of the Study

The guiding research questions, proposed data sources, and an outline of the research schedule are contained in this section.

In a naturalistic case study with a qualitative design, the primary concerns are that the data are accurate, there is sufficient triangulation of data sources, and most importantly, that the needed questions have been asked. Additionally, "a qualitative design needs to remain sufficiently open and flexible to permit exploration of whatever the phenomenon under study offers for inquiry. Qualitative designs continue to be emergent even after the data collection begins" (Patton, 1990, 196).

The need for emergent design in this study occurred early on in the aforementioned sampling for Mrs. Tanner when the researcher had to expand his sampling to persons outside the population of school administrators and leaders in the field of music education. "The researcher pursues deliberate lines of inquiry while in the field, even though the specific terms of inquiry may change in response to the distinctive character of events in the field setting" (Erickson, 1986, 121). In this case, as the researcher began his study, he held to Erickson's "deliberate lines of inquiry," i.e. his guiding questions and basic methodology. At the same time, the researcher responded and adapted to a less-than-smooth process of chain sampling. Further discussion of this emergent portion of the design will occur in Chapter VI.
In addition to emergent design, proposed data sources were:
(1) interviews with the participants, (2) observation of the participants, (3) concept maps drawn by the participants, and (4) stimulated recall sessions. The proposed methods of data collection included: (1) fieldnotes of the researcher from observation of participants, interviews with participants, viewing of videotapes, and listening to audiotapes; (2) videotapes of participants' teaching; (3) audiotapes from stimulated recall; and (4) preparation of concept maps by the participants. These sources and methods as well as emergent sources and methods utilized are described below in "Data Collection."

Timelines for the study were based largely upon negotiation between the researcher and the participants regarding the general music unit to be observed. The scheduled time of the class to be observed also had to fit into the researcher's teaching schedule. From the earliest conceptions of the study, the researcher intended observations of units that would last 10 to 21 days. In the case of Mrs. Tanner, observation took place over a period of 16 class periods (February 20-March 13). Mr. Ballenger's unit lasted 11 class periods (March 26-April 10). Neither teacher's class was observed when that teacher was absent. This happened once in the course of observing each participant.

Data analysis and collection began simultaneously in both cases, with analysis, member checking, and case writing concurring with and following the collection and analysis.
The guiding questions for the study as presented in chapter I, are listed again below:

1. What factors, observed by the researcher and cited by the subjects, have contributed to their content (musical) knowledge as exemplary middle school general music teachers?

2. What factors, observed by the researcher and cited by the subjects, have contributed to their pedagogical knowledge as exemplary middle school general music teachers?

3. What factors, cited by the subjects, were meaningful in their personal and professional development in content and pedagogy?

4. What effect, observed by the researcher and cited by the subjects, does teaching context have upon their pedagogical organization and practice as exemplary middle school general music teachers?

5. What was the extent of awareness, as cited by the subjects, of their pedagogical-content knowledge?
General Considerations in Gaining Access

There are three general considerations when negotiating and maintaining access to the practices of the participants in naturalistic case studies. They are: (1) consideration of risks involved in the study for both the participants and the researcher, (2) consideration of establishing informed consent on the part of each participant, and (3) consideration of maintenance of access throughout the study.

The general consideration of risk was undertaken by the researcher with guidance from the Human Subjects Review Committee of the university. The use of human subjects in any type of research may pose varying levels of risk to those who participate. Depending upon the type of research, these risks may be physical, psychological, or both.

The risks to the participants who were involved in this research were minor psychological ones--mostly challenges to their thinking about general music content and pedagogy that arose as a result of the study. There were two potential psychological risks. The first was a concern with revelation of "tacit," but "practiced" theory; that is, the participants showed evidence of theories through their observed actions. However, such theories were not fully "articulated in words" (McCutcheon, in press) for various reasons. The second risk involved the apparent
trust entailed in collaboration [which] "involves making visible one's own work to fellow workers" (Erickson, 1989, 439).

Likewise, the researcher, as half of the dyad in these collaborations was exposed to risk when questioning the "whys" of practice. Both parties—in this case, the participants and the researcher—risked "the leap of faith required in trusting that one's fellow workers will not drop their end of the log once they have picked it up together" (Erickson, 1989, 439). These potential risks, as the researcher saw them, were discussed with the participants. Risk was seen by the researcher as a central question in gaining and maintaining consent of the participants per guidelines furnished by the Human Subjects Review Committee of the university. Each participant was furnished with the "Investigator's Checklist," an outline prepared and used by the researcher for his oral briefing of the participants, a copy of the five guiding questions, and a copy of the consent protocol (summary of oral instructions).

Each participant was also orally briefed by the researcher, using his checklist, about: (1) the purpose of the study, (2) risks involved in the study, (3) general procedures of the study, (4) demands upon participants' time in the study, (5) timeline of the study, (6) confidentiality concerning and anonymity of participants in the study, (7) rights of participants in the study, and (8) benefits of the study to the participant and the profession.
The participants were encouraged to ask questions about these and other aspects of the study. They were reminded that they could withdraw consent at any time. Each was willing to participate. In each case, the principal of the school was furnished with information identical to that given the participants. Each participant was read the consent protocol [Appendix A] and asked to sign it, which they both did per guidelines furnished by the Human Subjects Review Committee of the university.

The researcher sought to maintain access throughout the study that balanced his need for data with the participants' need for performing their teaching duties. Both participants understood this balance, and were honest with the researcher about scheduling of interviews, stimulated recall sessions, and member check interviews.

There are additional facets of access which are peculiar to each of the two cases, and will be included in the sections of this chapter devoted specifically to access. The researcher believes that providing detailed information about each participant in context--district, school, room, early life and professional activities--given at the beginning of this chapter, when combined with an account of specific negotiated access to their practices below enhances thick description (Chapter IV), validity (Chapter V), and transferability (Chapters IV and V).
Accessing Mrs. Tanner's Practice

Mrs. Tanner was the first case studied by the researcher. When the name of Mrs. Tanner had emerged as outlined above, the researcher sent to her home the letter (Appendix B) requesting her participation in the study and reminding her that he would call her a few days later to answer any questions and seek her assent. When called, Mrs. Tanner assented readily, and set up a meeting with the researcher. The meeting, of limited time due to scheduling, consisted of basic explanation of the study according to the Investigator's Checklist (Appendix C), a copy of which was left with Mrs. Tanner. The five guiding questions were also furnished to her at this time. A second meeting was arranged at which the investigator could answer more questions, arrange for the signing of the consent form per University Human Subjects Committee guidelines, and conduct the structured interview.

The researcher's intent was to avoid any undue pressure upon the participants by seeking permission of the building principals only after the participants had assented. In Mrs. Tanner's case, the permission of the superintendent and supervisor had been given as part of the researcher's sampling process. As soon as Mrs. Tanner consented, the principal of the middle school at which she was to be observed--one of the two in which she teaches--was contacted for his permission [Appendix D] and furnished with information about the study. He contacted the
researcher by telephone with his permission and support of the study a week later.

The initial structured interview [Appendix E] took place February 6 at the end of the school day in the library at Otherend Middle School in Smallcity where Mrs. Tanner teaches during most of the afternoon. The researcher and Mrs. Tanner talked for ninety minutes, beginning with the signing of the consent protocols as witnessed by a fellow teacher. It was agreed that the researcher would begin his observation at Smallcity Middle School in Mrs. Tanner's second period eighth grade general music class on February 18, during a unit on the Classical Period.

Mrs. Tanner was given a sample concept map, three sheets of blank white paper, and a list of three concept maps which she was to draw at her leisure and return to the researcher. She did so and gave them to the researcher at his first observation of her class.

The researcher actually began his observation on February 20. This delay was brought about by inclement weather which cancelled school for one day and the intervention of the state music educator's professional conference at which both Mrs. Tanner and the researcher were attendants.

The researcher scheduled his arrival at the school to coincide with Mrs. Tanner's preparation period, first period, at about 8 A.M. This allowed him time to enter the room via an outside door, set up the videocamera, check its operation, and speak to Mrs. Tanner before the class arrived between 8:21 and 8:25. Mrs.
Tanner would usually be bringing needed items from the music wing, e.g. a VCR, for use in her room. The period observed was 38 minutes in length, from 8:25 A. M. to 9:03 A. M. The researcher left at the end of the class as soon as the equipment was packed since Mrs. Tanner immediately taught a seventh grade class during the next period and the researcher taught at the campus within the hour.

The researcher had access to Mrs. Tanner during this preparation time. They exchanged ideas about education in general, and the researcher asked specific questions when necessary to clarify and extend his knowledge of her practice. At the time of the stimulated recall session (3/2), the participant and the researcher discovered that his presence in the room during this preparation time was affecting the small things that Mrs. Tanner did to get ready for the class. As the researcher probed for reasons for her actions in the class, she noted in a nonjudgmental tone: "My mind is not on what I am doing so much because I've been talking to you before I start my class" (TI: 3/2, p. 1). Mrs. Tanner also noted that exchanges with the researcher prevented her from engaging in a certain amount of reflection that she normally undertook during this time frame.

For the remainder of the field observation, the researcher made an effort to be sure that Mrs. Tanner was in a position to engage in discussion and answer questions. This revelation served
to remind the researcher and Mrs. Tanner that her first obligation was to her students and that he would yield to this obligation.

Very little interaction took place between the participant and the researcher during the class observations proper. However, while the researcher did not interfere in any way with the presentation of Mrs. Tanner's lessons, Mrs. Tanner sometimes drew the researcher into the classroom arena as a participant. Examples of this interaction were: (1) when she asked the researcher for clarification of a content point, e. g. [looking at researcher after admitting to students she didn't know] "Do you know why they removed the ballet?" (TFN: 3/4); (2) when she used the researcher as an example, e. g. "I'll bet Mr. Duling--and certainly me--don't think that" (TV: 2/21); and (3) when she gave the researcher "side" information, e. g. "I can't believe it; everyone is here today!" (TFN: 3/13).

When asked about her reasons for doing this, Mrs. Tanner was quick to note that she felt the researcher was temporarily serving for her the same purpose as Jane had served. Jane, an influential colleague, worked closely with Mrs. Tanner before her intra-district transfer to another music position. The overall effect of this collegiality with Jane, Mrs. Tanner felt, carried over to her interactions with the researcher. As an example, Mrs. Tanner cited the running dialogue between the women which would occur even while one of them was teaching in the regular music classroom and the other sitting in the music office.
Besides the daily interactions during preparation time, there was a stimulated recall session (3/2), using a videotape from 2/27, and member check interviews on 3/11, 3/30, and 5/2.

Accessing Mr. Ballenger's Practice

Mr. Ballenger was the second case studied by the researcher. When approval had been received from Centercity Schools for the conduct of the urban portion of the study in one of its middle schools, the researcher sent a letter to Mr. Ballenger's home requesting his participation in the study. The researcher reminded him that he would call within a few days to answer any questions and seek his assent.

When the call was made, the telephone number had been reassigned to someone else. The researcher subsequently found that the address and telephone number for Mr. Ballenger as given in the Centercity Schools directory of music teachers was outdated by almost two years, and that Mr. Ballenger now lived in a small town east of Centercity, but continued to teach at Midcity Middle School.

Contact with another teacher in Centercity yielded the correct telephone number for Mr. Ballenger. In the interest of obtaining the correct address and seeking Mr. Ballenger's assent, the researcher telephoned him at his home. The researcher had met Mr. Ballenger only two weeks before at a professional conference, but had not spoken about his research or the fact that
he would be asking Mr. Ballenger to be a participant after receiving permission from the school district.

The researcher reintroduced himself and explained to Mr. Ballenger the course of events which had led him to call. Mr. Ballenger expressed some interest as well as some reservations about participating in a study, mainly based upon his involvement with his family, his work as a church choir director, and his concern about the adequacy of his lessons (BFN: 2/10). The researcher explained and clarified several of points of concern and obtained Mr. Ballenger's correct address.

The researcher again sent Mr. Ballenger the aforementioned letter, and included with it the Investigator's Checklist and a summary of the research proposal as submitted to the researcher's campus Professional Standards Committee in application for a small grant. The latter two items were enclosed to provide Mr. Ballenger with more immediate additional information inasmuch as the telephone call had raised several questions. The researcher indicated that he would call Mr. Ballenger within a week to seek his permission. The next day, the original letter was returned to the researcher marked "Forwarding Order Expired."

When contacted about a week later (2/16), Mr. Ballenger indicated a need for more time to study the materials and make a decision. He indicated that he would call the researcher on 2/19 or 2/20 with his decision. Mr. Ballenger called the researcher on 2/24, assenting to participate. The researcher called Mr. Ballenger
and arranged for a short meeting on 2/27 at Midcity Middle School. At this meeting, questions were answered, and Mr. Ballenger was furnished with a copy of the five guiding questions to supplement the other materials he had received.

The principal of Midcity had, by this time, received the packet of information about the study, including a letter of permission from the central office of the Centercity Schools. Through Mr. Ballenger, she sent word that "if it's O. K. downtown, it's O. K. with me" (FN: 2/27). Nonetheless, the researcher did contact the principal during the observations to introduce himself and to let her know of his presence in the school per state law.

Mr. Ballenger and the researcher agreed to meet for the structured interview on 3/17, at which time the consent protocol would be signed. The meeting was held, and the protocol signed as witnessed by a fellow music teacher. The researcher conducted the structured interview in Mr. Ballenger's classroom during the school day. This was possible due to an intra-school adjustment in schedule for the day. Due to this constraint, the access time for speaking with Mr. Ballenger was strictly limited to ninety minutes.

At this session, it was agreed that the researcher would begin observing Mr. Ballenger's second period seventh grade general music class in a unit on environmental sound and rhythm on 3/26. Mr. Ballenger was given the listing of the three concept maps, along with the sample map, and three pieces of blank white paper. He was asked to draw the maps and return them at his
leisure. Two of the the maps were returned to the researcher on the last day of observation, the last was returned 15 days later.

The observation of Mr. Ballenger's class began as planned on 3/26. The researcher arrived at the school daily at about 8 A. M. He entered via a door near Mr. Ballenger's classroom. Three days per week, Mr. Ballenger was in the middle of preparing Midcity's representatives to a mass choir of all middle schools as the researcher arrived. This schedule was interrupted about halfway through the observation schedule by the need for students to participate in district-wide standardized testing. This hiatus in the special practice time allowed the researcher extra time to interact with Mr. Ballenger by asking questions, discussing educational issues, and checking tentative conclusions.

On the days when Mr. Ballenger was rehearsing, the researcher simply set up the videocamera, checked its operation, and waited in the back of the room or in the teachers' lounge until close to the time for the class to arrive. (8:30-8:33). The class period observed was forty minutes in length (8:33-9:13). The researcher left the site as soon as the camera and other materials were packed, as Mr. Ballenger had another class immediately following.

No interaction between the researcher and Mr. Ballenger took place during the time the class was in session except for the handouts that Mr. Ballenger gave the researcher in the course of their distribution. This is not to say that there was not reactivity
on Ballenger's part to the researcher's presence in the room. Several times during the course of the study, he said, for example, that the researcher's presence brought about "an energy that I need to apply to my teaching" (BFN: 4/2).

On the weeks when Mr. Ballenger had special rehearsals, the researcher had access to Mr. Ballenger two days per week before class started. Due to this limited access, the researcher kept lists of questions that he could ask quickly, as well as a list of more involved queries that could be asked as time permitted in the course of the study. As mentioned above, this time increased halfway through the observation period, due to intervention of testing.

A stimulated recall session was conducted during the school day in Mr. Ballenger's room on 4/7. Again, this was made possible by an adjusted schedule for district-wide testing which pushed the starting time for the observed class back to as late as 9:30 A. M. on some days. Member check sessions were conducted on 4/10, 4/26 and 5/7.

Access to Mr. Ballenger throughout the observation period occurred only within the context of the school day due to the distance between Midcity Middle School and the researcher's campus and the researcher's afternoon teaching assignments.
Collection of the Data

The data collection procedures employed in this study were: (1) structured and informal interviews, (2) the concept (cognitive) map, (3) observation, (4) stimulated recall, and (5) examination of documents. The observations and interviews were recorded in the field notes and in vignettes, as well as being videotaped or audiotaped. Two additional sources of data collection were the process of sampling as an element of emergent design and the researcher himself. While the former has been discussed above, the latter instrument of collection, the researcher, is discussed below. The collected data form the basis of each case study as they exist in the current chapter and in subsequent chapters.

Data collection instruments of all types in this study were likewise influenced by Shulman's "A Model of Pedagogical Reasoning and Action" (1987, 15) [Figure I] and as further explained by him (1986a, 1986b, 1987). From Shulman's structure came most of the questions for the initial interview, as well as emergent questions used by the interviewer in subsequent interaction with the participants.

The Researcher As Data Collection Instrument

Due to the processes of observation, taking fieldnotes, and interviewing participants, the researcher is the main instrument of
data collection in a qualitative study. "They [the fieldnotes] should contain everything that the observer believes to be worth noting" (Patton, 1990, p. 239). The phrase "that the observer believes worth noting" has implications regarding the researcher's perspective.

The potential for the researcher's unique experiences and background to influence the observation, interviewing, and resultant fieldnotes led this researcher to provide information about his own unique combination of experience and education. These factors were, in part, influential in the conduct of this study and in the researcher's perspective in analysis of the data and formulation of categories and themes.

The researcher was an instrumental, vocal, and general music teacher in several public and private school districts, serving part of a day in one position as a middle school language arts teacher. His high school training and background involved experiences in high school band, chorus, and private lessons on brass and keyboard instruments. At age fourteen, he began playing the organ in a rural church, continuing as an organist/choir director in various churches to the present time. His college training was at the same conservatory as Mrs. Tanner, though some years later. In two of the public school positions, he taught general music in communities similar to Smallcity.

Further impetus for this study came about as a result of the researcher's experiences as a doctoral student and graduate
teaching associate at a large state university. His initial employment as a Graduate Teaching Associate was in the Education Department, teaching a variety of education majors in an applied educational psychology course. The following year, he became a Graduate Teaching Associate in the School of Music of the university, teaching two music classes required by elementary education majors.

His coursework in quantitative and qualitative research, as well as independent study with several of his dissertation committee members, was influential in the selection of the approach, content and methods of the study. As part of a curriculum course taught by a member of the dissertation committee well-versed in qualitative methodology, the researcher was introduced to the work of Eisner (1985), Shulman (1986a), Clark & Peterson (1986), and others. The framework for the study came from doctoral general examination questions from two of the three persons on the dissertation committee. A subsequent independent study with one of them resulted in the proposal for the dissertation.

Fieldnotes

In addition to the researcher's background of experiences and education as an influence upon fieldnotes made, the actual mechanics of such notetaking are explained here. The researcher's
fieldnotes were made upon a legal pad in pencil. Pencil was chosen so that clarifications to the notes, made in ink during review of the videotapes, would stand out easily.

Approximately the top third of each day's paper was used to outline the interaction which occurred before students entered the room or at times after class when the researcher asked the participants a quick question or two. The notes taken here included general discussions on education, as well as quotes deemed germane to the study. Answers to questions that arose in previous observations were also recorded in this space.

The left margin of the paper was used initially to record times that classroom events occurred. After three days at the first site, this practice was discontinued due to the researcher's familiarity with the routine and the lack of information received from it. The left margin was also used to record symbols that would be used in the creation of vignettes. A "Q" in the left margin signified a question asked of the students by one of the participants. Since questions asked of the students were compiled by the researcher from fieldnotes and review of the videotapes, such marking was helpful.

Other notations, for example, were "sarcasm" for Mrs. Tanner, and "digression" for Mr. Ballenger. Notes were also made as to questions that needed to be asked of each participant. These notations resulted in a list of questions to be answered by the
participant or by the researcher in future observations, e. g. "Give
time...why?" (TFN: 2/20) or "Why insist on that type of
folder?" (BFN: 3/31). As the observations continued, this list of
questions diminished.

Marginal notes also included observations of student
behavior germane to context, e. g. "Kid has 'Just Do Me' shirt on"
(TFN: 2/28), or "Did you ever catch that kid that put in the extra
'here' while you called roll?"(BFN: 3/26). Movements into or out of
the room which were seen as potentially affecting context were
also noted.

Notes about mechanics of the study also appeared on the left,
e. g. "Forgot to take 'pause' off--lost five minutes' data"(TFN: 3/2)
or "Camera on here" (BFN: 3/27). As possible categories emerged,
the left margin included notes like "social behavior," "example of
analogy," and "keeping mood positive."

Vignettes

From the fieldnotes, vignettes were written. These vignettes
represented the perspective of the researcher, that is, he "selected
in" and "selected out" features of the actual occurrences (Erickson,
1986, p. 150), an example of analysis taking place in the midst of
data collection. At the same time, the researcher was simply
telling a story, albeit a reduced account, of occurrences during the
pre-class interaction with the participants, as well as the
occurrences taking place between participants and students in the course of the class period.

Except in rare cases, vignettes were written no longer than two days after the observation, and only after the pertinent videotape was reviewed. These documents were carefully dated as to observation date and date of writing. They served as materials which could be coded during analysis, as well as documents which could be searched for support of emerging categories. Likewise, questions asked of the students by the participants were transcribed from the fieldnotes and from a review of the videotapes, and kept in a list for possible analysis. Such questions were analyzed only to discover when the teachers used questioning sequences in their lessons.

Videotaped Data

A videocamera was used to collect data for use in stimulated recall as well as serving as a source of review for the researcher's vignettes. Because they served the latter function, the videotapes were reviewed just before the writing of the vignettes—within two days of the taping. The date and time of each filming was "stamped" on the tape using the device for doing so provided on the camera.

Each class period observed was videotaped. In observing and taping Mrs. Tanner, the researcher positioned himself at the
end of one of the cafeteria tables where he had an unobstructed view of the entire part of the room used for instruction. A videocamera for taping the class was positioned on a tripod to his left, and adjusted so that nearly the entire area in which Mrs. Tanner generally stood could be easily filmed. The camera was placed on pause during certain portions of her video presentations, as no student-teacher interaction was occurring in the room and the videocamera used by the researcher did not focus well on the television screen to which Mrs. Tanner's VCR was connected.

After about five days of filming, the camera was started when Mrs. Tanner said "good morning!" to the class. This did not result in the loss of significant data, as Mrs. Tanner was generally returning graded assignments during the first minutes of the period. The researcher did, however, record significant interactions which took place during this time in his fieldnotes.

Other than a few questions on the first day, the students almost immediately forgot about the camera. It is the opinion of the researcher that the possibility of reaction by the students and Mrs. Tanner to the filming was minimal, largely due to the appearance of videocamera in schools and households in recent years.

While observing Mr. Ballenger, the researcher positioned himself in the center at the back of the room on the topmost level of the six levels of tiered seating. From here, he had an excellent view of the entire room, both the area where the lecture portion of
the class was conducted and also the area where students sat during singing instruction. The videocamera was to the right of the researcher, and was usually turned on as Mr. Ballenger began to call roll. If anything occurred before the camera was activated, it was written in the field notes. Usually, Mr. Ballenger was simply returning papers for the students' notebooks. The camera was occasionally put on pause when the students and Mr. Ballenger were listening to an extended musical selection.

As in the case of Mrs. Tanner's classroom, the students barely noticed the presence of the camera. In addition to the researcher's belief that middle school students are used to videotaping as a facet of everyday life, is the belief that, in Mr. Ballenger's case, they are also more accustomed to visits from university-level researchers and preservice field experience students. They are more used to having "something different" in the room, and have learned not to react to it.

**Interviewing**

One of the main sources of data was the interview. Each participant was formally interviewed using the structured interview at the beginning of her or his portion of the study, 2/6 and 3/17, respectively. This initial interview was audiotaped. Other interviews were less formal, sometimes structured by a few predetermined questions asked by the researcher, and sometimes
guided only by the evolution of dialogue. In the case of Mrs.
Tanner, the interviews were the few questions asked each day as
the researcher entered her room. In the case of Mr. Ballenger,
until the intervention of district-wide testing, the researcher had
only a limited time to ask a few questions. When such
intervention--about halfway through the observation period--
cancelled Mr. Ballenger's extra choral rehearsal, the researcher was
able to ask questions freely before class time.

