Music Teacher Knowledge: An Examination of the Intersections Between
Instrumental Music Teaching and Conducting

by

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DEDICATION

To my bright light and constant source of inspiration and love:

my son, Zain Lloyd Forrester.

May you always approach life with curiosity, determination, courage,

and kindness towards yourself and others.

May you experience endless opportunities through education

and feel the inexplicable power and joy of music in the deepest part of your soul.

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"I am with you, you are with me, and we are always together…"

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ABSTRACT

Music Teacher Knowledge: An Examination of the Intersections between

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Sommer H. Forrester

The purpose of this study was to examine the complexities of instrumental music

teacher knowledge and explore how participants describe the intersections between

instrumental music teaching and conducting. The key research question guiding this

study was: How do high school instrumental music teachers describe the intersections

between instrumental music teaching and conducting? Sub questions include (a) What

key experiences do instrumental music teachers describe as being most meaningful to

their development as teachers and conductors? (b) Which aspects of practice do

instrumental music teachers perceive and describe as being related to the intersection

between instrumental music teaching and their development as conductors, and (c) What

dilemmas of practice (Ball, 1993; Lampert, 1981, 1985) do instrumental music teachers

perceive and describe as being related to the intersection between instrumental music

teaching and their development as conductors?

This study focused on the participants' ($N = 4$) perceptions and descriptions of the

intersections between instrumental music teaching and conducting. A multiple case study

design (Stake, 2006) was used to examine the commonalities across the cases, the unique

aspects of each case, and how the context and experience of each participant influenced

the phenomenon. Sources of data included: participant interviews (three per participant), one participant focus group, one observation of each of the participants conducting and teaching their high school ensembles, and two stimulated recall events with each participant using previously recorded conducting footage.

The central finding of this study suggests that the practice of instrumental music teaching demands a specialized form of knowledge that reflects the integration of, rather than the intersection between, both teaching and conducting. This specialized form of knowledge informs the participants' in-the-moment decision-making, judgments, decisions, and communication with students and the ensemble as a whole. The dilemmas of practice (Ball, 1993; Lampert, 1981, 1985) related to instrumental music teaching and conducting include the participants' ability to listen, assess, and respond to sound in the moment, and their ability to apply powerful lessons and experiences from mentor teachers and/or professional role models to their specific teaching context in ways that are authentic, flexible, pedagogically sound, and aesthetically relevant. The findings of this study suggest implications for music teacher education and conducting education, specifically in the areas of devising professional development opportunities that are systematic, multilevel, and multifaceted, and that mirror the integrated nature of teaching and conducting that occurs in practice.

Chapter I

INTRODUCTION

Personal Context

Throughout the various aspects of my career as an educator, I have observed colleagues, master teachers, conductors, and musicians with fascination and wonderment. How do they know what they know? What informs their knowledge? What struggles and dilemmas of practice (Ball, 1993; Lampert, 1981, 1985)—practical and pedagogical problems that are rooted in the everyday practice of teaching—do they grapple with, and how to they reconcile them? During my interactions with colleagues and preservice music education students, I have come to realize that I am not alone in my curiosities surrounding how people think, what informs their practice, and how they synthesize and transfer the various components of their musical and teacher knowledge and skills to their practice.

During my years as a classroom teacher, I attended several conducting symposia and workshops. My teacher colleagues and I would listen with great interest to the suggestions and information provided by from the mentor conductor. Typically, their overarching message focused on the pedagogical nature of teaching and conducting, or the *how* instead of the *what.* Suggestions for further consideration often included: how to communicate with the ensemble, how to connect with students, how to show compelling musicianship, and how to communicate musical intent rather than simply beating time.

Other sources of professional development, including professional music conferences and graduate school coursework, focused on developing sufficient knowledge and skills to understand the process learners go through in order to find understanding. The goal throughout all of these experiences was learning how to synthesize our knowledge from coursework, professional development, and experience and apply it to practice our teaching practice. Conversely, when I worked with preservice teachers, I observed and witnessed them struggle with *what* skills and knowledge they needed for practice, *how* to apply their understanding to approximations, and finally *what* and *how* to notice as they observed in-service teachers and professors' representations of practice. These experiences and curiosities have followed me throughout my practice as an instrumental music educator and conductor, and served as the motivation for a closer examination of the complexities of instrumental music teacher knowledge and the intersection between instrumental music teaching and conducting.

Teacher Knowledge and Practice

Educational scholars and practitioners agree that teaching is complex work that appears simple (Ball, 2000; Clark & Lampert, 1986; Dewey, 1904/1964; Freeman, 2002; Grossman, 1990, 2005; Grossman, Hammerness, & McDonald, 2009; Shulman, 1986; Shulman, 1987). The thought processes and judgments required to execute decisions and solve multifaceted problems in the moment require rational judgment and specialized knowledge. To untangle the complexities associated with teaching and teacher knowledge, it is necessary to uncover the qualities, understandings, competencies, abilities, and skills required for teaching and articulate the features that distinguish subject matter experts from educators (Ball, 2000; Grossman, 1990, 2005; Grossman et

al., 2009; Shulman, 1986; Shulman, 1987). Teacher knowledge encompasses but is not limited to, their ability to integrate information about students, subject matter, context, and professional matters. These components are connected to each other and often happen simultaneously. Educational researchers Shavelson and Stern (1981) contend: "…in order to understand teaching we must understand how [teacher] thoughts get carried into action" (p. 457).