Other interviews were primarily conducted for purposes of
member checking factual information, quotes, emerging categories,
and the final case study. These sessions consisted of showing the
participants outlines, charts and dissertation text pertinent to their
cases, and seeking confirmation, disconfirmation, or elaboration of
such materials.

In the interviews, the researcher's role was to be actively
involved in encouraging reflection on the part of the participants
about their practices. As such, the course of the interviews were
very much under the control of the researcher--a possible source
of researcher bias.

Concept Mapping

Concept, or cognitive, mapping was originated by Novak and
his colleagues (e. g. 1965). It has been found useful in education
as evidence of the structure of teacher thinking (Morine-
Dershimer, 1989), and as a means of planning and evaluation (Trochim, 1989; Caracelli, 1989). Keith (1989) found that analysis using concept maps was useful in exploring secondary issues.

The work of Morine-Dershimer and Keith led the researcher to utilize concept maps in this study. As an extension of the initial structured interview, each participant was asked to construct concept maps of: (1) what he or she considers when planning a unit in general music, (2) what prepared him or her for the position of general music teacher, and (3) what he or she perceives as his or her methodology in teaching. These maps: (1) generated and defined categories in the study, (2) provided additional support for researcher interpretations, and (3) raised additional questions not covered in the structured interview.

Both teachers were furnished with a sample map and the topics to be mapped at the close of the structured interview. By design, no interpretive discussion about the three map topics took place. The researcher asked that they produce the maps at their leisure, but within a period of about a week. The resultant maps, figures 7, 8, and 11 in Chapter IV, took outline form in both cases.

The researcher also hoped to measure change across the time of the study. In Mrs. Tanner's case, the initial maps were produced quickly, allowing time to produce a second set at the end of the study covering the same topics. In Mr. Ballenger's case, the time taken for the production of the initial maps paralleled the researcher's entire observation period. No time was available to
produce a second map. The single set of maps he produced were quite lengthy and detailed, due in part to the considerable care Mr. Ballenger took in their preparation.

**Stimulated Recall**

One stimulated recall session was held for each participant, 3/2 and 4/7 respectively. Stimulated recall involves the use of an audio- or videotaped lesson presented by a teacher and played back by a researcher for that teacher. The researcher or teacher then stops the playback to ask questions or give information about the teacher's interaction in the classroom, as well as his or her thinking behind such interaction.

In this study, the recall sessions were audiotaped as the researcher and participants viewed one of the videotaped classes about midway through the observation period (Tanner, 2/26; Ballenger, 4/6). Fieldnotes were also taken by the researcher during these sessions. The researcher chose stimulated recall as a form of triangulation and member checking (explained below). By asking the participants what their thoughts were at a given point in a lesson, he was able to confirm or disconfirm his emerging interpretations of the teachers' central themes. As well, the participants volunteered new sources of knowledge for practices observed on the tapes.
Transcripts

Transcripts were prepared by the researcher of member check interviews recorded on audiotape. Transcripts of the initial structured interview and the stimulated recall sessions were made by a transcriber hired by the researcher after he had listened to each audiotape twice.

No transcripts were made of the videotapes except when data was important in the reporting of the cases. However, the researcher clarified his fieldnotes and wrote vignettes based upon a review of each tape and upon his observation fieldnotes.

Documents

Documents were collected by the researcher. For Mrs. Tanner, they included the "red folder" which functions as her text, and worksheets and other handouts from the unit observed as well as from the opening unit of the eighth grade rotation. For Mr. Ballenger, such documents included expendable handouts given for the students' notebooks, and informative handouts used by him, and collected at the end of each period. In neither case was the course of study examined.
Analysis of the Data

Analysis of the data in this study was an ongoing process occurring before, during, and after the data were collected. Though qualitative researchers are admonished to prepare collected data carefully in terms of transcripts and notes, the analysis phase begins on its own from the time the researcher looks at his or her first datum—whether it is properly prepared or not—until the time he or she closes the study. That is, the data in qualitatively analyzed studies are subject to almost immediate scrutiny for patterns and categories.

As outlined above, the researcher, beginning with his sampling process, made fieldnotes and created vignettes about his experiences, and later, about his observations of the participants. This data was analyzed immediately even in the very raw forms of notes and researcher questions as the vignettes were written. Ideas for categories formed as the researcher replayed audio and videotapes.

The analysis of data in this study was guided by certain perspectives. The combination of the perspective furnished by the researcher and those furnished by the participants led to creation of categories, case studies, a theory, and ultimately to an understanding of the participants’ pedagogical-content knowledge.

A modified version of the constant-comparative method was used in reducing the raw data to categories, case studies, and
theories. As explained by Glaser & Strauss (1967) and Strauss & Corbin (1991), this approach does what its name implies; there is constant comparison of data both internally and externally. In this study, data were constantly compared with each other using the researcher's perspective to create categories, which were then compared with the participants' perspectives as a check for researcher bias. Additionally, data in the form of raw data, categories, themes, and ultimately case studies were compared between the two cases to arrive at the theory and new comprehensions presented in Chapter V.

As in "Data Collection," the analysis of data using the constant-comparative method was influenced by the structure presented by Shulman in his "Model of Pedagogical Reasoning and Action." During all phases of data collection and analysis, the researcher not only compared data in an intra- and inter-case manner, but also inductively considered data compared to Shulman's model and its categories. This was done in conjunction with the five guiding questions as a method of keeping the analysis focused upon the sources and themes of pedagogical-content knowledge.

The mechanics of data analysis employed in this study were: (1) the reduction of immediately observed data to fieldnotes, (2) the creation of vignettes from fieldnotes and review of videotapes, (3) the preparation of transcripts of selected audiotapes, (4) the coding of all written materials, (5) the checking and recoding of
materials using emergent categories, (6) the writing of cases for each participant, and (7) the comparison of cases' data and writing theories and questions based on comparison.

Using various colored highlighting markers, the written materials were coded according to emergent categories and themes in each case. For Mrs. Tanner, these included reactivity (lime green), social perspective (purple), mentors/influences (orange), analogies/questions (light blue), motivation (yellow), and organization (pink). For Mr. Ballenger, these included mentors (orange), central theme (blue), digressions (lime green), intensity (pink), sequence/organization yellow, and student characteristics ("S" in margin). Other sub-routines were used in tracing sources of pedagogical-content knowledge from the color-coded categories and themes. Though written materials were frequently reread through the course of the analysis, materials on computer discs, such as the vignettes, were searched by the computer for key phrases or words when necessary.

In the course of analysis, categories were created as needed, coding was adapted to meet the change, and old categories and themes were abandoned. Early categories were subjected to member check by the participants; contextual portions of this chapter and case studies contained in Chapter IV were subjected to participant confirmation.

Through ongoing analysis during and after data collection, the process of collection was stopped when, as Glaser & Strauss
state, the categories became saturated. Saturation, as used by Glaser and Strauss (1967), occurs when work with the categories focuses increasingly upon properties and dimensions of the categories versus incidents (e.g. in vignettes) applicable to them.

Another aspect of saturation was that in interaction with participants, data representing approaches, beliefs, and theories related to classroom practice (pedagogical-content knowledge) began to repeat, both as observed by the researcher and as stated by each participant.

The writing of the case studies followed data analysis. The categories and subcategories became themes of the participants’ pedagogical-content knowledge to which stated and observed sources could be traced. Themes and sources were supported by quotations from fieldnotes, transcripts, and tapes, and illustrated by appropriate graphic representations, e.g. Figures 3, 4, 5, and 9.

Throughout the analysis process, the researcher employed certain procedures to insure that the conclusions reached in the case studies and case comparisons were credible, or worthy of a reader’s trust. These procedures were: (1) preparation of the researcher, (2) triangulation, (3) member checking (4) maintenance of context, (5) search for disconfirming evidence, and (6) thick description. These six procedures are amplified below.

The researcher prepared himself for conducting this study in three ways: first, the researcher had experience in research classes, and had carefully prepared his proposal over a period of
several months. This care was taken to establish proper guiding questions and to assure conceptual grounding of the study in the extant literature.

Second, after the researcher had prepared his initial structured interview questions (based in part upon Shulman's Model of Pedagogical Reasoning and Action), he pilot-tested them by practicing the interview with three active middle school general music teachers excluded from the study by virtue of their positions as fellow doctoral students.

Third, the researcher spent time observing and supervising field placements of pre-service teachers in a middle school as part of his university teaching duties, and further heightened his powers of observation by serving as a rater in two dissertations involving auditory and visual observation of teaching. Yet another part of the preparation was the observation of four middle school general music teachers identified as exemplary in a videotaped format furnished by the researcher's advisor.

The use of triangulation insured that the themes and sources of pedagogical-content knowledge of the two cases had emerged from and were evident in more than one data source: fieldnotes, transcripts, concept maps, tapes, vignettes, and documents. This is largely because:

"different kinds of data have captured different things and so the analyst attempts to understand the reasons for the differences. At the same time, consistency in overall patterns of data from different sources and reasonable
explanations for differences in data from divergent sources contribute significantly to the overall credibility of findings" (Patton, 1990, 467-468).

Member checks were conducted with the participants to test emerging themes and cited sources of pedagogical-content knowledge. The researcher subjected his work to the scrutiny of the two participants in areas in which he believed he may have been biased in some way by the teaching approach observed, the context of the observation, or the specific content matter being taught.

As categories and themes emerged, the researcher brought the two participants thematic lists of his interpretations, diagrams of his interpretations, sections on context and access included in this chapter, and finally, complete cases as presented in Chapter IV. Some of the member checks were but a question or two asked on a daily basis or a question in the midst of an interview, while some were more formal audiotaped interviews. Toward the end of the study, the member check interviews focused upon the pages of the document itself.

Both participants felt free to disagree with the researcher and to help him modify his interpretations, providing a check against researcher bias. An example was the researcher's question to Mrs. Tanner about her applied violin teacher's influence. "No, Ralph wasn't 'love of music'--no, no--with him it was just 'musicianship'" (TI: 3/11, p. 2). Mr. Ballenger also corrected the researcher's assumption that a night club pianist with whom
Ballenger studied, had become a mentor, noting, "he influenced my piano playing, taught me chord symbols, but wasn't a mentor" (BI: 3/17).

Likewise, the researcher noted that the participants experienced some degree of reactivity to the study by paying much closer attention to certain issues and procedures in their teaching. This was observed, for example, when Mrs. Tanner performed her "good morning" experiment (FN: 3/10), seeing how many students returned her greeting. This followed discussion of her use of the greeting as a signal to start class (TI: 3/2, p. 15) and her statement after forgetting to do it the next day, "I should say 'Good Morning'" (TFN: 3/3). This reactivity also was manifest in the participants' own statements to the researcher as evidenced by Mr. Ballenger telling the researcher, "My work with the whole set of morning classes is influenced even after you pull out [leave for the day]. I think a little more clearly--keep my focus" (BFN: 4/2).

In this study, context was maintained by the researcher's visits to the participants' classrooms. This was done not only to observe the teachers, but also to examine the context in which and conditions under which they practice as exemplary teachers. The researcher also asked them about schedules, teaching load, behavior of students, and extra duties performed. Context in this study was crucial in and of itself, as it can be both a source of pedagogical-content knowledge for the teacher as well affecting the acquisition of such knowledge by the teacher.
The researcher remained alert as analysis began for disconfirming evidence of his interpretations. This practice, a search for "discrepant cases" (Erickson, 1986), is another effort to prevent researcher bias. The use of audio and videotaped materials enhanced this effort by providing the researcher unlimited access to the classrooms, albeit vicarious.

As themes of pedagogical-content knowledge became evident for each teacher, the researcher's observations, live and taped, and his search of written data sources focused upon incidents, statements, or practices which could have disconfirmed his interpretations. No substantive disconfirming evidence was found to radically alter the researcher's interpretations of the participants' practices.

The final step taken to insure credibility in this study is seen in this and the following chapter. The description of each participant in context, the outlining of procedures for access contained in this chapter, and the writing of the cases in the next chapter all provide thick description of the participants' practices, context, and themes of their pedagogical-content knowledge. Likewise, careful, detailed description of the methodology employed contributes to readers' ability to make transfer decisions compared to other contexts.

In terms of ethics, the researcher attempted to conduct the study and himself in a manner that was above reproach. As outlined in various foregoing pages, the researcher took care to:
(1) keep the participants informed of the progress of the study and of his emerging interpretations of their practices, (2) continually negotiate access to the participants in the course of the study, (3) insure confidentiality of data and information accessed, (4) establish anonymity of the participants and their school districts, (5) insure that his presence in the classrooms did not negatively affect the teachers' presentations to their students, and (6) insure that the data were carefully recorded, organized, coded, analyzed and presented as accurately as possible.

The researcher believes that his study will be of benefit to the music education profession in terms of the case studies presented and the implications of the studies and their categories, themes, models and theories. The final benefit of participation for Mrs. Tanner and Mr. Ballenger remains to be seen. The presentation of evidence in the foregoing pages has pointed to at least a modicum of benefit to each participant as cited in their reactions to having the researcher present in the room.
CHAPTER IV

SOURCES AND THEMES OF PEDAGOGICAL-CONTENT KNOWLEDGE

Introduction

This chapter describes the sources and themes of the pedagogical content knowledge of the two case study participants. The case studies are the "thick description" of each teacher's practice which will be compared and contrasted in Chapter V.

To answer the five guiding questions, the researcher sought to identify the sources and themes of pedagogical-content knowledge of the two general music teachers. Data collection procedures used to identify sources and themes included: (1) questioning the participants about their perceptions of an observed teaching practice, (2) interviewing the participants about sources and influences on their content and pedagogical knowledge, and (3) asking the participants to make concept maps of the three teaching concepts outlined in Chapter III.

After identifying possible sources and themes of the pedagogical-content knowledge of the two general music teachers, the researcher constructed the central themes through: (1)
observation of practice in the classroom; (2) examination and coding of field notes, vignettes, curricular materials (handouts), concept maps, and transcripts; (3) viewing and listening to video and audio tapes, both transcribed and untranscribed; and (4) checking the emergent and final themes with each participant in member check meetings.

The themes of pedagogical-content knowledge for each of the teachers emerged from a cycle of observing and questioning each participant, examining and analyzing the data, and confirming (member checking) tentative and final conclusions with the participants. These themes of pedagogical content-knowledge, as defined in Chapter I and applied to this study, are considered to be identical to McCutcheon's "theories of practice" (in press). They are similar to Elbaz's "practical knowledge" (1981), Clandinin's "personal practical knowledge," and Argyris's "theories of action" (1982).

The themes are the evidence of both pedagogical and content knowledge sources blended by teachers into pedagogical-content knowledge. Themes of pedagogical-content knowledge in turn affect the choices teachers make from their sources for teaching. The cycle is completed when both pedagogical and content knowledge are enriched by new comprehensions or new implications arising from teaching [Figures 1 and 2].
Mrs. Tanner's entire practice as an exemplary middle school general music teacher revolves around a central theme: her social perspective [Figure 5]. This theme affects how she comprehends, plans, transforms, presents, evaluates, and reflects as a teacher. In turn, this overarching theme is elaborated, extended, and refined by new comprehensions. In and of itself, the social perspective theme is preceded by and negotiated through a personal characteristic: her motivation. This characteristic is a personal quality affecting all aspects of her life, including teaching. It results not only from her multiple sources of pedagogical and content knowledge, but also from her natural and developed abilities, her personal preference, and her personal curiosity.

Evidence of Mrs. Tanner's sources and subsequent central theme were revealed in interviews, transcripts of interviews, concept maps, and through researcher observation. These multiple sources provided triangulation for researcher interpretation. The interpretations, including the central theme, were subjected to participant confirmation through member check. Additionally, the sources were organized into a framework according to their properties and dimensions, their relationships to each other, and their contributions to both pedagogical and content considerations [Figure 6].
While portions of Mrs. Tanner's social perspective were evident in a variety of ways, she explicitly verbalized the core evidence of this perspective on three occasions. The first statement was noted in the initial structured interview. [Bracketed material has been added by the researcher to maintain context. Pauses are shown by the three periods (...), not ellipses. Interruption and overlap of dialogue is shown by the broken line (--)].

Tanner: "At the start of the nine weeks, or six weeks--and, uh, I tell them that as one of the goals in my class that I really don't care--and I truly don't care--if they don't want to come or participate in my class. I tell them I assume they will [participate] if they want to get along with me. It's far more important that they are able to get along with each other and work out problems together. Because when they get a job--"  

Researcher: "Is this Quest again?"

Tanner: "No, this is just my philosophy. When they get a job, if they know when Bach died, it's not going to make any difference unless they become a music professor somewhere. But that they can work with other people, ya' know, work on a timeline [one of her particular class projects] or some kind of project, then I view them as a success" (TT: 2/6, pp. 27-28).

The second expression appeared in the stimulated recall session when Mrs. Tanner digressed to explain what things are "really important," and how she knows whether to "make an issue of something" with a student in class.
"I mean, it's like—I could spend an extra week doing Amadeus [a movie], if I really didn't have something else to do. Simply by—you know—and again, you may think this is a strange thing to say—but I do believe this: I really don't care whether they learn this [class content] or not. I mean, I'm going to expose them as much as I can, but it's far more important to me whether they can get along with each other. Because when they get a job, they may or may not need to know what the Baroque Period was, but they will need to know how to interact with other people and do things with other people. And they've got to learn it—and I do spend time talking to them about what's appropriate and what isn't. And I don't think enough teachers do that" (TT: 3/2, p. 11).

The third statement of her social perspective occurred as the researcher conducted a member check with Mrs. Tanner (TI: 3/30) of some of his interpretations. The researcher asked Mrs. Tanner about her practice along the lines of Shulman's "organizational, interactional, social, and management aspect[s] of classroom life, sometimes dubbed the hidden curriculum" (1986a, p. 8). As the researcher probed for this information without defining the hidden curriculum, the social perspective again manifested itself verbally. The sequence, because it is crucial to Mrs. Tanner's perspective and her confirmation of it, is included in its entirety (underlined words are those vocally stressed by the speaker).

Researcher: "Do you know what the hidden curriculum is?"

Tanner: "I've heard that term before."

Researcher: "What would you say it is?"
Tanner: "Oh, golly, I don't know..."

Researcher: "...I mean, not even the technical term. If you had to—if some kid came up to you and said 'I heard the principal down the hallway; he's talking about the hidden curriculum,—what does he mean?'"

Tanner: "Well this is just pulling it out of the blue, I would think--"

Researcher: "—that's what I want you to do--"

Tanner: "—golly, I would think...you may think that this is off the wall...teaching basic morality.

Researcher: "No [that's not off the wall]. How do you do that in your class?"

Tanner: "You give kids something that is worthwhile to them, and they are more likely to try and do something, since if they're successful—if you create something where they are successful, they're gonna' try to please you and if they're trying to please you, then you can basically tell them what's right and wrong."

Researcher: "And so, would you say that every teacher probably teaches the hidden curriculum in some form or another?"

Tanner: [shaking her head 'no'] "mm-mm...'cause some teachers don't care about that. I don't think that's so true in the middle school--"

Researcher: [straining for a textbook definition] "...But if they don't care about it, aren't they also teaching it by its absence?"
Tanner: "Well, that's true."

Researcher: "Well, there is a definition for it, but it's what you say it is. You know, like, in your class, the hidden curriculum is what I called 'the social perspective.'"

Tanner: "...yeah--"

Researcher: "--and everything is overlaid by that, although that's what we need to talk about here in a minute. I'm still not a hundred percent--I'm not ready to 'let the cement dry' on it--"

Tanner: "...yeah"

Researcher: "...so that's why I asked about what you do--"

Tanner: "--because I do tell the kids, upfront, the first day, 'ya' know, I really...' and I really don't--I want them to learn; I want them to be excited about music the way I am, but I know that's 'la la land' for most kids. There are gonna' be a few in there who are gonna' wanna' go out and buy Bach tapes in there, you know. They're the rare ones. The reality is I want them to feel successful, and I want them to be able to get along with each other. If they don't learn anything about Bach, it's not gonna' matter a whole lot in their lives. If they can get along with other people, it will. (TI: 3/30).

The researcher then explained how Shulman (and Eisner) view the hidden curriculum, especially as explicated in Shulman (1986a) as one of two "agendas":
Researcher: "--and he [Shulman] said that there're two little strands that run through between the teachers and the students; there's a social structure, or a hidden curriculum, and there's--"

Tanner: [eagerly] "--yes--"

Researcher: "--and there's the taught curriculum--this is Eisner, too...Elliot Eisner."

Tanner: "That's interesting."

Researcher: "--and, to me, well, I don't know, [showing Mrs. Tanner a chart he had made of his interpretation of her practice] I don't want to get bound up in charts and have you be influenced by it, but maybe that's where I'll move--"

Tanner: "--I think in my case, that's true. It's very true."

Researcher: "Oh...good."

She subsequently explained her confirmation:

Tanner: "This is what makes a good class to me and a class that isn't a good class: It doesn't matter who's in it, it's how they get along with each other. If I get a class that cannot get along with each other, I really struggle. You know, other teachers look at that, and they're still spewing out this knowledge and having the kids parrot it back and it doesn't matter to them."

Researcher: "Is that how music is different from other classes?"

Tanner: "No, it's me. It's because I want them to be able to get along with each other, and it's hard, especially with young kids--like sixth graders--ya' know, it's really hard for some of 'em to work together with other people; they're so anti-social. And it's part of
adolescence—just constantly at each other’s throats all the time” (TI: 3/30).

The social perspective as a central theme is very much like a "master or executive computer program" (Argyris, 1982, 84) for Mrs. Tanner. It may be analogized, as above, to "an overlay" which covers all parts of her use of pedagogical reasoning and action. The researcher, in explaining his interpretations to Mrs. Tanner (TI: 3/30), also likened it to "a filter."

Mrs. Tanner had confirmed the researcher’s interpretations explained above:

Researcher: "Other than the fact that you have never thought of it that way, does that seem logical?"

Tanner: "Yes, especially when you’re talking about [my] thinking" (TI: 3/11, p. 3).
Mrs. Tanner's
Sources and Themes of Pedagogical-Content Knowledge

Sources

Mentor < Simple > Influential

Motivation

Personal quality

Central theme

SOCIAL PERSPECTIVE

Intensity

Questioning
Analogy
Humor/sarcasm

Organization

Materials used in
Cooperative Learning
Individual Learning
Energizers

Student Reactions

Figure 5. Mrs. Tanner's Sources and Themes of Pedagogical-Content Knowledge.
Mrs. Tanner's Sources Outlined and Defined

Mrs. Tanner has three sources from which she draws her pedagogical-content knowledge. They are: (1) mentor sources, (2) simple sources, and (3) influential sources. These sources are grouped by their common properties [Figure 6]. Each source may be either discrete, that is, contributing mainly to either pedagogical or content knowledge, or concurrent, contributing to both content and pedagogy. Cases of the former dimension seem more rare in Mrs. Tanner's practice. Defining attributes and explanations of each source supporting Figure 6 are given here. Evidence of the existence of each source is then provided from the collected data. Mrs. Tanner's mentor sources of pedagogical-content knowledge have the properties of being: (1) persons, living and deceased; (2) either long or short-term in influence; (3) either concurrent or discrete sources; and (4) persons who may act as models of exemplary teaching.

Mrs. Tanner's simple sources of pedagogical-content knowledge have the properties of usually being a simple fact or concept. As such, simple sources are: (1) contributory more to content than pedagogical knowledge, (2) limited in long-term contribution to her pedagogy, but (3) remembered by her for transformation and presentation to students throughout her years of practice.
Mrs. Tanner's influential sources of pedagogical-content knowledge have the properties of being: (1) in evidence in both content and pedagogical knowledge, (2) an enduring influence upon her practice as a teacher over time, (3) arrayed in forms that require little or no adaptation for presentation to students, and (4) extant in theoretical, philosophical, and conceptual forms rather than in human form, i.e. a mentor.
Mrs. Tanner's Sources of Pedagogical-Content Knowledge

**Mentor Sources**

<table>
<thead>
<tr>
<th>Concurrent</th>
<th>Model</th>
<th>Discrete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jane</td>
<td>Ralph</td>
<td>Dee</td>
</tr>
<tr>
<td>Lance</td>
<td>Maureen</td>
<td>Gilda</td>
</tr>
<tr>
<td>Albert</td>
<td>Sandy</td>
<td>Molly</td>
</tr>
<tr>
<td>the Family</td>
<td>Maryann</td>
<td>Louie</td>
</tr>
<tr>
<td>Mark</td>
<td>Mike</td>
<td>Jan</td>
</tr>
<tr>
<td>Joellen</td>
<td>Ann</td>
<td>Jane</td>
</tr>
</tbody>
</table>

**Simple Sources**

- Discrete
  - college courses
  - travel
  - concerts
  - music listening
  - workshops

**Influential Sources**

- Concurrent
  - "gems"
  - Quest
  - music
  - teaching experience
  - knowledge of student characteristics
  - knowledge of contextual conditions

Figure 6. Mrs. Tanner's Sources of Pedagogical-Content Knowledge.
Mrs. Tanner’s Concurrent Mentor Sources

The presentation of Mrs. Tanner’s mentor sources of her pedagogical-content knowledge includes names which she listed on her two concept maps [Figures 6 and 7], mentioned in interviews, or were determined by the researcher and confirmed by Mrs. Tanner. All properties and dimensions of the mentor categories were confirmed in member check. The names used to insure anonymity of the persons were first names chosen by the researcher. The use of such names instead of titles like "Dr.," "Mr.," or "Mrs.,” places all mentors on an equal footing. They are not, however, equal in their strength as sources for Mrs. Tanner’s practice.

Concurrent mentors, those who contribute to both pedagogical and content knowledge, include Jane, Lance, and Albert. The latter two men were Mrs. Tanner’s junior and senior high school band and choir directors. Their names emerged at the initial interview (2/6) as early mentors. As such, Mrs. Tanner made no distinction between the two of them, except for the fact that Lance recommended Ralph to her as a private teacher (TT: 2/6, pp. 1, 3, 4). Each of the two teachers, she believed, contributed to both pedagogical and content knowledge (3/30) and were early influences on solidifying her decision to become a music teacher (TT: 2/6, p. 4).
Jane has been and is Mrs. Tanner's most recent and current mentor. Jane taught with Mrs. Tanner at Smallcity Middle School for several years as well as in three other buildings. Together they planned the Classical Period Unit for eighth graders (observed in this study) and the entire nine-week sequence presented to that grade level. She contributed to both Mrs. Tanner's content and pedagogical knowledge, and so appears listed as "concurrent." She also appears in the "model" list, as Mrs. Tanner regards her as a model teacher of middle school general music (TI: 3/30).

Mrs. Tanner exemplified the high regard she has for Jane in several ways and in several contexts beginning with the first concept map (2/20) in which she lists Jane as a mentor on her map, "Preparation for Teaching General Music." Though not mentioned in the initial interview, Jane's name arose on the first day of observation as the researcher set up the camera:

"Mrs. Tanner said she had been greatly influenced by Jane, a teacher with whom she had taught, but who now had been transferred to the high school as an assistant choir director. She said she and Jane 'thought alike' and that Jane had helped her 'get organized.' She and Jane had worked out the greater part of the framework that she uses in teaching the eighth grade classes" (TFN: 2/20).
Tanner's Concept Maps #1 (Copied exactly from handwritten maps)

I. Preparation for teaching general music

Education
1. Private study of violin
2. College and post-college degrees
3. Attendance at a multitude of conferences and workshops
4. Classroom experience

Self-motivation
1. Listening to all kinds of music
2. Travel (with classes in mind)
3. Attendance at many concerts
4. Performing in the community

Mentors
1. Lance-Albert-H.S.
2. Ralph-Gilda-College
3. Max-Molly-Postcollege
4. Jane-Dee-Sandy-Jan-fellow teachers

Learning to get organized and set goals
1. Knowledge of student abilities
2. Learning to set reasonable long-range goals
3. Maintaining discipline and positive atmosphere
4. Use of available equipment
5. Access to materials through filing system

II. Considerations when planning a general music class

Music
1. Focus on classical composer
2. Instruments used
3. True to the period
4. Something to compare to present

Student
1. Age
2. Previous knowledge
3. Attention Span
4. Goals for evaluation

Classroom
1. Arranged so students can see
2. Available equipment (tape, C. D., VCR, for example)
3. Legible worksheets that are appealing and appropriate

Figure 7. Mrs. Tanner's First Concept Maps.
Teacher
1. Personal knowledge of subject
2. Time available to prepare
3. Constant upgrading through own participation and experimentation
4. Teaming when available

III. Methodology

Concept
1. Curriculum guide
2. How to fit into a unit
3. Find appropriate (obvious) musical examples
4. How important is it? (Amount of time to spend)
   a. to what degree to develop it

Student
1. Previous knowledge
2. Previous experience
3. Type of response teacher wants: create/write/perform
4. Goal setting-how to do #3

Approaches
1. Full class- brainstorming
2. Small group brainstorming/creating
3. Individual-create and perform in non-threatening atmosphere
4. Bring it all together- self evaluate and teacher evaluation

Teacher
1. Break down concept to lowest common denominator
2. Pose a problem related to concept students can solve
3. Develop an "energizer" to pique students' interest
4. Research to find relevant examples of today for students to relate
5. Means for evaluation and lessons or worksheets to aid students
Tanner's Second Concept Maps: (Copied exactly from handwritten maps.)

I. Preparation to Become a teacher
(The title of the maps were changed by Tanner from the instruction sheet.)

Family
1. Supportive, yet not involved
   A. Paid for lessons
   B. Came to concerts
   C. Bought good instrument
   D. No background in music

Education
1. Excellent Jr./Sr. high school program- influenced selection of private violin teacher and Youth Symphony
2. Excellent undergrad program at ________.
3. Teaching experience in several districts
   (this was invaluable--you don't keep repeating mistakes--fresh starts).
4. Teaching experience in several levels--elementary, Jr. high/middle, and high school. Also different subjects--choir, orchestra and general.
5. Teaching workshops and travel--excellent source of ideas, materials, and people who share interests
6. Graduate degree in (state name).
7. Extensive travel
8. Extensive "concert going"

Mentors
1. Lance 9. Mark
2. Albert 10. Molly
4. Ralph 12. Jane
5. Gilda 13. Dee
7. Joellen
8. Ann

Figure 8. Mrs. Tanner's Second Concept Maps.
II. Planning for a Unit

Music
1. Era or style
2. Composer
3. Orchestration
4. Focus on particular element?
5. Related historical tidbits of interest

Students
1. Age
2. How to relate to present to bridge into past
3. What is past knowledge--have they been exposed to material at all in past?
4. How to evaluate what they have learned (written and performed)

Equipment
1. Source of music
2. Hands on worksheet or guide
3. Pictures or video-something visual to relate

III. Methodology

Listening
1. Teacher gives information
   A. Talking
   B. Reading
   C. Listening with a focus to a selection of music
   D. Video with related "Question & Answer"

Energizers
1. Several short 5 minute activities to start class or end it--with little evaluation as an end
   A. Listening to compare old and new
   B. Search for something (composers--word find, etc.)
   C. Bonus stickers as motivators to recall previous discussions
   D. Games related to subject
Cooperative Learning

1. Q/A review with partner or group
2. Group compositions related to subject
   A. Must be performed to be evaluated
3. Stations--individual performance

Evaluation

1. Worksheets
2. Listening guides
3. Group performances
4. Stations--performance
5. Written tests and quizzes
Mrs. Tanner went on to explain that the "red folder" of readings and handouts used in the eighth grade classes was created by Jane and her. The relationship created by working together with Jane on the preparation, organization, transformation of musical information for the unit observed was mentioned, remembered fondly, and elaborated upon often by Mrs. Tanner:

"She explained again some of the influences of Jane on the unit. Much of the material had been Jane's" (TFN: 2/21).

Continuing chronologically to another vignette:

Researcher: "Do you think that you would have stopped growing as a general music teacher without Jane's influence?"

Tanner: "No, but I would have gone in different directions, especially in regard to the individualization aspects of the stations work" [a learning center unit which ends her general music classes at seventh and eighth grade levels] (TV: 2/24).

In another interview she turned to some specifics:

Researcher: "So these aren't all Jane's [ideas]?"

Tanner: "The energizers? No, a lot of them are mine. But again, it's hard to say where one begins and one ends because we do think a lot alike and I miss her terribly this year--not having that sounding board and vice versa. We're just...we were coming from the same plane and it's...there aren't many people around here on that same plane. The thing is, I was doing things like that; she was doing things like that. Then as we found that, that was the exciting thing. Then we both started looking for more things to do."
She went on to tell how Jane had helped her conceptualize and transform:

Tanner: "I think the biggest thing Jane did is show me—I did it, but I didn't do it as much as I did after I started working with her—Where you start here [motions] and go that way."

Researcher: "Start with the ends and find the means?"

Tanner: "Right. This [motions] is where you want them to be, how do you get there? I really like this and I like that and I would put them together and I'd come up with an "end." She showed me: 'start there and _____' [motions]. That's what I mean by organization. I had organization. I always had something in my mind. In her case, it's more of a long-range goal" (TT: 3/11, pp. 3, 5-7).

In the vignette of 3/4: "Mrs. Tanner and I talked about how she had used Jane as a person to 'bounce things off of'" (TV: 3/4).

This quotation arose from a discussion during stimulated recall (TT: 3/2) and related to the previous statement:

Researcher: "Where did you get this example? From seeing her [Jane] teach?"

Tanner: "Yeah, and she told this story and I just thought it was a great story and it was perfect."

Researcher: "Ah."

Tanner: "And see, I had a real advantage because she taught first period class and I would sit in my office [adjacent to the regular music room in the music wing], usually, and be working. I would go through or something or she would throw in something or she would ask my
opinion or be doing something—I would often just go out..."

Researcher: "Would she like, stick her head in your office?"

Tanner: "Well, no, but I could just see [into the room]—there was a constant banter going on, but now [this year] I don't even go in there...so there's a lot of examples I could give, and that's a perfect one right there" (TT: 3/2, p. 24).

The vignette of 3/5 recorded information about a musical board game the women had created:

"Her idea came from a game of Jane's. In fact, Mrs. Tanner revised Jane's ideas by substituting musical facts for the simple 'move back a space' e.g. 'you are summoned by Mozart for your music lesson.' This is an example of transformation. Later Jane saw what she'd [Tanner] done and changed HER board games for Baroque and Classical to contain such facts."

The vignette of 3/9 provides evidence of the friendship of the women:

"I saw stations in action in the room across the hall. Jane was in there today helping John [a young teacher] learn how to do stations. Later Mrs. Tanner stopped class and went into the hall to talk to Jane before she [Jane] left the building."

Jane actually entered the room to meet the researcher and to speak to him a few days later and in the presence of Mrs. Tanner, revealed similar facets of thinking:

"Jane stepped into the room to meet me as class began. She talked about 'teaching to discipline' vs. teaching to any higher levels. The onus is on the teacher she feels, and not
on society and/or the student. She and Mrs. Tanner are both concerned about the concept of 'perfection' and gave examples in the [school]work of their own children that illustrated that perfection is [too much] the key versus [rewarding the children for showing] some improvement" (TV: 3/12).

Mrs. Tanner's Model Mentor Sources

Mrs. Tanner's "model" category under mentors is a special category that includes persons she considers to be models in some way or another. In addition to Jane, explained above, there are two other women, Ann and Joellen, model teacher/clinicians for a large, influential music text publisher. Their names were on Mrs. Tanner's final concept map (3/28) and she confirmed that they were models of teachers who use kinesthetics [movement] in teaching general music (TI: 3/30).

Three other teachers appeared in this category. The first two emerged on the concept maps (2/20; 3/28), the latter in a member check interview (3/30). The first person was Sandy, regarded by Mrs. Tanner as a model middle school orchestra director (3/28). Mrs. Tanner helps Sandy with the Otherend Middle School Orchestra in the afternoons. The second was Maryann, a friend made at a workshop some years ago. She is regarded by Mrs. Tanner as "a model interested teacher. Somebody that wanted to take those ideas and try 'em and experiment" (TI: 3/30). The final teacher was Mark. In terms of modeling, Mrs. Tanner views him as "a model of how not to teach" (TI: 3/30), yet saw him as an
important source of content knowledge for her in terms of his shared knowledge about pieces of music.

She also wanted her family placed on the map (TI: 3/30) as an example of a "supportive, yet not involved" (TC: 3/28) family. As previously cited, they provided her with a good violin, paid for her lessons, and came to her major concerts although they had no background in classical forms of music.

Her final model source was Ralph, her applied violin teacher from eighth grade through undergraduate college. Twice in the course of the study, she confirmed that his contribution to her was in terms of musicianship:

"No, Ralph wasn't 'love of music'...no, no, with him it was just musicianship. 'What is something that is musical?' He is such a fine musician. If I learned anything else--nothing else--from him, that would be the foremost thing' (TT: 3/11, p. 2).

"He taught me how to be a better musician" (TI: 3/30).

Maureen was a sixth grade classroom teacher in the elementary school which Mrs. Tanner attended as a child. She also taught music to Mrs. Tanner's class as well as several other classes. Mrs. Tanner explained the initial interview:

Researcher: "Was there anything or anyone in your elementary school experiences that may have influenced you to become a music teacher?"

Tanner: "Well, Maureen--she was a classroom teacher but she taught music and that was when I was in sixth
grade. I thought that was what I was going to be--a classroom teacher that taught music" (TI: 2/6, p. 3).

Mrs. Tanner went on to detail Maureen's involvement with the City-wide Songfest. Maureen also appeared on the second concept map (3/28), and was confirmed as a model of what Mrs. Tanner thought she wanted to be as a youngster:

Tanner: "She was just my first experience with teaching music"

Researcher: "A model?"

Tanner: "Yeah."

Mrs. Tanner's Discrete Mentor Sources

Mrs. Tanner's discrete mentor sources are explained below in terms of the contributions they made to either content or pedagogy, as such a source is usually limited to one or the other. The first of these persons, in chronological order was Gilda, the general music "methods" teacher who taught Mrs. Tanner as an undergraduate.

Gilda's name was frequently in evidence from the initial interview onward as a source of pedagogical knowledge. Gilda is a woman well known to the researcher as she was also his teacher several years later at the same small university. Mrs. Tanner's inclusion of Gilda first occurred immediately after Maureen:
Tanner: "It wasn't until I was a junior in college—that's when I met Gilda—the whole world opened to me. She is the number one ultimate influence on what I do. Before that, I may have just gone into orchestra and never into general music."

Researcher: "So she was the influence towards general music?"

Tanner: "Yes, she would have been my first mentor" (TT: 2/6, p. 3).

She continued explaining the influence of Gilda later in the interview:

Researcher: "When did you decide that you wanted to be a general music teacher or what were the circumstances?"

Tanner: "After Gilda's class, that was when I knew—always in the back of my mind, that's what I wanted to do—I didn't know how. I didn't know what that [teaching general music] was, and she showed me how."

Researcher: "How did you view the realization that you wanted to be a music teacher?"

Tanner: "I didn't know that there was such a thing as a music specialist. Once I knew that was a possibility, I could not believe that I would be allowed to do this" (TT: 2/6, p. 5).

Gilda's name also appeared on both of Mrs. Tanner's concept maps.

Mrs. Tanner's work under Gilda led to the influence of Silver-Burdett Publishing, which publishes a series text for general music, K-8. At the time of Mrs. Tanner's association with Gilda, Gilda was
an author/clinician for Silver-Burdett and used their publications widely in her teaching at the college level. She was also instrumental in guiding Mrs. Tanner to some of the nationally known author/clinicians for this company, who, in turn, became mentors.

There were three of these nationally know clinicians who have been a continuing influence on Mrs. Tanner's pedagogy over the years. She attended workshops given by Silver-Burdett at the national level where she worked with and for these persons as a beginning teacher. In order of importance from least to most influential, they are Louie, Molly, and Max.

Louie is mentioned only in passing in the initial interview and appears in the second concept map. Molly appears on both maps, and is referred to several times throughout the study. Mrs. Tanner viewed her as "laid back" twice (TT: 2/6. p. 12; TI: 3/30). Mrs. Tanner believed her attribution probably had to do with Molly's exhibition of intensity in terms of her knowledge of theories compared to the more action-oriented intensity exhibited by Max:

Tanner: "Yeah, there's another person I should have mentioned that was 'total inspiration'--Molly."

Researcher: "Oh--OK."

Tanner: "She is the supreme--I would put her right up there with Max and even higher. She's laid back. She's just as intelligent. Max is very personable, but she is very approachable" (TT: 2/6, p. 12).
Mrs. Tanner characterized Molly as a "labeler" of concepts and as "analytical." Her contrasting of Molly's style with Max's was interpreted by the researcher and confirmed by Mrs. Tanner as making Molly more an inspirational mentor than a pedagogically discrete mentor like Max. "She knew 'why' things worked and used that; Max is more of a charismatic type" (TI: 5/2).

Max, an author/clinician known to the researcher, has been and continues to be a mentor to Mrs. Tanner. He is still in demand at the present as a clinician in general music. His influence upon Tanner's practice is seen in a variety of ways explained below.

Max appears on both concept maps. His name arose almost immediately as Mrs. Tanner answered the researcher's initial interview questions.

Tanner: "It was through her [Gilda] that I met Max. I met all these people that were in summer workshops, etc. She would have been my first mentor. But when I graduated from [name of undergraduate college], I taught in [name of town where she finished year] for the year in that position because I graduated early. Then Max took me under his wing, and I went to [eastern state]. He took me to interviews all over the place and I got my first real teaching job in [suburb of major eastern city] through him" (TT: 2/6, p. 3).

Mrs. Tanner's references to Max continued throughout the study when she spoke of pedagogical influences and teaching procedures:
Tanner: "Because if they didn't hear that [musical concept],
they can listen for it again. And then they might hear
it."

Researcher: "That's the 'Max Theory?"

Tanner: "Right." (TT: 2/6, p. 11).

Another reference:

Researcher: "That's like--I always give 'one free listen.'"

Tanner: "Oh yeah...that's a 'Max'--'once for free'" (TT: 2/6, p. 30).

A vignette contained a reference to Max's teaching:

"She said she always thinks back to Max saying, 'Don't keep
teaching your first year for a whole career'" (TV: 2/24).

This in turn was supported by:

"I will never forget him [Max]. I was a first year teacher at
the time; he said 'never teach your first year for more than
one year. Learn from your mistakes. If you really blow it,
then fix it. And if you can't fix it, go to another school
district and start over again'" (TI: 2/6, pp. 24-26).

Certain pedagogical procedures (Silver-Burdett lessons) used
by Mrs. Tanner are discussed later and are intertwined with the
work of Max as an Silver-Burdett author/clinician. She often
referred to "old Silver-Burdett," meaning lessons from older Silver-
Burdett texts which Max helped author and influence.

Dee was confirmed by Mrs. Tanner as a discrete influence on
her pedagogical knowledge, and appeared on both concept maps.
Dee was a teacher Mrs. Tanner met while teaching in the East and in whose home she spent holidays and school breaks. Dee had worked with the theories and research of Edwin Gordon, and passed some of them on to Mrs. Tanner, as explained at the end of the stimulated recall session on 3/2:

Tanner: "And she was working on her masters at the time with Ed Gordon. And that's something—that's another whole thing. I do think I am kind of a behaviorist—I look for—there are certain things that I want to get from the kids. Not as much as Ed Gordon—"

Researcher: "Well, then, you look at Ed Gordon as a behaviorist."

Tanner: "Yeah."

She explained further:

Researcher: "...he's a sound before symbol guy."

Tanner: "Right, and he's looking for a certain behavior—I don't even know if that's the right word."

Researcher: "So you are influenced by some of his thoughts through her?"

Tanner: "She shared many of the things that she was learning from him" (TT: 3/2, pp. 31-32).

Mrs. Tanner explained some specifics gleaned from Dee's work with Gordon:

"I used much of this [Gordon's tometics] in my early teaching as part of my lesson plan organization. It was something I touched on every day and it showed me the payoffs of constant reinforcement of an important concept."
Students did learn better and were able to transform it [to music reading]." (TI: 5/2).

Jan and Mike's names reemerged as discrete influences. Mrs. Tanner confirmed that though she looked upon Mike as a negative model (above), she saw him as a contributor to her content knowledge about music by his suggesting music she could listen to and use with her students. She was impressed by his knowledge of music in general (TI: 3/30). Jan, a model teacher, also contributed discretely to Mrs. Tanner's pedagogical approaches when teaching middle school chorus. "She told me specific things to do" (TI: 3/30). "Also, her personal dedication to teaching is exemplary" (TI: 5/2).

**Mrs. Tanner's Simple Sources**

The second major category in the classification of Mrs. Tanner's pedagogical-content knowledge is simple sources. The most salient characteristic of simple sources is that they contribute in an uncomplicated manner to her practice, usually in terms of content knowledge held in memory and transmitted to students after pedagogical transformation. Most of the sources were drawn from Mrs. Tanner's concept maps of "Preparation for Teaching General Music."

Her education from her youth through graduate school were listed as factors. Examples of such knowledge as it applied to the
observed Classical Period unit would be illustrations and facts from music history classes, and knowledge of pieces of music.

On her maps, "travel with classes in mind," "attendance at many concerts" (TC: 2/20), "extensive travel" and "extensive concert-going" (TC: 3/28) support the listing of these on the figure above. These two facets of her simple sources, combined with "listening to all kinds of music" (TC: 2/20) are supported by specific points of data.

"Yeah, and another big influence on me is listening to [local public radio station]. See, that is the kind of thing that will inspire me, if you bring in this piece of music and say--"(TI: 2/6, p. 24).

Response to the researcher supported a specific point:

Researcher: "That's very interesting, because you are driven by what you end up hearing."

Tanner: "Well, I listen for a lot of different reasons, and they are so diverse" (TI: 2/6, p. 25).

In vignettes, two examples were found:

"Mrs. Tanner thinks that she learned her broad general knowledge in school, mentioned the influence of Karl Haas [music appreciation series on public radio stations], and her own study, especially her travel to Europe--very influential--example of monastery raided by Napoleon" (TV: 2/24).

"As the class began, Mrs. Tanner presented an example of what she called on her concept map 'travel with classes in mind.' She showed the students a book of a scene from the Palace of Versailles" (TV: 3/11).
Examples of Mrs. Tanner's love of hearing live music were noted in two examples.

"Mrs. Tanner also related the sad story of how she missed hearing Henryk Szeryng [a violinist] when he concertized in her town during her high school days. She also related a wonderful experience in Central Park [N. Y. C.] in hearing Pictures [at an Exhibition] conducted by Zubin Mehta and a memorable concert at Tanglewood [Lenox, MA] with Ozawa and Bernstein" (TV: 3/4).

Mrs. Tanner also influenced the researcher to buy one of two compact discs that she showed him one morning. "Today we talked about two discs that Mrs. Tanner found helpful--The McFerrin and Ma disc and the Chess Game disc" (TV: 3/9).

Workshops were justified as simple sources because they were cited by Mrs. Tanner in concepts maps as "attendance at a multitude of conferences and workshops" (TC: 2/20) and "teaching workshops and travel=[equals] excellent sources of ideas, materials, and people who share interests" (TC: 3/28). Workshops, conferences, clinics and the like fall into the "simple sources" category, "workshops" in Figure 6. They are a special type of a simple source, though, because of the forms which pedagogical and content knowledge take in such venues.

The idea that workshops are simple sources is because knowledge taken from them is already partially transformed. Pedagogical sequences for presenting content material and pertinent content examples are already organized in the form of
"lesson plans," as presented by a speaker or clinician. These plans are packaged and ready to be applied in some cases. The simplicity is paradoxical, though, as there is a potential for transmission of content within a method for presenting it.

Mrs. Tanner's motivation, a personal characteristic discussed later, is another impetus for attending workshops and clinics. The researcher recorded an example in a vignette when the subject was stagnation of practice:

"Had she felt stagnated, she thinks that she'd have headed to conferences, etc. She said 'when you [a teacher] feel that [stagnation], then you head for workshops and conferences'" (TV: 2/24).

Mrs. Tanner's Influential Sources

The characteristics of the influential sources of Mrs. Tanner's pedagogical-content knowledge have the properties and dimensions of being (1) evidenced in both content and pedagogical knowledge, (2) an enduring impact upon her practice as a teacher over time, (3) arrayed in forms that require little or no transformation for presentation to students, and (4) extant in theoretical, philosophical, and conceptual forms rather than human, i.e., a mentor.

Influential sources contribute both pedagogy and content in powerful ways in Mrs. Tanner's practice, and are often part and parcel of her whole social perspective in terms of theory and
concept. Her influential sources, in fact, are often synonymous with Shulman's "New Comprehensions;" that is, they are a scaffold of ideas and knowledge arrived at by transforming, combining, teaching, performing, hearing, and using the simpler sources of pedagogical-content knowledge. As such, some of these sources themselves have subsources.

Concurrent sources evidenced in Mrs. Tanner's practice include what she terms "gems." Gems are complete lesson plans or portions of lesson plans--"tricks of the trade"--that are collected as one gains experience as a teacher. The subsources of these gems are mentors of various types, simple sources, and parts of other influential sources. Workshop or conference presentations and their related handouts are frequent sources of these gems for Mrs. Tanner. As well, her relationships with mentors, especially Max, and her use of "old Silver-Burdett" authored in part by Max, have provided her with a trove of gems. The term is first in evidence in a direct quotation and the researcher's explanation:

Researcher: "Did anyone ever tell you what general music was?"

Tanner: "Nobody ever told me what to do."

"Mrs. Tanner went on to say that she was flabbergasted on her first day with kids. She had had a hodge-podge of things--'gems'--that she could do, but no concept of sequencing or getting the gems in order for presentation to kids in a class. She said she had learned by 'experience and experimentation' in 'finding out what worked'" (TV: 2/20).
Gems were a good thing to Mrs. Tanner, but for her they seemed in evidence only when the class context demanded it. Twice, she made reference to a problem class:

Researcher: "You just 'watched' them for a period?"

Tanner: "Right, and the lessons [were ones] I had done before but when you're desperate, you'll pull out the one that always--"

Researcher: "You start using the little gems you were talking about?"

Tanner: "Yeah, right. They didn't work; nothing would work" (TI: 3/2).

"She made reference to a tough class she'd had upon her return from maternity leave, citing that nothing she had done worked. She returned to her 'gems' of trying everything that she could think of" (TV: 3/4).

Mrs. Tanner's second concurrent influential source is one closely tied to her central theme, the social perspective. It is the influence of the Quest program of Quest International. This program, generally put, is a values clarification and self-esteem building course taken by students at all age levels in many school districts. Mrs. Tanner's practice as a teacher has been strengthened by the confirmation that Quest has brought to it, especially in terms of "labeling" things she already did. She was quick to add that she does not agree with all of the implied
philosophy of the program. This influential source was in evidence throughout the following data:

Tanner: "--Various presenters we've had at inservices that talk about different learning styles and put labels on what you already do. Quest is a big one for that" (TI: 2/6, p. 6).

A special influence of Quest in Mrs. Tanner's practice is seen in the "energizers," first spoken of as "just little musical energizers that will get them thinking" (TI: 2/6, p. 23). The term, "energizers" is a practice advocated in Quest literature (Skills for Adolescence, 1988) for socialization and "ice-breaking."

"Good teachers do all those things they are teaching over there [in Quest] anyway. These energizers--the idea of those energizers--I will say that since I'd taken Quest training--and I had so much fun doing it--that I tried to incorporate a lot more of that kind of--those short activities" (TI: 3/11, p. 3).

She continued, referring to her mentor, Jane:

"The thing is, I was doing things like that [energizers]. She was doing things like that" (p. 4).

Throughout the study, Mrs. Tanner, when questioned about a short activity presented, would often refer to such a lesson as "just another energizer."

Pieces of music in themselves as a source of content or a starting place for thinking about pedagogy has been touched upon
already in the simple source category of "music listening." Music itself formed a subheading in both of Mrs. Tanner's concept maps, "Considerations When Planning a General Music Class." She often remarked that music was a starting place for her thinking about what to use as an example, in that the music itself gave her an idea.

Researcher: "What activity, thought, exercise, or framework do you use to start your thinking about what you'll teach?"

Tanner: "Usually they will get the different music I like."

Researcher: "So that's what gets you ticking?"

Tanner: "Yeah, that will inspire me to a--just many times it will be that piece of music I've heard--or at a workshop" (TI: 2/6, p. 20).

The last group of three concurrent influential sources--teaching experience, knowledge of student characteristics, and contextual conditions--are more complex in their composition than the first three concurrent sources. Their complexity resides in the close relationship they share with Mrs. Tanner's social perspective. They not only contribute to and influence the perspective, but they are, in turn influenced by it. These three sources of knowledge are what Elbaz (1981) calls "knowledge mediated by practice" (46).

Mrs. Tanner's teaching experience is probably one of her most influential sources of content and pedagogical knowledge. Teaching experience has subsources of both content and pedagogy.
As well, it contributes to content and pedagogy, and is a prominent influence upon what content is chosen and how Mrs. Tanner transforms it for presentation.

Mrs. Tanner placed teaching experience on both of her concept maps, first as "classroom experience" (TC: 2/20) and later as "teaching experience in several districts (this was invaluable--you don't keep repeating mistakes--fresh starts)" and "teaching experience in several levels--elementary, Jr. high/middle, and high school. Also different subjects--choir, orchestra, and general" (TC: 3/28).

Elaborations in support of these entries on the maps is seen in the two transcripts. Experience was revealed as the researcher questioned Mrs. Tanner about how she views herself as a teacher:

Researcher: "So your answer of 'yes' is based somewhat on the fact the you possess a certain content knowledge?"

Tanner: "yes..."

Researcher: "...or..."

Tanner: "Not only that, but the experience" (TT: 2/6, p. 8).

Her concept map reference to "repeating mistakes" was supported by the vignette (2/20). "She said she learned by 'experience and experimentation' in 'finding out what worked' and by what she called "constant upgrading through own participation and experimentation" (TC: 2/20). Mrs. Tanner, in stimulated recall (TI: 3/2) confirmed this experiential process as the researcher
questioned her about how she guided the students to discover the
difference between a symphony and a string quartet:

Researcher: "'Constant upgrading of own participation and
experimentation'...is that what you're doing here?"

Tanner: "Yeah, that's what I was doing. And I was not very
successful. Sometimes it works and sometimes it
doesn't, and that just didn't" (p. 18).

Experience to Mrs. Tanner also meant knowing her students:

Researcher: "So, in other words, you..."

Tanner: "I think to be a successful teacher, you really have
to know the kids."

Researcher: "But if you were going into a totally new school,
you have certain bits of knowledge about what running
a classroom is and those have come from experience
maybe?"

Tanner: "Yeah, oh, I think so. 'Cause, see, the first year
I was at Smallcity, well--I never had any teaching
control ever. Because, first of all, I didn't know the
kids" (TT: 3/2, pp. 7-8).

By way of contrast, Mrs. Tanner mentioned a teacher who
took over her classes on a day when the periods were reversed
and her normal morning classes were in the afternoon when she
was at Otherend Middle School:

"They ate _____ alive. She did not know them. They did
not trust her; they pushed her to the limit" (TI: 3/11, p. 1).

Mrs. Tanner's views about rapport and trust building are
central to statements about student characteristics in the next
paragraphs. Experience is also exemplified when Mrs. Tanner automatically ignores behaviors:

Researcher: [having called Mrs. Tanner's attention to some funny tune he thought he had heard a student humming on tape during stimulated recall when her back was turned] "...and I don't know if it was this tape or one of the others."

Tanner: "I am sure there are a lot of things that go on that, you know...a lot of times I will ignore, too. I have to decide if I want to make an issue out of something or not" (TI: 3/2, pp.10-11).

Later in the session, another example presented itself:

Researcher: "So you just let it go?"
Tanner: "Yeah, I let it go. Because, again, it wasn't worth it" (TI: 3/2, p. 29).

Closely tied to Mrs. Tanner's social perspective--indeed contributing to it in large measure--are the many references to her perceptions of characteristics of middle school students. These characteristics, as a part of Mrs. Tanner's central theme, affect her transformation of content and use (or non-use) of pedagogical approaches.

Mrs. Tanner's first reference to a characteristic of middle school students had to do with her perception of their musical preferences:

"And I always ask them 'what did you hear in this? What happened here?' Because I know as soon as I ask them if
they like it, they are going to say 'no' whether or not they did" (TI: 2/6, p. 10).

Characteristics of students' other knowledge was cited as an influence upon the teaching of the whole eighth grade sequence in general music that Mrs. Tanner and Jane settled upon:

Researcher: "So you give them a reason 'why' for the Baroque? Is this a content thing or a social thing?"

Tanner: "I say 'when we were developing the curriculum for your class, we went to your history teacher to see where you were starting. And it's only logical to start in music history in the same place so you can relate to what we are talking about.' And they say 'OK'' (TI: 2/6, p. 28b).

Later in the interview this knowledge of cross-disciplinary integration was again mentioned:

Tanner: "...now when I first started doing this I started with the Medieval Period and then we went on to the Renaissance Period, then we went on to the Baroque Period and the Classical Period. And just briefly, but then I started working with Jane. We decided that we would just start where the kids are--ya' know--the Baroque Period, and then the Classical Period, and the Romantic Period."

Researcher: "Because this is where they started in American History?"

Tanner: "Right, right" (TI: 2/6, p. 35).
Perceptions of students' attention spans also were evidenced when Mrs. Tanner said, "they're adolescents; you have to come from where their brains are," and:

"...everyday I try to do something totally different. This class is 'if you don't like what we are doing today, you might like what we are doing tomorrow'--and it's not going to be the same. And I try to do many different approaches to try to get kids--so I guess the answer depends on the day" (TI: 2/6, pp. 23, 40).

Many of the characteristics of students at the middle school ages, as Mrs. Tanner perceives them, are social characteristics. These provide the underpinnings of her central theme, the social perspective. The following pages cite examples of Mrs. Tanner's various facets of knowledge about student characteristics:

Researcher: "...it's up there on the board!"

Tanner: "Yeah, but unless you focus them on the board, then they don't notice it, because there's just so many things they learn--they could be looking at the sheet; they could be talking to their friend about who's going out with who; or they could be, you know--whatever" (TI: 3/2, p. 27).

Another assertion followed the researcher's questioning about Mrs. Tanner's apparent joining of social history concepts of the Classical Period with analogies to today:
Researcher: "How do you join those two social perspectives? I think you do."

Tanner: "Because that where they are. That's all they truly understand is being social! That's where kids' minds are today. They are not on academic things and so unless you can fit it in with where their brains are, which, you know, is wherever their hormones are at the moment, you're not going to get anywhere" (TI: 3/11, p. 1).

Later in the same interview:

"...just to get them [students] interacting with each other, which is what they want to do--and if you give them just a few minutes to interact, they are much more likely to go along with you if it's something pertinent to what you're doing" (p. 4).

Characteristics exhibited in interaction with the teacher were touched upon when Mrs. Tanner discussed informally with the students about how their day was going so far:

"She then asked about how their day was going. The discussion ended when students began to say everything was 'boring'" (TV: 3/10).

This interaction came up three days later, revealing a perceived characteristic of student interaction:

"She did mention that it was the boys in the corner who were heading toward '...and this class is boring, too.' She mentioned that this type of interaction was typical of the middle school students: 'When they interact at all, they're saying, "Hey, I like you, and I'm not bored"--sometimes" (TV: 3/13)."
Mrs. Tanner also gave the researcher an idea of a student characteristic, "vegetation," for which she is always watching:

"She said she knows when to start questioning [sequences]: 'when I see this general vegetative state setting in, I better start asking questions'" (TV: 3/2).

In stimulated recall, Mrs. Tanner gives the example of a specific student:

"And she's one that you have to control--she will sit and vegetate and do nothing. And I hadn't called on her for a while" (TI: 3/2, p. 22).

Mrs. Tanner explained her use of "vegetable" and its variations in terms of the popular phrase "couch potato." This was in response to the researcher's concern that she was referring to students' mental abilities when she said "It is almost impossible to fail this class unless you are a total vegetable" (TI: 3/11, p. 5). The analogy to "couch potato" does, rightfully, the researcher believes, have connotations of being temporarily engaged mentally, though in something requiring little thought.

This state of mind is a concern to Mrs. Tanner as evidenced by her assertion recorded as part of a vignette:

"I haven't given up. It's getting harder to get high standards. The kids are in a state of shock when they come in here, 'cause they think that they can come in here and vegetate like they do in some [other] classes.'--Example of a girl who expected an 'A' automatically. 'We have lowered our standards so much that kids think by coming in here and..."
breathing and *not* causing trouble, they'll get an A'" (TV: 3/13).

Yet another aspect of the characteristics that students exhibit was evident in Mrs. Tanner's several references to their need for meaningful, positive experiences with a teacher in whom they can trust.

Researcher: "Tell me about your classroom management or discipline techniques. Are there any particular ones—or I think you use some self-esteem building techniques?"

Tanner: "Ah...a lot of positive reinforcement. I've done this. I have had some training in assertive discipline, but to me the thing that works is 'You catch them being good.' That same energy that you use on the kids that are driving you nuts and instead focus on the kids that are doing what you want them to do, and they'll all end up doing what you want them to do--if they're reasonable people" (TI: 2/6, p. 33).

This vein of thought continued as the researcher asked about other techniques, like assertive discipline:

Researcher: "So that's kind of 'semi-assertive discipline'?"

Tanner: "Yeah, if you know—if you keep them busy enough on a task, you aren't going to have all the discipline problems."

Researcher: "It depends on what you keep them busy doing."

Tanner: "Right. You have to keep them focused on something that means something to them. And, again, you're not going to—you know, I tell them up front—if
you come to the classroom and you are told 'I want you to sit down and if you want to talk about who's going to the party Friday night and who broke up with who--fine. But when I am ready to start, you're ready to start--Good Morning!--OK? And I don't want any side conversations. And most kids will go along. But a lot of it has to do with [the fact that] they know me and they trust me. Just like, they know I'm going to try to be fair. And that's the main thing--be fair."

Researcher: "What is that ['be fair']? That's a whole other dissertation."

Tanner: "Treat all of them the same way."

An example of this in a sixth grade general music class was given at this point. The researcher feels that student social characteristics are evidenced in these needs. In fact, the manifestations of Mrs. Tanner's fairness, and subsequent student trust, are evidence of the complexity of interaction of characteristics and their influence upon Mrs. Tanner's actions.

Closely allied with knowledge of student characteristics and needs is Mrs. Tanner's knowledge of the context in which she teaches. Knowledge of teaching context may be seen as having knowledge of student characteristics as a "subknowledge" in Mrs. Tanner's case. Mrs. Tanner makes direct and indirect references to context throughout the study that show her knowledge of her context, and relatedly, how context shifts will bring about shifts in teaching approach.

In addition to the section of Chapter III labeled "Mrs. Tanner in Context," the following pages draw upon Mrs. Tanner's
perception of her context and how it may affect her teaching practice. "Knowledge of contextual conditions" in her source outline, as mentioned above, is a source contributing to, as well as mediated by, her practice, and contains much of "knowledge of student characteristics" as well as facets of other sources.

In addition to her knowledge of student characteristics, Mrs. Tanner has a knowledge of the context in which she teaches. One aspect of this is that she fits in with middle school students:

Researcher: "Do you view yourself right now as a middle school general music specialist?"

Tanner: "Yes."

Researcher: "Why?"

Tanner: "Because that is where I have spent most of my creative energy in developing my plans. Now I have spent a lot of time doing elementary, too, but I feel most comfortable with this age level" (TI: 2/6, p. 7).

Frustrating her context are day-to-day and longer term schedule considerations and conflicts. In fact, one of the major influences on the unit observed in terms of amount of content chosen for presentation--what Mrs. Tanner hoped to "cover"--was the schedule context under which she was working.

Mrs. Tanner's ultimate goal for her classes is to get to "stations." At these learning centers arrayed around the room, the students perform such handout-guided activities as elementary guitar and keyboard, musical puzzles, music listening, and board
games—all with a modicum of teacher help. The following excerpts are explanatory:

"She also mentioned again that scheduling is a problem due to the fact that her current rotation of eighth graders is ending a week earlier than she'd anticipated. She mentioned that the administration knew this situation would arise, but had made no decisions about it until now. She is torn between whether to end the Classical unit early and move to stations. I try to tell her to disregard my presence as a factor. She said she already has, but just can't decide what to do—that there are pros and cons on both sides" (TV: 3/2).

The next day: "Mrs. Tanner showed me her 'station sheet' [a checklist]. 'If I decide to do it'" (TV: 3/3).

That same day, after the stimulated recall session, she again expressed concern about the sequence of the unit to the researcher. By 3/5, she had decided. "Mrs. Tanner told me that she does intend to run the Classical unit [and not stations] next week" (TV: 3/5). However, on 3/9, a student, remembering stations from seventh grade asked about it. "She went into some depth to explain to a student why there would not be stations" (TV: 3/9).

Other short-term influences on schedule included the day that the periods were reversed. Mrs. Tanner covered morning classes in band at Smallcity, while another teacher took her general music classes in the afternoon. The researcher did not observe that day:
"She was having a schedule flip-flop on 3/6. I am not going to observe as Tanner will run a band rehearsal vs. her music classes. While she is at Otherend, another teacher will do her classes" (TV: 3/5).

On this day, the students played the board games that Mrs. Tanner and Jane had constructed. Mrs. Tanner's practice was also influenced when periods were shortened or students excused for special activities. This is largely on account of her status as a traveling teacher. Mrs. Tanner confirmed the impact of schedule on her planning time the day she found a list in her mailbox that excused students for a special intramural event. A discussion ensued:

"There was also discussion of her teaching schedule vs. that of other music teachers in Smallcity. Playing devil's advocate, I said that I didn't think it (the schedule) affected pedagogical-content knowledge. She disagreed, saying it had impact on her planning time, i.e. number of preparations (the pedagogical). She also said she was 'the royal pain in the you-know-what' in regard to scheduling conflicts" (TV: 2/25).

Longer term scheduling, hinted at in the "number of preparations" quoted above was in evidence later in the study when Mrs. Tanner related preliminary discussion of next year's schedule:

"We began with a discussion about next year's schedule. The orchestra teachers would like another 'half' orchestra teacher next year. She talked about the lack of a consistent feeder program at Smallcity as opposed to Otherend. This had to do
with whether a teacher taught his or her own 'feeders'" (TV: 3/11).

Mrs. Tanner's concern was whether she would be viewed as that "half" person. She does not especially like directing performing groups, but most enjoys teaching general music.

The course of study was brought up twice in terms of its influence upon Mrs. Tanner's practice. The first evidence was in the initial interview:

Researcher: "Is it ever an 'objective-in-the-course-of-study' decision about what you'll teach?"

Tanner: "Such and such a piece of music?"

Researcher: "No, that you will teach an overview of the history of the Baroque."

Tanner: "No."

Researcher: "It might be a workshop thing, though?"

Tanner: "Our curricular things are just so general that we can teach--I can teach--all the things that make sense to me" (TI: 2/6, p. 20).

The other reference occurred later in the study:

"She also said of the course of study that it was broad and that she had told [a university professor/clinician] that when he was up. That is both a strength and weakness, she thought: a strength for competent teachers who know how to use it as a framework, and a weakness because the incompetent can use it to get away with a lot. This especially applies to performance group teachers who have to teach general music" (TV: 2/25).
The foregoing pages have provided an outline, explanations, and supporting evidence of the sources of Mrs. Tanner's pedagogical-content knowledge. Reference to the guiding questions with which the research began (given in Chapters I and III) will reveal that for Mrs. Tanner, the questions have largely been answered by the foregoing pages and the sections on context and access for her in Chapter III. There remains, however, the need to explain how she applies these sources to her teaching so that they may be compared with those of Mr. Ballenger in Chapter V.

The next section, "The Formation of Mrs. Tanner's Pedagogical-Content Knowledge," explains Mrs. Tanner's personal qualities and how they affect her use of the sources. The case study concludes with a further examination of her central theme and how it is influenced by the sources, personal qualities, and how it, in turn, interacts with such sources and qualities.

The Formation of Mrs. Tanner's Pedagogical-Content Knowledge

The overriding personal quality of Mrs. Tanner in evidence in this study was her motivation. This was observed by the researcher in his work in the classroom, and stated by her in the course of the study several times. A statement about hard work included a paradoxical assertion of her motivation relating to a love of music:
Researcher: "Do you look on teaching as work?"

Tanner: "Yes, it's hard work, but I am a person that likes to work. If I didn't, I wouldn't do it. I love music."

Researcher: "Do you say 'I am going to work' like my father might say when he worked?"

Tanner: "I say 'I am going to school.' Now my husband would say 'I am going to work.' But to me, it's--I think people who go into music go into music because they have to--that's part of your right brain or left brain. I think that it is an emotional need some people have" (TI: 2/6, p. 41).

Curiosity was another facet of her motivation:

"We talked about her 'driving force,' She said, 'I am a curious person, that's why'" (TV: 3/2).

Mrs. Tanner's motivation and its attendant love of music and her curiosity lead her to rethink lessons. This was in evidence as the researcher read to her some of his notes about his emerging interpretations:

Researcher: "This self motivation is often the initial event that sets the wheels turning in selection, under 'transformation' in Shulman. For her, this includes hearing and performing music, attending concerts, and 'travel with classes in mind'" (TFN: 3/1).

Tanner: "--and sometimes, it will take the form of...just like today [that morning] I was telling you I was going to do that little experiment [with a teaching approach]. It really worked great--it was an inspiration" (TI: 3/11, p. 2).
Near the end of the observational period, Mrs. Tanner again referred to her motivation, approaching it from the standpoint of standards:

"I still maintain...I want higher standards. It's not that other people (teachers) don't want standards...they don't want to work for them. We're teaching to the lowest common denominator. That's what Jane was saying. I haven't given up. It's getting harder to get high standards" (TV: 3/13).

Mrs. Tanner's motivation affects the number of sources from which she draws her knowledge of both content and pedagogy. Motivation also contributes to her sources through the addition of new ones, and the enrichment of the old. The quality, motivation, also contributes to and is affected by her central theme, the social perspective.

The characteristics of the central theme, the social perspective in Mrs. Tanner's case, are listed below. This list was created by examining the various types of sources and by scrutinizing evidence of personal qualities. The list was confirmed by Mrs. Tanner as accurate.

Through evidence of such sources and qualities, the researcher was able to construct categories of sources and narrow the personal qualities to one overarching trait. Next, the researcher traced observed actions of Mrs. Tanner back through her social perspective and quality of motivation to some of her sources.
The characteristics of Mrs. Tanner's social perspective are examples of her pedagogical-content knowledge. That is, they are a blend of both discrete and concurrent pedagogical and content sources, researcher and participant perspectives, and draw upon all three of her major source classifications:

1. Mrs. Tanner includes in her planning and presentation in general music classes certain social approaches more pertinent to life outside of school than to the actual content itself. She believes there is need for school to teach the participation structures (Erickson & Shultz, 1977, in Woolfolk, 1990) of a larger society in addition to those of a music class.

2. Mrs. Tanner has a great specific knowledge of the content of the subject as well as a general content knowledge in other disciplines.

3. Mrs. Tanner has a knowledge of student social, academic, and mental characteristics, yet is always seeking to stretch such characteristics through high standards.

4. Mrs. Tanner creates an atmosphere of mutual trust between herself and the students that allows for social interaction as well as transmission of content.

5. Mrs. Tanner uses a high teacher intensity in the classroom through organization, pace and variety of activities.

As previously stated, the social perspective as Mrs. Tanner’s central theme was presented to Mrs. Tanner in the form of an analogy to "an overlay" or "a filter." The use of these analogies by the researcher was meant to characterize the central theme. Mrs.
Tanner's social perspective does filter the myriad sources of her knowledge. By the same token, the perspective does act as an overlay which covers--affects--the entire spectrum of her pedagogical reasoning and action [see Figures 1 and 5].

The final portion of Mrs. Tanner's case is an explanation of the manifestation of her pedagogical-content knowledge through the evidence of her repeated daily actions. Mediated by her personal motivation and central theme, her actions are grouped in Figure 5 as "intensity" and "organization." Intensity was in evidence in her questioning sequences, analogies, and sarcasm/humor; organization was apparent in her materials used, cooperative learning exercises, and individual learning ("stations"). The paragraphs below, confirmed by Mrs. Tanner, outline this evidence.

Intensity was shown in the observed class by Mrs. Tanner's use of questioning, analogies, and sarcasm/humor. Mrs. Tanner's knowledge of the middle school student's preferences, attentional characteristics, and academic level contribute to her choosing actions designed to heighten her intensity in front of a class. Likewise, her experience as a teacher and the context in which she teaches, when coupled with her personal motivation, contributed heavily to her intensity. Intensity, as outlined in Chapter I and as used here, has principally to do with the factors of timing and enthusiasm.
Mrs. Tanner's use of questioning sequences was evidence of her desire to avoid mental inertia on the part of the students, a factor she called "that vegetative look." Her experience has taught her to watch for that "look" amongst her students, and to begin questioning them when they seem off task or lethargic. The researcher compiled questions from each day's class, finding that Mrs. Tanner interjected questioning sequences at times of lethargy, during activity transitions, and for spontaneity.

In the particular class observed, Mrs. Tanner used questioning coupled with analogies, a process Mrs. Tanner exemplified on her concept maps as "something to compare to present," "research to find relevant example of today for students to relate" (TC: 2/20), or "how to relate to present to bridge into past" (TC: 2/28).

Her use of analogies evidenced her concern that the students, as social beings, understand some of the sociological factors affecting the persons in the Classical Period (ca. 1750-1825). The analogies were frequently framed as questions that guided students to make an analogy themselves. When discussing Classical form, she made an analogy to sports, following it with three other analogy/questions:

"What is the form of a good player in sports?"

"Who is a renowned sports player?"

"Do people try to imitate that?" (TV: 2/26).
When speaking of some of the youthful pranks of Haydn, she used two analogies to student school behavior to which her class could relate:

"How many people do you know that the teacher's yelling at them and they're saying 'oh, yes' and then the minute the teacher turns [his or her] back [they start the behavior again]?"

"How many times do you see a teacher say "We've got to be on our best behavior?"

She followed these two question/analogies to the present with another example when she referred to the eighth-graders' upcoming trip to the Vocational School as an example good behavior as representatives of Smallcity Middle School.

The researcher also recorded this in a vignette early in the study:

"In a forty minute period, Tanner makes four analogical comparisons with society in the Baroque or Classical Period with the lives of students in the class. She tends to ask questions which require one or more specific answers that draw upon things the students probably already know from American history" (TV: 2/20).

Mrs. Tanner's social perspective is in evidence as she brings the past to the present through analogy and questioning. The social perspective is coupled with her personal motivation and broad content knowledge of music and related disciplines. She is motivated by her curiosity and love of music, as well as by a
desire to keep the class pace brisk and preserve the attention of the students.

Sarcasm and humor are two other devices that Mrs. Tanner uses to keep the pace of the class upbeat, and to focus the attention of the students. She believes, however, that the use of such sarcasm is only for situations in which the students and the teacher have established a mutual trust.

Examples of this device include many references. One notable example was the first observation day when the students were curious about the camera. Though the students were only captured on tape as an incidental part of the study of Mrs. Tanner's practice, one of them kept asking about the presence of the videocamera. Mrs. Tanner finally quipped, "He's videotaping how often you talk in class!" To this, another student added, "And you've got a new world record!" This sarcasm and response evoked a chorus of laughter in the room that eased Mrs. Tanner into an explanation of the political context in which the Classical Period occurred, and its analogies to American history.

Another vignette showed an understanding of student characteristics in a humorous form as students were complaining of general boredom at the start of a class:

"Mrs. Tanner joked with student, Donnie, as he entered, saying, 'Is there anything that you like that isn't boring?' Donnie: 'Yeah... eating!' A discussion ensued about a former student who could always pack away a lot of food" (TV: 3/5).
Mrs. Tanner's organization, like her intensity, results from knowing the social, academic and attentional characteristics of middle school students from her years of teaching experience. Her organization is also a structure within which she exhibits her intensity.

Evidence of the social perspective is present in the types of materials that she uses in the class. The researcher obtained and studied a copy of "the red folder," essentially the text for the course. This folder was constructed through collaborative work between Mrs. Tanner and Jane. The materials are a synthesis of Mrs. Tanner's and Jane's sources of content knowledge about music, and evidence of how they believe such content should be ordered for presentation.

Likewise, handouts and worksheets for the student's own general music notebooks represent such an amalgamation of the women's knowledge and experience. The materials are clean and legible, instructions clear, and feature some eye-catching graphics. Each sheet's objective may be met within the attention span of the students. The sheets are frequently used as starting points for types of cooperative learning.

Evidence of further application of her social perspective is her organization of the class for "social learning" activities. Included among these are the energizers outlined above. They afford the class the opportunity to interact in a very short activity.
as opposed to extended individual seatwork and lecture. Here is an example of one of these activities:

"Her 'energizer' was a 'Composer Hunt.' The students had done this as they started the Baroque, too, so they knew what to do. Each student wears a tag with [the name of] a Classical composer on one side and the words 'Classical Composer' on the other. On signal, they all run around and try to simply write down the names of all possible, in this case, twelve composers' names. A student assistant helped her. She continually had to watch the students from starting early or 'cheating' on this. They did it flawlessly, though, and most of them got all the names down in the allotted time. This encourages the students to interact and usually touch each other in some way. She explained later that it was one more chance to make them write down a name, saying that she believed research which said 'writing something down aided retention'" (TV: 2/25).

Immediately after this activity, Mrs. Tanner assigned another cooperative learning experience. The students worked in pairs on a reading in the red folder and filled out a matching exercise while doing so. This activity fit sequentially with the previous one as the composer names from the Composer Hunt were in the text and were to be matched with the dates of each composer and then placed on a timeline.

The final unit to which this class would have moved had the rotation not ended early was what Mrs. Tanner constantly referred to as "stations." Stations are learning centers in which students may perform music-related tasks aided by a handout. These include: (1) guitar and keyboard playing by note, (2) a number of related musical puzzles, (3) a musical jigsaw puzzle, (4) a jazz/rock
filmstrip station, and (5) a listening station. The work is usually individual, sometimes cooperative, and frequently teacher-guided. It is evaluated by Mrs. Tanner on the handout's checklist.

This set of activities, another example of collaboration between Mrs. Tanner and Jane, is Mrs. Tanner's ultimate social goal in her organization of her middle school units. In stations, the students apply their knowledge in a spirit of cooperation and individual initiative in moving through the tasks.

In this part of Chapter IV, the researcher has explained the sources of Mrs. Tanner's pedagogical-content knowledge, her personal characteristic, her central theme, and evidence of her application of her sources of knowledge to teaching. The results of such application, student reaction, in both social and academic aspects, ends Figure 5.

This is not, however, the end of Mrs. Tanner's pedagogical-content knowledge. Like Shulman's "new comprehensions," the reactions of the students to the general music instruction are recycled by Mrs. Tanner to her numerous sources, most notably the broad source, "teaching experience." Thus, her pedagogical-content knowledge has been enriched by the initial application of that pedagogical-content knowledge in interaction with her students.

Mr. Ballenger's Case: The Positive Experience with Music

Mr. Ballenger's entire practice as an exemplary middle school general music teacher revolves around a central theme: the
positive experience with music [Figure 9]. This theme affects how he comprehends, plans, transforms, presents, evaluates, and reflects as a teacher. In turn, this overarching theme is elaborated, extended, and refined by new comprehensions. In and of itself, the positive experience with music theme is preceded by and negotiated through a personal characteristic: organizational ability. This characteristic is a personal quality affecting all aspects of his life, including teaching. It results not only from multiple sources of pedagogical and content knowledge, but also from natural and developed abilities, personal motivation, and personal preference.

Evidence of Mr. Ballenger's sources and subsequent central theme were revealed in interviews, transcripts of interviews, a concept map, and through researcher observation. These multiple sources provided triangulation for researcher interpretation. The interpretations, including the central theme, were subjected to participant confirmation through member check. Additionally, the sources were organized into a framework according to their properties and dimensions, their relationships to each other, and their contributions to both pedagogical and content considerations [Figure 9].

While portions of the positive experience with music were evidenced in a variety of ways, Mr. Ballenger explicitly verbalized the core evidence of the perspective on four occasions. The most direct statement of the theme was noted in a question the researcher asked him before class one day. [Bracketed material
Researcher: "What is the one central thing that drives your practice?"

Ballenger: "My philosophy is that a teacher must be positive. When you're positive, you're communicating worth" (BFN: 4/8).

This straightforward avowal was the result of the researcher's probes about Ballenger's earlier statements of the theme in a more complete form in the initial interview (3/17):

Researcher: "OK...do you have any particular management, or discipline techniques? We've already kind of touched on a couple things."

Ballenger: "Well, I...when I'm at my best, I find that I avoid discipline problems through positive reinforcement--'catch the ornery child being good,' responding appropriately--seeing what the ornery child has to contribute to the music...once in a while it's an amazing tap, because I'll touch them early in the 'going' and suddenly I've got a friend, and man, they want to 'hear that again.' and that's a 'biggie.' I try to be firm and follow through quickly." (BI: 3/17, p. 27).

Evidence of his positive experience with music was also shared in the stimulated recall interview:

Researcher: "It seems to me it's relatively easy for you to get kids to do what you want. Where does that ability come from?"
Ballenger: "Well I think it starts--depending on how I've dealt with them throughout their experience in here."

Researcher: "Uh-huh."

Ballenger: "And I don't always; sometimes I make mistakes."

Researcher: "OK."

Ballenger: "If the student believes I respect them--if the student believes that I'm being fair--"

Researcher: "Yeah--"

Ballenger: "--then they normally will respond. Often I'll have a kid who is known as a "bad" kid. Maybe he has a foul mouth and a horrible home situation, but may be pretty bright--and knowing this when they come in, I often go out of my way to stroke 'em."

Researcher: "Oh--"

Ballenger: "--and if I'm successful, then that often helps out" (BI: 4/7, pp. 12-13).

The researcher probed further and asked Ballenger about creating self-esteem in students. He said he "had a hard time sitting through those inservice seminars [on self-esteem] sometimes" (p. 27). When pressed by the researcher, he stated a belief about teaching related to his positive experience with music theme:

Ballenger: "It just seems to me a good teacher ought to know that [be positive]. And so why do we have to have whole units?--"

Researcher: "Where would a good teacher learn that?"

Ballenger: "We just have to know."
Researcher: "Why is it when I ask everybody--"

Ballenger: "It's just common sense to know that."

Researcher: "Yeah?"

Ballenger: "And I'm not saying that I do that all the time...I mean, I catch myself being--when I am not patient with children, ya' know. I catch myself abandoning my principles. So, to me, it just seems that it should be obvious. Certain things you just would not say to a child if you are trying--if you are really trying to communicate with them" (BI: 3/17, p. 28).

Portions of the central theme were outlined again during an informal interview before class as the researcher asked what Mr. Ballenger valued. The researcher listed Mr. Ballenger's exact quotations in his notes:

(1) "I place value on people--including kids' experience and on [them as] individuals.

(2) I place value on music.

(3) Through all the things we do in the general music classroom, I hope to tie that all together."

An ancillary note after the listing says, "Every individual wants to be valued" (BFN, 4/2). A return to the questions of 4/8 tied the positive experience with music theme to Mr. Ballenger's first statement about his hopes for communicating content in his classes:

Ballenger: "[I have a] realistic hope for a general music student. Not that they are going to retain those concepts." (BFN: 4/8).
Mr. Ballenger's concept map on methodology included the phrase: "Establish an inviting classroom environment that encourages musical learning." His map on planning mentioned "recognize student positive effort" and "recognize student ability."
Mr. Ballenger's Sources and Themes of Pedagogical Content Knowledge

**Sources**
- Mentor
- Simple
- Influential

**Personal quality**
- Organizational Ability

**Central theme**
- THE POSITIVE EXPERIENCE WITH MUSIC
  - Intensity
  - Sequence of instruction
  - Recognition of positive effort; accept less than correct answers.
  - Digressions

**Student Reactions**

Figure 9. Mr. Ballenger's Sources and Themes of Pedagogical-Content Knowledge.
Mr. Ballenger's Sources Outlined and Defined

Mr. Ballenger has three sources from which he draws his pedagogical-content knowledge. They are: (1) mentor sources, (2) simple sources, and (3) influential sources. These sources are grouped by their common properties [Figure 10]. Each source may be either discrete, that is, contributing mainly to either pedagogical or content knowledge, or concurrent, contributing to both content and pedagogy. Cases of the former dimension seem more rare in Mr. Ballenger's practice. Defining attributes and explanations of each source supporting Figure 10 are given here. Evidence of the existence of each source is then provided from the collected data.

Mr. Ballenger's mentor sources of pedagogical-content knowledge have the properties of being: (1) persons, living and deceased, (2) mostly short-term in influence, and (3) widely variant in terms of type of source: reinforcer, model, coach, discrete, and concurrent.

Mr. Ballenger's simple sources of pedagogical-content knowledge have the properties of being extant usually as long- or short-term sources. As such, his simple sources are: (1) contributory more to content than pedagogical knowledge, (2) limited in long-term contribution to his pedagogy, but (3) remembered by him for transformation and presentation to students throughout his years of practice.

Mr. Ballenger's influential sources of pedagogical-content knowledge have the properties of being: (1) in evidence in both
content and pedagogical knowledge, (2) an enduring impact upon his practice as a teacher over time, (3) arrayed in forms that require little or no adaptation for presentation to students, and (4) extant in theoretical, philosophical, and conceptual forms rather than in human form, i.e. a mentor.
Mr. Ballenger's Sources of Pedagogical-Content Knowledge

Mentor Sources

<table>
<thead>
<tr>
<th>Reinforcer</th>
<th>Model</th>
<th>Coach</th>
<th>Discrete</th>
<th>Concurrent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hal</td>
<td>Jack</td>
<td>Les</td>
<td>Alan</td>
<td>Stephan</td>
</tr>
<tr>
<td>Karen</td>
<td>Nelson</td>
<td>Martha</td>
<td>Barney</td>
<td>Dennis</td>
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<td></td>
<td>Nick</td>
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<td>Kevin</td>
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<td>the Family</td>
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<td></td>
<td>Don</td>
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Simple Sources

Discrete
- Mrs. Brown
- Merle
- Silver-Burdett
- College courses (vocal majors)

Influential Sources

Concurrent
- Music
- Teaching experience
- Knowledge of student characteristics
- Knowledge of contextual conditions

Figure 10. Mr. Ballenger's Sources of Pedagogical-Content Knowledge
Mr. Ballenger's Reinforcer and Model Mentors

The presentation of Mr. Ballenger's mentor sources of his pedagogical-content knowledge includes names which he listed on his concept map [Figure 11], mentioned in interviews, or were determined by the researcher and confirmed by Mr. Ballenger. All properties and dimensions of the mentor categories were confirmed in member check.

Mr. Ballenger confirmed in the course of the study the importance of mentors to his practice:

"It's been my pattern as I've gone through phases, and I retain bits I've picked up from each mentor--developed my own identity. I've had mentor relationships with a lot of people" (BFN: 3/31).

The names used to insure anonymity of the persons were first names chosen by the researcher. The use of such names instead of titles like "Dr.," "Mr.," or "Mrs.," places all mentors on an equal footing. They are not, however, equal in their strength as sources for Mr. Ballenger's practice.

Mr. Ballenger's mentor sources are widely varied in the type of influences received from each, as exemplified in the explanations below. Two of Mr. Ballenger's most important mentor sources are the reinforcer and model mentors. A reinforcer mentor is someone, to use Ballenger's words, who "stroked my abilities" (BI: 3/17). One of these reinforcers was Karen, a
professor and music textbook author who was Mr. Ballenger's
general music professor when he was an undergraduate student.

Researcher: "OK, when did you decide that it was really
general music that was your thing? Was there a time--"

Ballenger: "Probably the later stages of my college education.
I had a knack for writing terrific lesson plans."

Researcher: "All right."

Ballenger: "I can still do it, too. I don't know...that's kind of
what got me going. It was Karen; she loved my lesson
plans and--"

Researcher: "Ah!"

Ballenger: "And she got me excited about it. She got excited
about the way I wrote lesson plans, and I tell ya', that
had a big influence!"

Researcher: "OK, would you say that she was a mentor
ever?"

Ballenger: "Well, in a way. Not so much...not in the way I
said about Jack [a model mentor]. I didn't necessarily
observe her technique so much. But something clicked
between what she thought was good practice, and what
I thought was good practice. And she...she reinforced
whatever that thought was in my mind. Something--
there was a tie there that a lot of kids didn't have.
There were a lot of college students struggling to
understand what she was talking about."

Researcher: "See, mine was Gilda at [name of college]."

Ballenger: "Right, yeah, and so that was a big plus."

Researcher: "OK, so she was more of a reinforcer than a
mentor?"
Ballenger: "Yeah, you can call her that...sure" (BI: 3/17, pp. 6-7).

One other specific reinforcer mentor was Hal, the teacher who directed drama and musicals at the high school Mr. Ballenger attended as a youth. His name readily arose as the researcher asked Mr. Ballenger:

Researcher: "So is there—from early as you can remember, 'till you switched to being a music major...is there one or two people that were mentors—to use the right word, I guess—ah...you've mentioned several people here."

Mr. Ballenger: "Ah...I guess I could start with Hal; he was a high school drama coach. And I wouldn't call him a mentor, but I learned things from him [about acting and theater] from just being under his direction. But I did not have a really close relationship with him."

Researcher: "OK, but he may not have taught you things musically, but otherwise--"

Ballenger: "Right" (BI: 3/17, p. 5).

Mr. Ballenger's next category is unique to him in the way in which he thinks of persons called "models" in the mentor sources. His definition was in the initial interview:

Ballenger: "Yeah, well I would say that the modeling is more in working with groups and working with people" (p. 6).

This definition came about as Mr. Ballenger began to explain two other mentors whom he "observed and modeled":
Ballenger: "Now the next would be Jack. And he I would consider a mentor--I mean, I began to. You either liked Jack or you hated him. And I watched and observed and modeled what he did very much. So he would have been my first mentor in the form of music. And next I would probably say Nelson--I did eventually leave the [an ensemble]. Well, actually, Jack left the [ensemble], and then I went on--and it was probably a needed move anyway--into [two other ensembles]. So I kind of did the same things with Nelson, you know: watched and observed and listened. And that's kind of been my pattern I think. If I can see someone do something--if I can watch them and watch them closely, then I can model that. I can imitate others--" (BI: 3/17).

Mr. Ballenger's definition of a model mentor included Nick, a music director under whom Mr. Ballenger had sung at a church he attended prior to moving to his own current church post. Mr. Ballenger modeled Nick's "approach to people and rehearsal" and how Nick made use of sound enhancement and lighting equipment in productions (BC: 4/7 and BFN: 4/10).

Mr. Ballenger sees his family as a model in the mentor sources in his musical education. Their influence was not specifically content related, nor at all pedagogically related. His parents were, in fact, models as supporters of his efforts in music. His family "frequently attended school and community performances of musical theater productions" (BC: 4/7). He mentioned wider family, too, as he recalls his switch to majoring in music early in his freshman year:
"And I said, 'I ought to try to major in this--go for this.' I had family members—a cousin, who is a music professor, and another cousin who danced professionally, and so it wasn't a foreign thing to my family. And, in fact, my family was relieved that I had gone into music, whereas a lot of families might have been concerned that I switched to music, I was encouraged that 'yeah, that was a good move'" (BI: 3/17, p. 4-5).

Later in the interview, Mr. Ballenger again cited family assent to his music career:

Researcher: "How did you view the realization that you wanted to be a music teacher?...Like as you switched [to music] your second quarter?"

Ballenger: "Well, I guess I viewed it as--"

Researcher: "Your family liked it?"

Ballenger: "Yeah, my family encouraged it and I thought of it as a career that would have a lot of flexibility...that I could go a lot of different directions" (BI: 3/17, p. 8).

Two other model mentors were suggested by Mr. Ballenger on his concept map. The first was Sam, a school administrator:

"His leadership style and encouragement had a great influence on my thinking of how a school should run. He built a positive climate" (BC: 4/7).

The other was Don, a music theory professor from undergraduate days:
"I modeled his approach to classroom practice" (BC: 4/7).

Reinforcer and model mentors have contributed to both content and pedagogical knowledge, but in Mr. Ballenger's case, they did so in different ways. Reinforcer mentors provided "strokes," in Mr. Ballenger's vernacular; that is, these mentors encouraged his approaches, abilities, and patterns of thought. Model mentors are those from whom he learned aspects of working with groups, especially choral performing groups. Here his learning was through true modeling--"watching and observing."

Mr. Ballenger's Special Mentors: The Coach

Calling him "an early coach in the ways schools operate--a 'guerilla warfare person'" (BI: 4/10), Mr. Ballenger named Les, a former colleague, to his list of mentors. In Mr. Ballenger's practice, a coach mentor was characterized as Mr. Ballenger characterized Les: "a giving person--anything he knew, he shared." Another characteristic cited was that Les, as a teacher and political "entity," knew "how to make things happen in a school setting" and was an "encourager."

Les was the first long-term colleague with whom Mr. Ballenger had worked. The attribution, "guerilla warfare person," together with "knowing how to make things happen" was Mr. Ballenger's way of saying how an older teacher had helped a younger teacher learn the explicit and implicit rules in the organizational and political existence in a school and school system.
His concept map contained attributes of Les that were less blunt:
"he taught the methods of influence within an organization" (BC: 4/7).

Another early coach for Mr. Ballenger was Martha, his cooperating teacher during his student teaching. In some ways, she was both coach and reinforcer, as she reinforced his characteristic of being an organized person (BC: 4/7). Ballenger noted that she "steered me well," and was "a big influence" (BFN: 3/30). Much of her organizational impact was a "coded notebook" of materials from which she taught her classes. This notebook tied together materials with elements and concepts sequentially organized for teaching elementary music at all levels. Ballenger used the phrase "have a 'smart back'" [i.e. "sit up straight"] which came from the coaching he received under Martha.

Mr. Ballenger's reinforcer, model, and coach mentor sources are in some way concurrent; that is, he gains both pedagogical and content knowledge from them. Their concurrency lies more in the fact that the source of knowledge in each of them is already a blend of content and pedagogy as he received it. He did not have to totally construct such knowledge himself. His discrete and concurrent mentors contributed such knowledge in more definite strands, requiring him to blend information into true pedagogical-content knowledge.
Ballenger's Concept Maps (Copied exactly from handwritten maps)

Map I. Planning for the General Music Class

What musical concept is demonstrated by selected instructional material?: (hand outs, board work, listening, etc.)

How can the instructional materials be best ordered to lead a student to a better understanding of the musical concept?

What specific guidance will various students need as instruction begins?
- recognize student positive effort
- recognize student ability
- ignore, redirect or punish inappropriate behavior
- arrange class to geographically optimize instruction

How can day-to-day problems best be overcome?

Map II. Preparation for Teaching General Music

Childhood experience

- exposure to musical theater (my family frequently attended school and community performances)
- church choir (children's choir; adult choir in high school)
- having been a child in search of recognition, I seem to understand children who are in need of recognition.

Athletics: Jr. and Sr. high school

- lessons in teamwork and motivation

Musical theater performance; community and school experience

High School: Chorus, ensemble, quartet

Figure 11. Mr. Ballenger's Concept Maps
I was fascinated by performance as a child and I believe that good teaching can be thought of as good performance (theatrical).

My love for performance also drives me to transfer that love to students.

Collegiate Experience

- university Men's Glee Club
- numerous performance opportunities
- association with local millionaire [Glee Club supporter]

Vocal majors
- exposure to opera, art song, oratorio, etc.
- social experiences with an "arts" crowd (expanded my understanding of people)

Teachers
- Karen
  - recognized my abilities
  - encouraged me
- Alan
  - gave me behavioral articles which I read and agreed with somewhat
- Don
  - theory teacher; I modeled his approach to classroom practice
Figure 11 (continued)

- Martha
  - cooperating teacher, elementary
  - systems of organizing material
  - encourager

**Mentors**

- Nick - music director, Suburbia Brotherhood Church, Suburbia, OH
  - I modeled his approach to people and rehearsal
  - Learned about sound lighting, production.

- Les - band director, Gentry Middle School
  - taught the methods of influence within an organization:
    - he demonstrated this skill within the school staff and the school system
  - introduced me to MIDI [Musical Instrument Digital Interface]

- Sam - administrator
  - His leadership style and encouragement had a great influence on my thinking of how a school should be run. He built a positive school climate.

- Dennis - Centercity Boychoir
  - my relationship to Dennis was not close, but he taught me new perspectives on motivating inner-city boys.

- Stephan - Science, history, language teacher, Gentry M. S.
  - this close friend has had the greatest influence on my teaching in recent years
  - as a peer, he recognized and encouraged my strengths
  - we shared experience in canoeing, camping and scuba diving which built a trust relationship
  - Stephan encouraged me to expand my knowledge base of middle school music and develop a more stimulating environment for music students
Figure 11 (continued)

- Kevin - a university professor
  - Kevin has been a steady sharer of information and encourager within my teaching practice

Map III. Methodology

Management

Define limits and norms for classroom activity.

Monitor adherence to norms constantly and take action to correct problems.

Establish an inviting classroom environment that encourages musical learning.

Instruction

Gradually develop musical skill through repetition.

Allow classes to advance in accordance with their abilities and interests. (Be willing to sacrifice some time and content to capitalize on the *apparent position of the class. [*student background]*)

Employ varied methods of instruction.
  (sing, read, discuss, move, listen, etc.)

Disperse information in digestible quantities.
Mr. Ballenger's Discrete and Concurrent Mentors

Mr. Ballenger's discrete mentors include Alan and Barney, two professors who taught Ballenger in undergraduate and graduate school, respectively. Their combined effect on Mr. Ballenger's practice has been profound, though strictly limited to pedagogical aspects of classroom management. Both Alan and Barney taught various aspects of behaviorism.

Mr. Ballenger cited the influence of Alan, though he had only one class with him as an undergraduate. The first citation occurred in the initial interview as Ballenger digressed to mention another influence on his practice that he has forgotten earlier:

Researcher: "What non-musical influences have affected your teaching? Ah...theories, programs...training you've had?"

Ballenger: "I wanted to mention another person—and it's funny how the man had a lot of influence on me and I had just one little class with him. And I didn't particularly care for his teaching style. A lot of things about his personality bothered me. And that is Alan. And it was really through him—he was new at [name of university] and it was really—as an undergraduate student—he piled on all this reading material. And, thinking back, he treated us more like a graduate level course in my mind."

Researcher: "This is like Music [course number]?"

Ballenger: "Yeah, or something—some music methods course—and he's laying all this research on us. All this and it seemed to all relate to positive reinforcement—behavior stuff."
Researcher: [who knows Alan] "He's a behaviorist!"

Ballenger: "Exactly, yeah...and I perked up and listened to it, and read all the piles of stuff he gave us, and some of that seeped through in my mind. I said, 'yeah, that's neat!' So he had a big influence—that one class I took from him" (BI: 3/17 p. 9).

The influence of Alan figured in the stimulated recall interview when the researcher brought up a compliment Ballenger made to a student:

Ballenger: "I said, 'thank you for keeping an eye on them.'" I mean, I could say something good to her. You know-- Alan ______. If you see him just tell him--you know, [he had a] ridiculously profound influence on me for one class."

Researcher: "--and that was like the beginning class you take--"

Ballenger: "Yeah."

Mr. Ballenger's knowledge of classroom management was also influenced by Barney, a nationally recognized expert on school discipline, with whom Ballenger studied as a graduate student. Barney's name came up immediately after Alan's, as the researcher recalled Mr. Ballenger's casual mention of the name:

Researcher: "OK, then you had Barney?"

Ballenger: "Yeah...and then Barney. If I had to say, his theme that came through to me was the idea of 'discipline comes from within' and that we look to
students and we expect—the idea for them is to be self-disciplined, and not externally disciplined, but internally disciplined by themselves, so that made sense to me and I sought ways to make that—"(BI: 3/17, p. 10).

Two other discrete mentors were mentioned on Mr. Ballenger's concept map. Both contributed to Ballenger's pedagogical knowledge. First was Dennis, a former music supervisor in Centercity. "He taught me new perspectives on motivating inner-city boys" (BC: 4/7). The second was Kevin, a college music education professor, who brings his classes to Mr. Ballenger's school for field experience. Mr. Ballenger called him "a steady sharer of information and encourager within my teaching practice" (BC: 4/7).

One concurrent mentor was cited by Mr. Ballenger. This mentor, Stephan, taught with Mr. Ballenger at Gentry Middle School. Mr. Ballenger explained the relationship on his concept map:

"he recognized and encouraged my strengths—encouraged me to expand my knowledge base for middle school music and [to] develop a more stimulating environment for middle school music."

"he has had the greatest influence on my teaching in recent years—we shared experiences, built a trust relationship" (BC: 4/7).
Mr. Ballenger's Simple Sources

The second major category in the classification of Mr. Ballenger's pedagogical-content knowledge is simple sources. The most salient characteristic of simple sources is that they contribute in an uncomplicated manner to his practice. That is, they contribute structured content knowledge that Mr. Ballenger may present to students with a minimum of pedagogical transformation.

Two piano teachers with whom Mr. Ballenger studied are listed first--Mrs. Brown and Merle.

Researcher: "How about lessons? And now we are talking on into high school--college."

Ballenger: "Well, I think that I learned a lot from my piano teacher. Did I mention it to you?"

Researcher: "Yeah."

Ballenger: "OK, I really got pretty good grounding on the fundamentals of scales and chords and--"

Researcher: "Who was that?"

Ballenger: "Mrs. Brown. I can't tell you her first name and I doubt if she is still living. She was an elderly woman who was a neighborhood piano teacher and I thought that she--I also had another teacher in high school--Merle. He was more of a, I think, night club performer. He taught me a little different perspective reading chord symbols and that kind of thing. So he was Merle ______. I'm not sure of the spelling."
Researcher: "I'm sure that in the history of [Ballenger's hometown], I could find--"

Ballenger: "Yeah, you could. He was pretty well known in that area. So he contributed a lot to that. I've always had a good ear. Music came easily to me" (Bl: 3/17, pp. 2-3).

Mr. Ballenger's last assertion is a third simple source. His "ear" is a source of content knowledge specific to music. The use of careful listening by Mr. Ballenger was observed by the researcher many times, and was exemplified by his careful tuning of a guitar:

"Ballenger was desperately trying to tune his guitar as the class came in. He just couldn't get it [to stay in tune], and began asking the students about it as a method of involvement. He decides not to use it at all, puts it away, and then grabs it again, finally getting it 'tolerable'' (BV: 4/7).

The researcher's experiences using a guitar in the classroom led him to believe that Mr. Ballenger's care in tuning was greater than the average teacher's. He was not willing to accept less than exact intonation. He finally did so in order to preserve student involvement and meet his goals for the day.

Mr. Ballenger's education from elementary through graduate school was also listed as a simple source. Examples of such knowledge as it applied to the unit on environmental sounds and rhythm would include factual knowledge from music, general history, and music history.
Older editions of Silver-Burdett Publishing Company's general music texts and materials have influenced Mr. Ballenger. Lessons and recorded examples that Mr. Ballenger has used and refined over the years in the seventh grade unit arise from this content source. The contribution of this publisher's materials to Mr. Ballenger's practice came about through his student teaching, and his early years in Centercity. This influence was first mentioned in the stimulated recall interview and later confirmed in dialogue and vignette:

Researcher: "Why that particular page of the score--because it has things on it you like?"

Ballenger: "It has examples out of a book."

Researcher: "Oh, it was copied from an old book?"

Ballenger: "Yeah."

Researcher: "OK, so the book in some way guided your choice?"

Ballenger: "That's true...that's true" [the videotape rolls on to a certain part of the lesson].

Researcher: "That's from the old Silver-Burdett [Edition]? OK, that old Silver-Burdett is somewhat driving you then?"

Ballenger: "Yeah, in seventh grade, yeah."

The researcher went on to explain that Mrs. Tanner had also mentioned the lesson appearing on his tape as a favorite of hers.
In a later exchange:

Researcher: "Would you say that you are 'materials-driven'?"

Ballenger: "I might. I am in the sense that new ideas come from materials, songs, plans, old series. I see the material first, then insert it into the curriculum...not necessarily driven...spend a lot of time in Silver-Burdett" (BI: 4/10, p. 1).

"Mr. Ballenger said that he was not necessarily driven by materials. He sees the material first, then inserts it into the curriculum if it's useful. He said he does 'spend a lot of time in Silver Burdett' with the seventh grade unit" (BFN: 4/10).

Mr. Ballenger's category "college courses" contributed factual knowledge of music. His ability to digress was evidence of a large repertoire of musical and general knowledge. In the observed unit on sound sources and rhythm, Mr. Ballenger applied facts and concepts learned from simple sources dating from pre-college sources. The portions of class devoted to singing drew upon his knowledge from model mentors as well as simple facts about the use of the middle school singing voice.

Mr. Ballenger's Influential Sources

Influential sources have contributed both pedagogy and content in powerful ways to Mr. Ballenger's practice, and have contributed to the positive experience with music in both theory and concept. Mr. Ballenger's influential sources of pedagogical-
content knowledge have the properties and dimensions of being: (1) evident in both content and pedagogical knowledge, (2) an enduring impact upon his practice as a teacher over time, (3) arrayed in forms that require little or no transformation for presentation to students, and (4) extant in theoretical, philosophical, and conceptual forms rather than human, i.e. a mentor.

His influential sources, in fact, are often synonymous with Shulman's "New Comprehensions;" that is, they are a scaffold of ideas and knowledge arrived at by transforming, combining, teaching, performing, and hearing the simpler sources of pedagogical-content knowledge. As such, some of these sources themselves have subsources.

Mr. Ballenger explained that music itself is an influential source of his thinking about what to teach:

Researcher: "What activity, thought, exercise, or framework do you use to think about what you'll teach? Like do you use objectives or strategies...certain pieces of music?"

Ballenger: "That's probably more likely that I would hear a certain piece of music or discover a piece of music. I actually go through the records that I have collected here [at the school]. Sometimes I subscribe to record clubs. I find in almost any piece of music something I can relate to--take the concept to get across to them. I oftentimes find teaching material in that way" (Bl: 3/17, p. 19).
Mr. Ballenger thought of music as central to what he does:

Researcher: "Basically, it's always the music?"

Ballenger: "That's it; to me music is very simple. And I try to communicate that to the kids. I really think that even in its most complex form, music is pretty simple" (BI: 3/17, p. 17).

The influence of musical performance was a fascination for him as a child (BC: 4/7) and he tries to help students see that music is a part of life:

"There've been cultures that recognize that music is woven into what we do" (BFN: 4/8).

Mr. Ballenger's teaching experience was the second influential source of content and pedagogical knowledge. His teaching experience had subsources of both content and pedagogy as well as contributing to content and pedagogy. Such experience was and is a prominent influence upon what content is chosen and how Mr. Ballenger transforms it for presentation. It was first mentioned in the initial interview:

Researcher: "Do you view yourself as a middle school general music specialist?"

Ballenger: "I guess I am."

Researcher: "Why?"

Ballenger: "Well, I guess because I have invested a great deal of time in just doing that and experience is important."
Ballenger also credited his experience with the ability to make quick interactive decisions in his classroom as evidenced during stimulated recall:

Ballenger: "I goofed there. I should have sent them immediately to their chairs."

Researcher: "Right."

Ballenger: "But I realized I'd goofed and had to decide. It's strange how quickly your mind can work. I realized I made a mistake and said, 'Oh man, am I gonna' let them sit down?' And I decided 'no,' just shift it fast. I mean, I'm surprised how quickly that--because in my mind that took--making that decision took forever. In my mind."

Researcher: "Oh, yeah."

Ballenger: "But it was only like two or three seconds--"

Researcher: "But how do you make those decisions? Do you make them because of what or how--why are they pretty fast? I guess that's one of those obvious answers."

Ballenger: "Well, I think it's the same thing--I think once you have taught--I think experience is the teacher" (BI: 4/7, p. 17).

One facet of Mr. Ballenger's beliefs about teaching was "that good teaching can be thought of as good performance" (BC: 4/7). This was borne out in a vignette:

"He has to use a few theatrics with the boys to settle them" (BV: 4/7).
He explained further in stimulated recall:

Researcher:  "Were you excited, really, or are you a good actor?  And I don't mean in the negative sense."

Ballenger:  "Well, a little of both.  I mean I exaggerated it in order to get the boys not to make fun of the girls."

Researcher:  "I thought for a minute that you were going to really yell at them and then I noticed it's more like you were putting it on the way I was seeing it."

Ballenger:  "Yeah, sort of theatrical things which I--almost Jekyll and Hyde--in and out--ya' know" (BI: 4/7).

The final concurrent influential sources evident were knowledge of student characteristics and knowledge of contextual conditions. These two sources, sharing a close relationship with Mr. Ballenger's central theme, reflect what Elbaz (1981) calls "knowledge mediated by practice" (46).

Mr. Ballenger's first reference to a characteristic of middle school students had to do with use of words that communicate to them:

"--and then, being able to use words--use the right words to carry out, probably, a dialogue with students...knowing what questions to ask, anticipating what an individual's question would be on a particular subject" (BI: 3/17, p. 11).

His initial comments led the researcher to ask him about possession of content knowledge:
Researcher: "Does it have to do with content knowledge?"

Ballenger: "Well, I'm not sure. I think it might be that I find this age group—there is a fascination I have with this age group and working with them" (p. 12).

In the middle of the interview Mr. Ballenger revealed how he had acquired an influential part of his knowledge of middle school students beyond the classroom:

Researcher: [asking about influences on planning] "I have down here 'socioeconomic class of students'--"

Ballenger: "Yes, I mean, in reality, yes. I've done home visits in the "rough" area of our school. My first year, I did like 25 home visits."

Researcher: "Why?"

Ballenger: Ah...mainly because I was having discipline problems with--I guess it was mainly eighth graders that year. So I went to ______________, which is a rough--"

Researcher: "--these are the bused kids?"

Ballenger: "Right. Most of them were there, although I did home visits in and around Midcity [Middle School]. But ________ was where I did most of them, and became more aware of the social status of some of them. It's really pathetic. So it did change my expectations of general music in the class. Like, if I have general music class and I think it's largely made up of kids that I put into certain categories socioeconomically and also culturally--"

Researcher: "--OK--"

Ballenger: "--then my expectation of them changes."
Researcher: "Uh-huh--not necessarily lower, just different?"

Ballenger: "Not necessarily lower. And I do appreciate their God-given abilities. And I try to tap into that" (Bl: 3/17, pp. 20-21).

Mr. Ballenger pursued the background of the visits. He said they were the idea of Barney and of a friend of his who teaches in another middle school. Knowledge of students' maturational characteristics was mentioned during stimulated recall:

Researcher: "I just think the kids are so self-conscious. I mean, their voices--the laughter goes back and forth between the sexes it seems like."

Ballenger: "Yeah, yeah, and that's 'cause I think the boys are very immature in this class, generally, and the girls are very mature. Did you notice the girls are all about the same height?"

Researcher: "Yeah."

Ballenger: "The girls are almost identical physically, and the boys are--"

Researcher: "--but they are probably carrying five to ten pounds more than they would have twenty years ago."

Ballenger: "Yeah" (Bl: 4/7, p. 5).

Mr. Ballenger traces his insight into the students' need for attention in class to one of his own personal characteristics. He revealed this on his content map and explained it in stimulated recall:
Researcher: "But other people would have struggled with that kid? Does this go back to your assertion early on [the initial interview] when you said to me, 'part of knowing how to discipline is the way you were brought up yourself and it's kind of innate.' ...or that it was 'common sense.'"

Ballenger: "Well, it may be common sense, but see, as a child, I was a child who craved attention."

Researcher: "OK."

Ballenger: "And I didn't get as much as I wanted."

Researcher: "OK."

Ballenger: "...and so therefore I recognize what's going through the mind of a child who's looking for focused attention and for recognition of ability" (BI: 4/7, p.13).

Mr. Ballenger said he believed that this characteristic has endured into his adult years. He went on to cite proof from his kindergarten report card that said, as he remembered it:

"...is very bright, and sees certain things, but he always is seeking attention...recognition...he wants to be recognized for that...has a need for that"

He ended by agreeing that this need for attention drives his practice in some ways:

"Probably, probably...Well, I mean it's...No, that's probably true to some extent" (p. 14).

Confrontations with a normally cooperative student and a chronic absentee on the last day of the unit provided a perfect
illustration of Ballenger's knowledge of student characteristics and his desire to attend positively to the students while ignoring behavior and preserving instructional time. It was recorded (with the researcher's comments) in the vignette for that day; "B" is Mr. Ballenger.

"Today was a notebook check. B said he'd do this as he checked roll. He returns paper to Mary, who sees that she got an "F" for not participating the day before. She immediately sets up what I've always called, in my own experience, the 'threatening mutter.' This consists of barely audible threats about what a certain student will do. In her case, it was 'what my mother's gonna' do when I tell her.' B's reaction to this was to ignore the behavior. This baiting behavior rarely stops, in my experience, until it blows full in some way. B's only response was to say, finally, 'Mary, are you angry about your grade?' He asked this in a [quiet] nonjudgmental tone. The response was 'Yes, I told you I was hoarse, and you tried to make me do it [the rhythm piece].' Apparently, this had been the in-group problem when they were trying to get the syllables together. The mutter continues. B's only response is 'all right, all right' as he continues to check notebooks. I believe that this may be his way of defusing by acknowledging her feelings, but not really confronting her. He does the 'all right, all right' once more as he tries to maintain a normal routine. When it comes to her notebook, he is somewhat conciliatory. She says 'you're just tryin' to make up to me.' He says, 'yeah, I am.' She mutters, but he checks her notebook, and says, 'You're takin' a step in the right direction.'

At another student's desk, he says 'look at this notebook! Wow!'

At this point, Nancy, usually absent, is present and tries to start something. She begins a mutter of her own, to no one in particular, about 'if we sing today, I want to leave the room; I have a headache.' B is by now distributing staff
paper for review of note reading. Nancy continues, until she gets B's attention, then starts about 'are we going to sing?' They talk a few seconds about her condition, and the fact, that, yes, B has singing planned 'if we get to it.' He asks her if she got enough sleep, etc. She eventually resumes work on the other classwork she seems to always be doing. When the class is dismissed, B has to get the paper from her as he is holding the papers for them for their notebooks. He had been particularly insistent that day that they just not run out of the room, but get their papers in order, etc. before leaving. He enforced this on Nancy, even though she probably turned in a blank sheet" (BV: 4/10).

Mr. Ballenger's knowledge of the context in which he teaches was closely allied with his knowledge of student characteristics. Mr. Ballenger made reference to context throughout the study showing his knowledge of context, and relatedly, how context shifts will bring about shifts in teaching approach. In addition to the section of Chapter III labeled "Mr. Ballenger in Context," the following pages draw upon Mr. Ballenger's perception of his context and how it affects his teaching practice.

Context as described by Mr. Ballenger included not only knowledge of student characteristics, but the constraints of time:

Researcher: "Do you select [materials] based on what kind of time is available?"

Ballenger: "If I were teaching a year-long curriculum, then I would have to dig in and have far more examples of each of the particular elements. I would spend a lot more time."

Researcher: "So, in other words you don't have that many examples because you're--"
Ballenger: "--because I only see them for nine weeks" (Bl: 3/17, pp. 22-23).

Mr. Ballenger also cited the constraints place up his general music classes by having an upcoming major performance:

"--like the kids that are in here now are getting shortchanged simply because I'm in the middle of a major performance. They're just not getting all of my energies" (Bl: 3/17, p. 19).

The arrangement of the classroom was seen by the researcher to be of critical import to Mr. Ballenger. His room, divided into "classroom" and "singing" areas is part of his whole organizational pattern as well as part of the context of his teaching. The researcher helped Mr. Ballenger arrange chairs for the two parts of the room several times. The context of the room's arrangement was confirmed in fieldnotes:

"Mr. Ballenger told me 'geography is important,' and that his concern for the arrangement of the student seats grew out of his general background. He said he was 'absolutely crazy' if a chair is out of a circle, for example" (BFN: 4/10).

Teaching context as influenced by curricular documents was mentioned by Mr. Ballenger:

Researcher: "Do you ever thumb through the course of study book to look at the objectives?"

Ballenger: "Uh-huh"
Researcher: "You do?"

Ballenger: "I helped write it for the Centercity schools. So that kind of thinking has affected me."

Researcher: "But do you have the junior high pages of it like, taped to your desk or in your planbook?"

Ballenger: "No."

The researcher asked Mr. Ballenger in stimulated recall if he would truly care if students thought they had learned nothing in his class and threw their music notebooks away.

Ballenger: "Ah...that's fine. I mean, it would not bother me in the least. And the fact is, they have learned inside."

Researcher: "Right."

Ballenger: "They may not have learned the course of study."

Researcher: "OK."

Ballenger: "But that's not what learning is all about, really" (BI: 4/7, p. 11).

The foregoing pages have provided an outline, explanations, and supporting evidence of the sources of Mr. Ballenger's pedagogical-content knowledge. The next section explains how he applies these sources to his teaching and how his personal qualities affect his use of sources.
The Formation of Mr. Ballenger's Pedagogical-Content Knowledge

Mr. Ballenger's organizational ability was the most important personal quality observed in this study. Mr. Ballenger verbally confirmed this personal quality several times.

The researcher observed five organizational patterns exhibited by Mr. Ballenger: (1) Materials were readied in advance of class--tapes were cued, records were placed on turntable, seating charts were laid out, handouts to be used in class or returned to students were placed on the file cabinets' common top, and posters were laid out. (2) Both the desk area of the room and the chairs for singing were pre-arranged. (3) Mr. Ballenger's organization enabled him to move quickly and effortlessly to the next step in the lesson, including having students change from desks to chairs. (4) Mr. Ballenger briefed students on the lesson's sequence at the start of class. (5) Mr. Ballenger insisted that each student keep a notebook, and dictated the type of folder students were to use. He believed that organizing the notebook into a cohesive unit--"a notebook with tabs--makes them think twice before throwing it away" (BV: 3/31).

Three types of organization were mentioned by Mr. Ballenger that relate to his personal characteristic, organizational ability. "Organizing thoughts sequentially" was a claim to giftedness that Mr. Ballenger made (Bl: 3/17, p. 11). The second and third types were: (1) "using the right words to carry out a dialogue with
students" (p. 11), and the importance of "geography" [room arrangement].

Mr. Ballenger's organizational ability affects the number of sources from which he draws his knowledge of both content and pedagogy. His ability also contributes to those sources through the addition of new ones, and the enrichment of the old. Organizational ability also contributes to and is affected by his central theme, the positive experience with music.

The characteristics of the central theme are listed below. This list was created through researcher interpretation and confirmed by Mr. Ballenger as accurate. First, the data was examined for sources of various types as well as evidence of prominent personal qualities. Second, these sources and qualities, evidence of such sources and qualities, and statements cited about the positive experience with music were examined for characteristics of that theme. Through these characteristics, the researcher was able to trace observed actions of Mr. Ballenger back to his sources by way of his positive experience with music and organizational ability.

The five characteristics of Mr. Ballenger's positive experience with music follow. They are examples of his pedagogical-content knowledge. That is, they are a blend of both discrete and concurrent pedagogical and content sources, researcher and participant perspectives, and draw upon all three of his major source classifications:
1. Mr. Ballenger considers creating a positive general music classroom to be an important part of his professional work. He believes that he can reach students through positive reinforcement of what they can do, even if they only are partially correct.

2. Mr. Ballenger has organizational ability that allows for maximum efficiency in teaching middle school general music.

3. Mr. Ballenger has a great specific knowledge of the content of the subject as well as a general content knowledge in other disciplines.

4. Mr. Ballenger has a knowledge of students' social, academic, and mental characteristics and applies his understanding of them toward ensuring the positive experience with music.

5. Mr. Ballenger uses high levels of teacher intensity in the classroom evidenced through careful organization, rapid pace, smooth transition, and good student behavior.

The final portion of Mr. Ballenger's case is an explanation of how his repeated daily actions are evidence of his sources of pedagogical and content knowledge. Mediated by his organizational ability and central theme, the primary evidence appears as teacher intensity. Further specific evidence of his intensity was seen in sequence of instruction, recognition of positive effort, acceptance of less than correct answers to questions, and digressions.
Intensity was repeatedly evidenced by Mr. Ballenger through certain "theatrical performances" given for students:

"Mr. B. was in constant motion, demonstrating points. One that he did was demonstration of loud versus soft by saying a phrase, then running to the far end of the room and speaking it again" (BV: 3/26).

"He began to raise his voice at certain times, saying 'Look! Look here!'" (BV: 4/1).

Intensity was specifically demonstrated through his careful sequencing of instruction. Several times in the course of the study, two points of philosophy on sequencing--complexity and amount of material--were evident:

"He goes a little deeper into depth with the selection this time" (BV: 4/6).

Ballenger: "From simple to more complex" (BI: 4/10 p. 2).

"Gradually develop musical skill through repetition--Disperse information in digestible quantities" (BC: 4/7).

His planning concept map also contained these questions:

"How can the instructional materials best be ordered to lead a student to a better understanding of the musical concept?--What specific guidance will various students need as instruction begins?" (BC: 4/7).

Mr. Ballenger's central theme was strongly exhibited by his constant recognition of individual students' positive effort:
"- recognize student positive effort; - recognize student ability" (BC: 4/7).

His acceptance of a less than correct answer extended this recognition:

"He constantly thanks kids for cooperating and praises their effort for even a partial[ly] correct answer. This corresponds with what he told me about 'catching them being good' in the initial interview" (BV: 3/26).

"The sequence was replete with compliments to students, and acceptance of partially correct answers which Ballenger blended into another question to get at what he desired" (BV: 3/30).

Ballenger: "I'd rather coach his responses [than have a completely correct answer]" (BI: 4/10).

Examples of myriad positive "strokes" (Ballenger's term) given his students included these:

"Joe, you're the first student to ever notice the sonic boom at the end. This guy knows airplanes. Nice way to put it" (BV: 3/26).

"I appreciate the way you came in. You guys have good voices. You are a bright guy. I think that's absolutely right!" (BV: 3/27).

"It's OK, you're trying" (BV: 4/9).

Digression was a feature of Mr. Ballenger's teaching sequence and style. He recorded it on his concept map:

"- allow classes to advance in accordance with their abilities and interests. (be willing to sacrifice some time and content
to capitalize on the apparent position—student background—of the class") (BC: 4/7).

Comparable wording emerged in stimulated recall:

Researcher: "When you digress there are places where you do abandon it and let it be led by student responses—and you're willing to abandon the concept."

Ballenger: "Yeah, I'm willing to sacrifice a little time on a particular concept that I'm trying to teach that day. I am willing to sacrifice that to go with a student response for a time—or go another direction" (BI: 4/7, p. 1).

The researcher asked Ballenger if he believed that he probably possessed general content knowledge about things that other teachers may not have.

Ballenger: "Probably, yeah."

Researcher: "General knowledge, or are you just curious and notice stuff?"

Ballenger: "Well, I think it's a combination of both. I do have an interest in just knowledge in general—and varied interests. And I think in any endeavor, there is a certain set of facts you need to know before you engage in it. So I try to let kids know they need to have certain—if they want to do anything, they have to have the terminology in that subject and then have the experience" (BI: 4/7, p. 1).

Examples of Mr. Ballenger's digressions included mostly non-musical knowledge.

"He reviewed with them about sounds in the questioning sequences in 'B questions'. He is also a master of digression,
seemingly drawing from a well of broad content knowledge in all areas" (BV: 3/26).

"In a lesson featuring sounds of the waterfront from Porgy and Bess, there was a great digression to tell about crab catching and eating." (BV: 3/30).

When questions arose about his preference for a particular type of folder for keeping the papers together in music notebooks, Mr. Ballenger digressed to tell a related story about a former student:

"In the course of the class, he told a story about going to get his oil changed at a quick-lube place. One of the 'old guys' there said, 'Hey, aren't you Mr. Ballenger? I still have my music notebook!'" (BV: 3/31).

Yet another music-related example with a general point:

"He digresses to give the story of his going to the opera. And that he'd had to look up info about Faust before he goes. This started when Kim quickly answered what mp was by glancing at the wall chart of dynamic levels. Ballenger said that that was a model of how to do things. 'You may not know all the facts, but you can know where to go'" (BV: 4/7).

Finally, a digression that served multiple purposes:

"There is a discussion on the guitar "hammer jammer," an article about which appears on Ballenger's bulletin board. A girl trickles in late. There is some discussion about her shoes [why she doesn't have them on]. Ballenger digresses to talk about 'Shoe White.' He finally ends the discussion with the somewhat out-of-sorts girl with, in regard to her shoes, 'Well, they look nice'" (BV: 4/8).

Mr. Ballenger's classes are not taught in discrete units as such; as the observation ended, the class was moving on to melody writing.
In this part of Chapter IV, the researcher has explained the sources of Mr. Ballenger's pedagogical-content knowledge, his personal characteristic, central theme, and evidence of his application of his sources of knowledge to teaching. The results of such application, student reaction, in both social and academic aspects, ends Figure 9.

This is not, however, the end of Mr. Ballenger's pedagogical-content knowledge. Like Shulman's "new comprehensions," the reactions of the students to the general music instruction is recycled by Mr. Ballenger to his numerous sources, most notably the broad source, "teaching experience." Thus, his pedagogical-content knowledge has been enriched by the initial application of his pedagogical-content knowledge in interaction with his students.
CHAPTER V

A THEORY ARISING FROM A COMPARISON OF CASES

This chapter outlines the comparison of the teaching practices of Mrs. Tanner and Mr. Ballenger and explains the theory arising from the comparison. A comparison of the two cases of exemplary middle school general music teachers revealed similarities and differences in sources and applications of pedagogical-content knowledge.

The Two Practices Compared

A comparison of how pedagogical-content knowledge developed in the two cases is the first concern of this chapter. The approach taken during comparison was a consideration by the researcher of the sources and themes of each teacher [Figures 5 and 9]. An analysis of both cases revealed similarities in the practices of Mrs. Tanner and Mr. Ballenger.

The practices of Mrs. Tanner and Mr. Ballenger had the following factors in common:
(1) Each had a central theme that applied social considerations. This social mediation was present in the blending of content and pedagogy into pedagogical-content knowledge.

(2) Each had rich and varied sources of both pedagogical and content knowledge from which he or she teaches. The researcher classified these [Figures 6 and 10] into mentor sources, simple sources, and influential sources, each with its own general characteristics. The main theoretical framework arising from this classification was that both teachers had discrete and concurrent mentors contributing respectively to content, pedagogy, or to both content and pedagogy simultaneously.

(3) Both teachers had abundant general and musical knowledge as a result of the many sources. This knowledge was a base from which the teachers selected material and information for instruction.

(4) A guiding personal quality was identifiable in each case which affected the choices from the knowledge base and which, in turn, enriched the knowledge base. Each teacher selected new information, in part mediated by the personal quality, to become part of the base.

(5) Each had a well organized set of beliefs and knowledge about student characteristics. This knowledge also influenced the selection, transformation, and presentation of content to students. It was likewise influenced by content in terms of updating characteristics on current student musical preference.

(6) Both teachers were aware of comprehensive context and how it affected their teaching in terms of selection, adaptation, and presentation. Their spheres of awareness extended beyond the classroom and into the community.
(7) Teaching experience was a powerful commonality. It was another factor influencing choice of material and type of presentation.

(8) Knowledge of characteristics, context, and experience overlapped and functioned together as the two teachers constructed a broad knowledge of the classroom, school, and society in which they work.

(9) Both teachers showed evidence of social considerations in their classrooms, exhibited various aspects of intensity in their presentations, and were willing to share wider musical and general knowledge with students outside the discussion at hand.

(10) The feedback received during instruction, the reflection undertaken by the teachers after instruction, and the results of evaluating students—"student reaction"—was continually reapplied as a source of knowledge and an influence upon personal characteristics, knowledge of context, and upon the central theme itself.

(11) The researcher believed that the teachers, for the most part, seemed to be aware of the perspectives, beliefs, and assumptions which guide their practices, even though they may not have articulated such thoughts within the framework of the study.

The researcher found more similarities than differences in the respective teaching practices of Mrs. Tanner and Mr. Ballenger. The similarities outlined above required broader interpretation in the drawing of parallels than did the differences. The differences and a brief explanation of each follow:

(1) Mrs. Tanner's mentors had influenced her practice for a longer period of time than Mr. Ballenger's. The ages of
the participants, and thus, their number of years teaching, was the prime factor. Also Mrs. Tanner was somewhat more willing to reveal the larger influences of others in her practice, whereas Mr. Ballenger revealed a wider variety of types of mentors.

(2) The main personal qualities of the two teachers differed as perceived by the researcher. These perceptions were interpretive in nature and do not mean that the presence of a personal quality implies a lack of other qualities.

(3) Mrs. Tanner's central theme, the social perspective, is a much broader representation of what drives her practice than Mr. Ballenger's positive experience with music. While both are social in nature, Mr. Ballenger's theme is mediated by a more behavioristic influence as well as by his personal quality, organization. Mrs. Tanner's theme is driven by considerations of a wider society and contains some evidence of a need for motivation by students in a larger world.

(4) There was a vast difference in the visibility of the practices of the two teachers both inside and outside the educational community. As noted in Chapter III, Mr. Ballenger's name arose immediately. Mrs. Tanner's name arose with difficulty. Explanations for this phenomenon probably have to do with the geographic location of the two teachers and the use of Mr. Ballenger as a cooperating teacher with university classes. Perceptions and misperceptions about what general music is and what is done in general music classes was also a factor in the sampling process. (Kritzmire, 1991; Taggart, 1991; Reynolds & Moore, 1991).

Theory drawn from these cases shares the characteristic of all theory: it is in need of continual refinement through additional
research in the field. Generalizability (transferability) of two cases is limited to situations to which the reader applies them. For this reason, the two cases presented have been as detailed as possible in terms of evidence of sources, qualities, and central themes.

The theory arising from the comparison of the cases of Mrs. Tanner and Mr. Ballenger has been labeled by the researcher the *social mediation theory* [Figure 12]. The social mediation theory in teaching general music is an application of the two teachers' Sources and Themes of Pedagogical-Content Knowledge [Figures 5 and 9] to Shulman's and Jordan's Models of Pedagogical Reasoning and Action [Figures 1 and 2]. That is, the sources and themes affecting each teacher's practice individually are now compared (Glaser & Strauss 1967). The result is a model of a central theory encompassing both teachers' themes. Definitive statements about the theory, a process model of the theory, and an explanation of the theory through comparison with prior educational research comprise the rest of the chapter.
A Model of the Social Mediation Theory in General Music Teaching

Figure 12. The Social Mediation Theory in General Music
The teaching practices of Mrs. Tanner and Mr. Ballenger operate from two central themes. They are the social perspective and the positive experience with music. Both of these central themes are grounded in "two sorts of transactions . . . one is . . . the organizational, interactional, social, and management aspect of classroom life, sometimes dubbed the hidden curriculum, though its visibility has improved dramatically as it has been studied." The second is " . . . the academic task, school assignment, classroom content, and manifest curriculum" (Shulman, 1986a, 8).

The term social mediation comes from Elbaz's statement "knowledge mediated by practice" (1981, 46). That is, generally teachers' pedagogical-content knowledge develops from knowledge mediated by practice—teaching experience. In the cases of the exemplary general music teachers studied, the mediation occurred as much, if not more, through social considerations—Shulman's first transaction—compared to content considerations.

The model [Figure 12] of the social mediation theory shows that both teachers: (1) possess personal, organizational, and motivational characteristics which drive their planning, transformation, and presentation of content; (2) make extensive use of knowledge of student characteristics, teaching context, and instructional experience; (3) apply these characteristics and knowledge to their broad general content and musical knowledge;
(4) evidence regard for students in interactive teaching; (5) examine student reaction to the content presentations through written and oral evaluation, interactive formal and informal evaluation, and student produced projects; and (6) apply new comprehensions and new inferences to their next cycle of presentation of content.

The social mediation process as a theory revolves around the two teachers' blending of their sources of content and pedagogical knowledge into coherent instruction in their respective classrooms. These exemplary teachers, influenced by their central themes, think, plan, select, organize, present, and reflect with their students, themselves, and the content in mind.

Social Mediation in the Educational Literature

This study confirms aspects of the theories and models of Shulman as they are articulated in the literature. First, the exemplary teachers' reasoning and action do follow Shulman's Model of Pedagogical Reasoning and Action. The charts of Mrs. Tanner's and Mr. Ballenger's Sources and Themes are personalized versions of this reasoning and action. Second, the exemplary general music teachers' knowledge of student characteristics, teaching context, and their teaching experience comprise three of Shulman's seven categories of the knowledge base of teaching (1987).
Other educational researchers have found social mediation inherent in teacher practice. Clark and Peterson's 1986 review of literature on teachers' thought processes provides examples of such findings: (1) research on teachers' planning processes mention pupil considerations in half the studies, and (2) the largest percentage of teacher's interactive thoughts concerned the learner. Taylor (1970) found that teachers who write syllabi focused principally on the pupil and his or her needs, abilities, and interests.

The four "commonplaces" of Schwab (1978)--subject matter, learners, milieus, and teachers--invite comparison with the social mediation process. Personal qualities and characteristics in the social mediation theory are comparable to Schwab's last commonplace, "teachers." Schwab includes in this category personality, characteristics, and prevailing moods as well as relationships.

Schwab's "subject matter" corresponds to both musical and general knowledge in the social mediation theory. His category, "learners," compares to "knowledge of student characteristics" in the model. By "milieus," Schwab means "context" in both broad and narrow interpretations.

Research in other content areas of education shows that teachers exhibit forms of social mediation. In a study of a secondary social studies teacher by Cornett (1987), three of five personal practical theories and two subtheories were related to
student and teacher social beliefs and resultant behaviors. The interests and abilities of middle school students were taken into consideration by teachers in four subject areas studied by Brown (1988). Elbaz (1981) includes "social" in her five orientations of practical knowledge. Her social orientation "is meant to encompass both the shaping of teachers' knowledge by social conditions and constraints, and the active role of their knowledge in structuring the social setting of teaching" (49).

There are also differences between educational research and practice and the social mediation theory arising from the two cases in this study. One of these is mentoring.

Mentors are another social aspect contributing to the social mediation theory. Although mentoring is often advocated and used effectively in education, research lags considerably behind practice (Jacobi, 1991). Mentoring is widely advocated, but neither Mrs. Tanner nor Mr. Ballenger had the benefit of a structured program. While neither will ever know exactly what difference this may have had upon their current practices, the evidence gathered here may begin to tell a different story.

Mrs. Tanner and Mr. Ballenger's mentor sources are rich and varied. They were all of variable duration and intensity. In both cases, the motivation of the two teachers made them (and still makes them) seek these persons for themselves. For Tanner and Ballenger, their mentoring processes are much like chain sampling; they are always looking for someone who knows a lot about a
particular topic. Both have had recent/continuing mentor relationships. Only further research will show if motivation to have a mentor is characteristic of exemplary general music teachers.

Another important difference is between Shulman's assertion about his band of social transmission, the "hidden curriculum" and the evidence from the practices of both Mrs. Tanner and Mr. Ballenger. While Shulman notes the increasing visibility of the hidden curriculum, the researcher believes that to the exemplary teacher, the ability to verbalize his or her beliefs may be greater than it is in the practices of other teachers.

Both participants in this study could easily articulate their beliefs, assumptions, and to an extent, their themes. That they had not labeled or scrutinized them in a formal fashion was the main obscurity noted. The two cases here exemplified a willingness to share and scrutinize. Though classroom agendas of the two teachers may have been hidden from explicit student knowledge of their existence, the agendas seemed well known to the teachers studied, as were the sources of such agendas.
CHAPTER VI
SUMMARY, IMPLICATIONS, RECOMMENDATIONS

Summary

This study was undertaken to answer five guiding questions about the development of pedagogical-content knowledge in exemplary middle school general music teachers. They were:

1. What factors, observed by the researcher and cited by the subjects, have contributed to their content (musical) knowledge as exemplary middle school general music teachers?

2. What factors, observed by the researcher and cited by the subjects, have contributed to their pedagogical knowledge as exemplary middle school general music teachers?

3. What factors, cited by the subjects, were meaningful in their personal and professional development in content and pedagogy?
4. What effect, observed by the researcher and cited by the subjects, does teaching context have upon their pedagogical organization and practice as exemplary middle school general music teachers?

5. What was the extent of awareness, as cited by the subjects, of their pedagogical-content knowledge?

Using data generated from responses to these questions, emerging questions and transformed guiding questions were also answered. Case studies were written for two teachers identified as exemplary middle school general music teachers using fieldnotes, transcripts, audio and videotapes, interviews, and concept maps. From these cases, the researcher posited a theory pertaining to the development and application of pedagogical-content knowledge of the two exemplary middle school general music teachers.

This chapter compares the theory explained in chapter V with the opening assertion of this document. That is, the social mediation theory is compared with the principles of practice specific to music education along with their "implicit assumptions . . . jargon, maxims and patterns of action aimed at some practical end" (p. 1).

What makes a middle school general music teacher an exemplary teacher? In answering this question, everyone from middle school students to music teacher educators claim to know
exemplary teaching when they see it. Pressed further, observers often enumerate a list of characteristics that may make sense to everyone. Such respondents do possess the proof of their observations and experiences, and give such proof grounding in examples and occurrences. The shortcomings are that there is little evidence arising from studies of exemplary middle school general music teachers and observers must rely most heavily upon "personal criteria that may or may not have any relatively objective basis" (Radocy, 1991, 4).

The evidence possessed about the traits of middle school music teachers to date may be classified as one of three types: (1) article-length syntheses of research in music education, general music, and general education; (2) reports of music education committees listing desirable qualities and traits of music teachers; and (3) research studies in general music defining desirable traits for middle school general music teachers.

Educational literature has a long history of characterizing exemplary teachers (Barr, 1929; Higet, 1950; Ryans, 1960; Veaco & Brandon, 1986). However, the profession of music education has been slower to demarcate the traits of exemplary teachers; the three areas listed above exemplify the extant literature.

The social mediation theory presented in Chapter V is a synthesis of exemplary general music teacher traits arising from the evidence of certain teacher characteristics and observable behaviors. In addition to characteristically possessing certain
types of source knowledge [Figures 6 and 10], Ballenger and Tanner exhibited observable behaviors as diagrammed in the lower portions of Figures 5 and 9. When compared to the literature in each of the three categories, these characteristics and observable behaviors strengthen previous characterizations of exemplary general music teachers.

Several articles in recent years provide syntheses pertinent to teaching secondary general music (Hughes, 1987, 1991; Reynolds & Moore, 1991; Gerber, 1987, 1992). The articles range from advocacy to specific lesson plans to teacher characteristics. These articles, written by experts in the profession, are a valuable addition to the literature about secondary general music teaching. They are important because they provide useful summaries of what is known in the field, and stimulate critical thinking among practitioners. What is generally lacking in statements made about secondary general music teaching is evidence arising directly from research in that field.

One exemplary addition which fits into this category is "Meeting the Challenge of Middle School Teaching" (Gerber, 1992). Gerber's synthesis stemmed from: (1) general educational research in secondary and specifically, middle school, education; (2) personal experiences of the author; (3) experts' opinions and advice; and (4) general assumptions and understandings about good teaching.
Gerber asks, "... just what are the measures of success in teaching music at this level?" (1992, 38). He then answers, with a list of traits: "Music education literature offers various lists of desirable teacher traits, but in the eyes of the kids, successful music teachers are:

(1) those who know and are well liked by a large segment of the student population.

(2) They treat all students as individuals, reaching out in particular to those whose achievement and motivation levels are low.

(3) They create organized and stimulating classroom environments that enable students to foster friendships through musical problem-solving activities.

(4) They give clear directions, and then build in enough repetition to iron out musical mistakes.

(5) They deliberately avoid opportunities to criticize, looking instead to encourage students to see themselves as musically perceptive and capable learners.

(6) And they genuinely like what they do, consistently showing their students that they respect and care for them while supporting and accepting their musical and academic efforts" (1992, 38).

Gerber continues: "To use the middle school vernacular, successful music teachers are like successful teachers in all subjects: they are nice, fun, and fair.

(1) They expect good behavior and reasonable effort.

(2) They minimize anxiety and self-doubt in students by emphasizing the process rather than the product.
(3) They focus on *how* to learn what must be learned.

(4) Thriving music teachers understand their students' musical interests and can talk knowledgeably about the music various peer groups prefer.

(5) They listen to AM radio and watch MTV.

(6) They enjoy shooting the breeze with kids, no topics barred.

(7) They don't take themselves too seriously and they avoid the ultimate student criticism in all of schooling: 'My teacher is boring'" (1992, 38).

The purpose for the inclusion of the extensively quoted material above is neither to agree nor disagree with it. Gerber's statements are generally supportable as outlined above. The researcher's purpose is to ask, "How much of these two lists can be supported by research specific to general music?" The dearth of research particular to general music at the middle school level provides the answer: A few of the listed traits have been shown by specific research to be traits of the exemplary middle school general music teacher, but mainly on the strength of one study (Gerber, 1989).

However, support for Gerber's lists of characteristics is seen in two reports issued over a period of twenty years by the Music Educators National Conference (MENC). The final report of MENC's Teacher Education Committee (1972) lists seven personal qualities for music educators: (1) inspire others, (2) continue to learn in their own and other fields, (3) relate to individuals and society, (4)
Relate to other disciplines and arts, (5) identify and evaluate new ideas, (6) use their imaginations, and (7) understand the role of a teacher.

Because "the ability to communicate with students is essential for teachers," the report lists four professional qualities that music educators should possess: (1) ability to express their philosophy of music and education, (2) demonstrate a familiarity with contemporary educational thought, (3) apply a broad repertory to the learning problems of music students, and (4) demonstrate by example the concept of a comprehensive musician dedicated to teaching.

Similarly, Music Teacher Education: Partnership and Process (1987) lists personal criteria for preservice and inservice music educators which include: (1) demonstrating the development of a philosophy of music education; (2) showing an understanding of the development of personal relationships; (3) organizing and managing time effectively; (4) showing sensitivity to people of diverse interests, needs, and capabilities; and (5) self-evaluation of classroom organization, management, creativity, communication, and personal disposition.

Two studies in the research literature are important to any characterization of exemplary middle school general music teachers. These are Gerber's 1989 survey of approximately 1400 middle school general music students and Boswell's 1991
comparison study, both outlined in Chapter II. Their findings provide additional support for the two lists above.

Successful Middle School Music Teacher Traits: More Support

A comparison of all three types of evidence—articles, reports, and research—with the cases of the two exemplary middle school general music teachers, Mrs. Tanner and Mr. Ballenger, reveals that these two teachers share many of the traits suggested in these sources. Gerber's article summarizes the comparison; his first list is totally supported by the cases of Mrs. Tanner and Mr. Ballenger; the second list is supported with some exceptions.

The exceptions occur in points five and seven. Neither Mrs. Tanner nor Mr. Ballenger ever mentioned AM radio or MTV, and both seemed to take themselves very seriously. Two caveats: (1) Though neither mentioned her or his listening/viewing habits, this does not mean that they do not sometimes listen to AM radio or view MTV; (2) "take themselves seriously" is open to interpretation. Both use humor in their general music classrooms, are able to laugh at their own foibles during class, and apply carefully chosen sarcasm in interaction with students. They take their teaching seriously, and even refer to it as "work."

Gerber's lists of traits, from general literature and student vernacular, sets forth traits which were also exemplified by the two cases. In this instance, the two lists of teacher traits are
supported by two formally studied cases. The two cases and resultant theory hold implications for both preservice and inservice music teacher education.

Implications for Music Teacher Education

Most of the implications for practice are in the field of music teacher education. Teacher educators do look at undergraduate teacher education candidates' backgrounds and experience. Hearson's 1983 study supports a relationship between prior leadership activities and student teaching confidence. Prior experience with youth was not found to have such an impact upon confidence. Neither prior leadership experience nor experience with youth were significant factors by the conclusion of student teaching. Personality was a significant factor in indicating success in student teaching.

The cases of Mrs. Tanner and Mr. Ballenger show the effects of motivated, organized individuals at work in general music classrooms. The implication for music education is that individuals hoping to teach middle school music should possess certain personal characteristics as they enter the teacher education programs. Because certification requirements are often very general, the possession of such characteristics should be a requirement for for all music educators, regardless of applied area of specialization.
This implication has far-reaching effects. The adjudication of personal characteristics is subjective and relative at best. Music teacher educators examining personal characteristics would be well-advised to include in the music curriculum a course geared to the teaching of middle school general music. With broad certification requirements and fluctuating school budgets, preservice teachers are unlikely to spend their whole careers as strictly band, orchestra, or choir directors. Some teacher educators may wish to consider developing college coursework in general music which leads to a specialization in secondary general music teaching.

Any course geared to the middle school should include: (1) a study of middle school student characteristics, (2) an examination of usual patterns of organization in general music classes, (3) perusal of sample curricula, (4) scrutiny of available materials, (5) instruction on adaptation of material, (6) visitation to the classrooms of exemplary general music teachers, (7) chances to teach briefly in such classrooms, (8) reading of cases of general music teaching, and (9) training in exhibition of teacher intensity.

The latter facet of the course has been found to be an observable and trainable trait when considered in terms of "the attributes of enthusiasm combined with an astute sense of timing" (Madsen, Standley & Cassidy, 1989, 85). Teaching preservice teachers to maintain their students' attention through intensity should be part of any general music education course. Such
behaviors have been operationally defined (Yarbrough, 1975) and partially examined in the middle school general music context (Curtis, 1986).

Middle school general music methods courses organized around the nine points above would equip the preservice teacher with simple sources of content knowledge and materials, and concurrent knowledge of how to transform the material based on knowledge of students, particular contexts, and the teacher's own personal characteristics. Middle school general music methods courses should be taught by persons rich in sources of pedagogical-content knowledge arising from experiences associated with middle school general music teaching. That is, teacher educators, whether they are professors or cooperating teachers, should have an ability to "sequence learning activities, implement creative musical ideas, and account for the needs of learners" (Partnership and Process, 1987).

The cases of Mrs. Tanner and Mr. Ballenger provide abundant evidence of various mentors' influence on their respective practices. The use of mentors in the process of teacher education for preservice and beginning teachers is common in all content areas in education. The striking difference found between the cases studied and current mentoring practice was that few of the mentors noted by Mrs. Tanner and Mr. Ballenger were assigned to them as such. This is in part attributable to the fact that mentors were not an aspect of teacher education as Tanner
and Ballenger began teaching. Their multiple, often short-term mentors, grew from their own motivations to become better teachers and to seek persons who would help them do so. A review of mentoring literature by Galvez-Hjornevik (1986) supports the idea that mentor and protege dyads should be voluntary pairings of short duration.

A recent critical literature review on the mentoring process with undergraduates (Jacobi, 1991) serves to provide a foundation for further research by listing common definitions of mentors and suggestions for directions such research may take. Jacobi asserts that research in mentoring has not kept pace with program development. Kennedy (1991) questions whether mentors really help their proteges teach better. She maintains that new teachers, despite acquiring mentors, may teach as they were taught (see Zeichner & Tabachnick, 1981), and may lack the ability to examine their own practices critically. She also maintains that mentors assigned to new teachers may not have had training to be mentors, and may have such tacit knowledge of their own practice that they are unable articulate it or guide novices in doing so.

Music teacher educators would be advised to help preservice teachers by: (1) examining extant mentor programs; (2) searching applicable research on mentoring, e.g. Shulman & Colbert, 1987; Flowers & Codding, 1990; Shulman, 1991; and (3) guiding their students to choose mentors carefully. This help could be given to students by: (1) asking students to examine applicable cases in
music and general education in which mentors were influential, (2) asking students to compare their current mentors to those defined in the literature, and (3) asking students to project their own future mentoring needs based upon the first two assignments.

**Implications For Inservice Teacher Education**

Implications arising from this study for inservice activities and for persons planning such activities are straightforward. The most simple and direct implication is that middle school general music teachers would benefit from self-examination of their practices. They need to: (1) ask themselves questions like those used in the initial interviews with Mrs. Tanner and Mr. Ballenger [Appendix E] and be willing to be self-critical, (2) examine cases of music teaching, (3) attend workshops that will update their knowledge of learning theory and its potential applications, and (4) be action researchers in their own classrooms, e. g. to confirm or disconfirm both "theories-in-use and espoused theories" (Argyris, 1982).

Simple presentation of strategies in inservice workshops may contribute to repertoire of the general music teacher in terms of strategies and lesson plans, but may do little to address the long-term needs of teachers (Bennett, 1986). The source knowledge needed by inservice teachers seeking to improve their practices is more concurrent and complex than an afternoon of discrete "what works" lessons.
In summary, the implications arising from the two case studies are:

(1) All preservice music education students need coursework which applies known learning theory, known student characteristics, and probable contexts to the teaching of middle school music, specifically general music.

(2) Preservice teachers need to be guided in self-evaluation of their personal characteristics including ability to exhibit intensity, personal motivation, and organizational ability.

(3) Preservice teachers need practica specific to the middle school classroom as well as the rehearsal room.

(4) Inservice teachers may need to make themselves aware of parts of their practices which remain unknown to them (Argyris, 1982; McCutcheon, in press). These include their central themes, i.e. theories of practice. They need opportunities for rejuvenation of practice via observation of other teachers, specific coursework, and reflective self-evaluation.

Recommendations for Further Research

Writing case studies of any type requires substantial repetitive effort. Through continued research into the thinking and observable actions of middle school general music teachers music educators will be able to say more conclusively to the novice
teacher and the public, "These are the traits exhibited by the exemplary middle school general music teacher. This is what such people know. Here is how a person may go about becoming a fine general music teacher."

In addition to the need for replication and a building of cases, numerous other questions were raised in the course of this study. The researcher hopes that readers of this document may find some inspiration to undertake research based on these recommendations:

1. Research on factors affecting the visibility of the practice of secondary general music teachers is a needed adjunct to research on exemplary teachers' knowledge. As a part of such study, the researcher must take into special account the level of expertise of the teacher(s) as an impact upon visibility.

2. The sources and themes of exemplary teachers, and the traits they exhibit should eventually be contrasted with those of the non-exemplary teacher.

3. The influence of personality, individual motivation, and general organizational skills possessed by a general music teacher should be studied as to their impact on his or her practice.

4. Longitudinal study of exemplary general music teachers at varying stages in their careers should be undertaken to ascertain whether they exhibit similar central themes and employ similar processes for teaching at all stages of their careers. Important in such a study will be the effects of teaching context, further training, or mentor influences upon the practices examined.
5. The use of concept mapping for data gathering over the course of a longitudinal study of general music teachers is recommended.

6. Further definition and examination of teacher intensity should be undertaken, together with a feasibility study of teaching such skills to preservice teachers.

7. Investigation should be made as to whether there are differences in sources and themes of pedagogical-content knowledge between teachers trained specifically as general music teachers and those who teach general music, but primarily direct performing groups.

8. Further research into mentoring specific to music education is warranted, particularly as to how exemplary and non-exemplary teachers acquire mentors. Investigation as to length of contact with a mentor should also be examined.

9. Studies should be made pertaining to the extent of awareness of teaching practice that exemplary general music teachers possess. Comparison between the extent to which such teachers can articulate their themes and the extent to which non-exemplary teachers can do so could be one facet of such a study.

10. Repetition of case studies of the pedagogical-content knowledge of secondary general music teachers is necessary until a body of literature exists from which the profession of music education may generalize with probability about characteristics of exemplary (and other) general music teachers.

It is obvious that more research is necessary in the field of music education regarding the sources and development of teachers' pedagogical-content knowledge. In secondary general music, the lack of research is compounded by problems of
visibility of teachers' practices, perceptions of desirability of general music teaching positions, and paucity of specific training for such teaching.

Research in secondary general music will increase as researchers are willing to undertake it and as teachers are willing to be participants in the scrutiny of their practices. Qualitative methodology is only beginning to be applied to the study of music teachers; expanded application of such methodology will aid in creation and clarification of theory, as well as the raising of additional questions to be answered. Each facet of research undertaken will allow the music education profession to narrow the ever-present gaps between theory and practice, and thereby express with increasing certainty what exemplary music teachers do.
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APPENDIX A

Written Summary of Oral Instructions: Consent Protocol

I, ____________________, hereby authorize Edward B. Duling or James E. Major to investigate the following research question in my classroom: "The Development of Pedagogical-Content Knowledge: Two Case Studies of Exemplary General Music Teachers."

The purpose of this research is to investigate the development of my musical (content) knowledge and my pedagogical (teaching) knowledge as they are applied to instruction in general music in the middle school.

As a part of this research, I understand that I will be asked to respond to questions during an interview, and that I will be asked to relate my thoughts as they occurred during teaching as I watch videotapes of that teaching. I also understand that the instruction that I give in a unit in general music will be videotaped and erased after analysis. Audiotapes will be made during the interview and during the sessions recalling thoughts during teaching. These, too, will be erased. I will be asked to map my interpretation of several concepts about education twice during the study.

I understand the risks in this study to be minimal psychological stress possibly associated with delving into and analyzing my practice as a teacher, especially in considering underlying elements of my work that had been previously unknown to me.

Possible benefits for myself and society at large include additional insight into teacher thought processes, and creation of theories about how middle school general music teachers develop their pedagogical content knowledge. I understand that I may additionally gain knowledge about my own classroom practice. No guarantee has been given to me concerning this research.
The anticipated duration of my participation in this study is the length of one unit in my _____________ grade general music class. I anticipate this unit to be _____________ days in length. My time outside of class is estimated to be 10-15 hours, overall.

I hereby acknowledge that Edward B. Duling has provided me with additional detailed information about the investigation described above, about my rights as a subject, and that he has answered all of my questions to my satisfaction. I understand that I may contact him or the principal investigator, James E. Major, should I have any additional questions.

I understand that my participation will remain confidential.

I understand that I am free to withdraw my consent and participation in this study at any time without prejudice after notifying the researcher or the principal investigator.

I attest that Edward B. Duling has read the above information to me and that I understand it. I sign the space below freely and voluntarily. A copy has been given to me.

Date: ___/___/_______ Time __________

Signed ____________________________________________

(SUBJECT/participant)

Witness ____________________________________________

I certify that I have personally completed this form and that I have both read the above to the subject and furnished him/her with an additional outline and oral explanation of the study prior to asking for his/her signature above.

Signed ____________________________________________

(Principal Investigator's Representative)

Principal Investigator __________________________________

Dr. James E. Major
106B Hughes Hall
The Ohio State University
1899 N. College Road
Columbus, OH 43210
(614) 292-0455 or 7940
February 11, 1992

Dear Mr. ____________:

Through a several-step process which included your nomination by several colleagues, you were identified to me as an exemplary middle school general music teacher. I am writing to request your participation as one of two subjects in "The Development of Pedagogical-Content Knowledge: Two Case Studies of Exemplary General Music Teachers," my proposed doctoral dissertation at The Ohio State University.

I am a doctoral candidate in music education, and lecturer of music at ______________. My advisor and principal Investigator is Dr. James E. Major. My interests in teacher thinking have led me to begin preliminary investigation of how it is that exemplary general music teachers, particularly at the middle school level, have come to be exemplary. My investigation will be helpful to our profession as it will provide cases descriptive of the work of two exemplary persons, and how they have developed as teachers.

Your participation in this study will entail allowing me to videotape the lessons in a mutually agreed-to unit that you teach in one of your middle school general music classes, as well as allowing me to observe the class first hand for the duration of the unit. Your participation will also entail about 10 hours outside of school in the following activities: (1) a detailed structured, audiotaped interview with me about your background, experiences, education, perceptions in both knowledge of music content and knowledge of teaching practices; (2) construction of a concept map of several concepts related to teaching and education; (3) participation in three stimulated recall sessions [i.e.,
watching tapes of your teaching, with either one of us stopping the tape to ask questions, make comments, and have discussions about the thinking that you use as you teach, and why you do what you do]; and (4) various member checks [i.e., a process in which I check for accuracy of my understanding of remarks, and tentative conclusions against your perceptions of the same]. Absolutely no pressure will be brought to bear upon you if you decide against joining this study, or later decide to withdraw. The confidentiality and anonymity of both teachers chosen as subjects will be protected through several precautions which I will detail to you later. Because of this protection and the non-evaluative nature of the investigation, no information will be shared with administrators until the study is approved by the reading committee for submission to the Graduate School, or until a mutually agreed-to time between you and me.

Would you be willing to be one of the two subjects? I will phone you within a couple days and early in the evening as you requested. I am sorry to have bothered you Monday evening; I simply had old information. I will answer any questions that you may have. If you wish to contact me in the interim, I may be reached via ______ (H) or ________ or ________ (O). I will gladly provide vita and references upon request. Enclosed is a little background information on the approach that I am taking to this study.

I truly appreciate your reading this lengthy letter. I look forward to talking to you, giving you more specific details, answering questions, and setting up a time for detailed face-to-face explanation of the study, signing of forms, and selection of unit to be studied.

Sincerely,

Ed Dulir.g, Ph.D. Candidate
The Ohio State University

Dr. James E. Major, Chair, Music Education,
Principal Investigator
The Ohio State University
APPENDIX C

Investigator’s Checklist of Information
Needed by Case Study Subjects in Duling’s Dissertation

For use with "The Development of Pedagogical-Content Knowledge: Two Case Studies of Exemplary General Music Teachers"

This checklist is intended to guide the researcher in his attempt to fully inform the subjects in the above study of as many of the procedures, as many of the risks and benefits, and as much of the scheduled time needed as possible before the subjects sign the Consent Protocol. The checklist may also be of guidance to the researcher as he checks for available times to study the subject i.e. there is no benefit in gaining consent of a subject whose school schedule and the investigator’s schedule do not match for purposes of the study.

QUESTIONS WILL BE ANSWERED AS THEY ARISE DURING THIS BRIEFING.

1. Furnish subject with title of study and five questions as contained in Chapter I of the proposal.

2. Tell subject why you believe that this type of research is needed.
   - Need for examination of teacher thought vs. student outcome.
   - Need for cases from which to teach novices.
   - Need for establishing theories on how teachers develop knowledge of music and teaching.

3. Inform subject of possible risks involved.
   - Forms of risk
     - Stress resulting from:
       - Close examination of practice
       - Revelation of unknown theories of practice
       - Time needed for out-of-class meetings
       - Videotaping of unit taught
     - Risk involved in collaboration
4. Inform subject of possible benefits of study
   - To subject, personally
   - To music education profession, generally

5. Inquire as to possibilities for fitting above procedures into a unit the subject teaches, schedule-wise.
   - Initial interview-guide interview
   - Unit to videotape?
   - Consideration of scheduling stimulated recall sessions
   - Consideration of investigator’s current schedule
   - Times for checking with subject as analysis begins: i.e. member checks.

   - Nothing reported to administrators.
   - Subject known only to investigator and principal investigator.
   - Study is non-evaluative; nothing will be part of any of subject’s records.

7. Explanation of anonymity.
   - Tapes to be erased.
   - Pseudonym to be used for school, district and teacher/subject.
   - No revelation of name of subject unless mutually agreed upon at some later date as a benefit to the music education profession.

8. Right of subject.
   - To withdraw at any time
   - To be fully informed and ask questions
   - To have comments made "off the record" to investigator, or request to have prior comments stricken.

9. Explanation of audit trail
   - In qualitative research, certain data are kept as a "trail" leading back to the data sources from which the cases were written. These sources serve as depositories from which evidence can be shown to have been drawn in establishing themes and theories. Sources in this study are:
     - The anonymous transcripts for transcribed tapes
     - Investigator's notes
     - Investigator's journal
     - Concept maps made by subjects
     - Other data that may emerge as needed
- Narrative vignettes written from notes and observation
- Only pseudonym will be used in all of these to insure anonymity.

Ask for further questions.
February 25, 1992

____________________, Principal
____________________ Middle School
____________________
____________________

The purpose of this letter is to ask permission to conduct part of my dissertation research at ____________ Middle School. The title of the work is The Development of Pedagogical-Content Knowledge: Two Case Studies of Exemplary General Music Teachers. I have cleared the study with ______________ for possible use of a ______________ middle school general music teacher; a letter of introduction is attached. Following the general procedure for this type of research, the building administrator is contacted if there is interest in the study on the part of the subject.

In this case, I have asked ______________ to be one of the two subjects/participants in this study, and he has expressed interest in doing so. In order to conduct the research, I will need to (1) observe and videotape him as he teaches a general music class in a unit of study to which he and I will mutually agree, (2) interview him periodically, and (3) conduct several sessions of stimulated recall (viewing a tape of his teaching and stopping the tape to ask questions). I will not interfere with normal classroom activities in any way. His participation in the study is voluntary and may be withdrawn at any time.

The data gathered will be coded so the cooperating teacher and the school will be assured of anonymity. The anticipated duration of the study is three weeks from the start of the unit. With ______________ mutual consent, the bulk of interviewing and non-observatory activities will take place outside of school time.
For your information, I have attached a prospectus which I used in applying for a small grant at the university. If you have further questions about this study, please call me at home __________ or at the __________ campus __________. Thank you for your time and consideration.

Sincerely,

Ed Duling, Lecturer, Music Education, __________
Doctoral Candidate, Music Education
APPENDIX E

This interview is designed to gather data on expert secondary general music teachers' pedagogical-content knowledge.

I. Teachers's Background
   A. Content
      1. What were some of your childhood musical experiences?
         A. Lessons  D. Church
         B. Songs    E. More than 1
         C. Parents' instrument/voice
            playing or F. School
            singing    G. Other

         Comments:

      2. Think again about your childhood, youth, and young adulthood ... Describe events and experiences that increased your content knowledge of music.
         A. Lessons  D. Exposure to
         B. Independent music/listening
            work     E. Other
         C. Certain teacher/mentor

         Comments:

   B. Influences

      1. Was there anything or anyone in your elementary school experiences that may have influenced you to become a music teacher?
2. Jr. High/middle school?

3. High school?

4. College (any level)? Any changes in your musical focus (major inst., etc.) while in college?

5. Have you always wanted to be a general music teacher? When did you decide? Under what circumstances?

6. How did you view the realization that you wanted to be a music teacher?

7. What non-musical influences have affected your teaching?

II. Self-perceptions
   1. Do you consider yourself gifted? If so, in what way(s)?

   2. Do you view yourself as middle school general music specialist? Why or why not? Is answer to this question based on your lack of possession of some content knowledge?

   3. What, if anything, do you have in common with your middle school students?
III. Content Knowledge

1. What musical competencies should an eighth grader possess when he or she leaves eighth grade?

   A. Theory  
   B. History  
   C. Affectively  
   D. Criticism ("talk" (elements) about music)  
   E. Aesthetics  
   F. Cognitively

   Comments:

2. Referring to question #1, is this your ideal or does it reflect what you are able to accomplish in class?

3. How much of the content that you teach is based upon the materials you experienced in your own ...

   A. Jr. high years  
   B. High school  
   C. College years  
   D. Other years

   Comments:

4. Same as question #3, but substitute "way" for "content." (pedagogical question)

5. Describe the unit that I will be seeing and its impact in terms of musical content.
6. In addition to your teaching, what are some of the ways that you apply your knowledge of musical content?

A. Compose  C. Writing about music
B. Play/sing  D. Other

7. List the units that you teach in this class.

IV. Pedagogy and Teaching

1. What is musical aptitude to you? Have you ever identified it to your satisfaction in your students? Do you feel that you know the musical aptitudes of the students that you teach? Why or why not?

2. What activity, thought, exercise, or framework do you use to start you thinking about WHAT you’ll teach?

Why?

A. Objectives?  C. Past experiences?
B. Strategies?  D. Class itself?
E. Others

Comments:

3. What influence do the following have upon the way you plan and teach musical material?

A. SES  D. Prescribed objectives
B. Needs of students  E. Others
C. Attention span

Comments:
4. What guides your selection of musical content (material)?

A. Student need/ability  D. Materials available
B. Curricular documents  E. Objectives
C. Time available    F. Other

Comments:

Cross check between question #3 and #4.

5. Which and how do you use these strategies in actual teaching?

A. Demonstration  H. Humor
B. Examples   I. Discussion
C. Modeling  J. Student
D. Questioning presentations
E. Analogies  K. Guests
F. Discovery L. Other
G. Explanation M. Independent thinking
       on part of individual

Comments:

6. Do you think teaching music is different from other content areas? In what way(s)?

7. Do you provide your students with rationale for the units that you teach? Why?

8. Do you always teach a unit the same way—using same techniques, methods, materials? Why or why not?
9. How and when do you evaluate students?

A. Daily 
B. End of unit
C. Participation
D. Written work
E. Types of tests
F. Observations
G. During instruction
H. Other

Why?

10. Would you say that you follow any certain philosophy or methodology (e.g., Kodaly - Orff) in music teaching?

11. Tell me about your classroom management/discipline.

A. Any particular techniques
B. Self esteem building techniques
C. Other

Comments:

V. Reflection

1. Do you rethink lessons?

A. After the lesson?
B. Between presentations of the same lesson? (Effect on subsequent lessons)
C. During lessons?

Comments:

2. What process do you use to accomplish this? Can you define it?

3. Do you think that you teach as you were taught in general music? Why or why not?
4. Would you say that your task as a teacher is to communicate musical content to students or communicate music to students? To you, what musical metaphor or analogy would you give me that sums this up.

"Teaching general music is ..."

"Teaching general music is like ..."