Examining teacher knowledge and its relationship to practice is in itself challenging work. Fenstermacher (1994) posits that research on teacher knowledge must consider the epistemological character of what is known about teachers and their practice (p. 4). What knowledge do teachers claim to have and how do they know they have it? What do teachers know as a result of formal teacher education and experience? What is the nature of knowing that underlies the practice of teaching, content, pedagogical, and relational knowledge? Who produces this knowledge about teaching? (Fenstermacher, 1994). Researchers contend that this type of inquiry is difficult to conduct directly for three reasons: (i) knowledge is often held unconsciously; (ii) teacher cognition is contextual; (iii) there is a lack of specific language to describe cognitive function and action (Kagan, 1990; Lampert, 2000; Lortie, 1975).

Defining Teacher Knowledge

Teacher knowledge is multifaceted, due to the types of knowledge that are required for teaching. Teacher planning, decision-making, subject matter knowledge, and contextual knowledge are all extensions of teacher knowledge. There are many different conceptions of teacher knowledge. Kagan (1990) offers a broad definition that encompasses these domains: "[Teacher knowledge refers to] pre-or in-service teachers'

self-reflections, beliefs and knowledge about teaching, students, content, and awareness of problem-solving strategies endemic to classroom teaching" (p. 421). Verloop, Van Driel and Meijer (2001), stated: "It is important to realize that in the label 'teacher knowledge', the concept 'knowledge' is used as an overarching, inclusive concept, summarizing a large variety of cognitions, from conscious and well-balanced opinions to unconscious and unreflected intuitions" (p. 446). Clark and Lampert (1986) indicated that research on teacher knowledge has broadened and deepened the field's understanding about teaching in three areas: (i) knowledge about the complexities associated with teaching, (ii) knowledge about teacher cognition, and (iii) knowledge of methods of inquiry and reflection on teacher education (p. 27). Thus, researching teacher knowledge is not only important and challenging work; it is essential to our ability to inform in-service teachers' practice, develop effective policy, improve pre-service teacher education, and impact student learning in the classroom (Ball, 2000; Clark & Lampert, 1986; Lampert, 2000). Westerman (1991) echoed Clark and Lampert (1986) in stating that research on teacher cognition must focus on articulating *what* knowledge is required for practice along with *how* this knowledge is used in practice.

Conducting and Music Education

This investigation focuses on the application of teacher knowledge to the context of music education, or, specifically, the knowledge required for conducting a large ensemble in a high school instrumental music class. Typically, high school music teachers teach multiple ensembles at various levels of skill. In this capacity, they teach the music and the executive skills required to perform it, and lead the ensemble through gesture, which is referred to as conducting. Elizabeth Green's (1969) seminal text *The*

Modern Conductor describes the role of the conductor as someone who has the ability "to inspire…to train them (through one's own musicianship) to become a musician themselves… to feel the power of music so deeply that the audience is lifted to new heights emotionally" (p.1). Green's description of the role of the conductor combines the construct of both teacher and artist. One's ability to communicate through the gestural representation of conducting a musical composition requires a comprehensive and conceptual knowledge of the subject matter, a technical skill knowledge, and knowledge of learners and their characteristics (Green, 1969). The formulation of gesture, the ability to aurally analyze the performance of the ensemble, and the formulation of a mental representation of the musical score are tasks that are performed concurrently in the context of conducting. The combination of executing a physical skill (gesture), drawing on musical knowledge (theory, harmony, counterpoint, musical history, and form) to analyze what is heard, and responding to learners and their characteristics in the moment is demanding work. Eugene Ormandy describes the challenges associated with conducting:

> The art of conducting, one of the most complex and demanding activities in the realm of music, comprises both visual public performance and the constant application of technique. Although they are inseparable in performance, they can be analyzed in the light of the unique problems which each presents. (cited in Green, 1969, p. 251)

Rudolf (1994) highlighted the relational aspect required of conductors "…musicianship and thorough study of scores are of little help unless a conductor knows how to talk to people, work with them, and get results in a quick and direct manner" (p. 56). As Runnels (1992) noted, this task is multifaceted and is "not easily learned nor taught. The art itself is one of substantial complexity…The conductor must have a

knowledge base which is both broad and deep" (p. 3). Durrant (1994) grouped the skills needed for effective conducting into three broad categories: (i) Philosophical underpinnings and aesthetic sensitivity: preparation (knowledge of the voice/instrument, score study, performance practices, aural skills), rehearsal strategies, performance skills (refined gestural vocabulary); (ii) Technical and musical skills: mastery of technical skills, application of musical knowledge to guide physical gesture; and (iii) Personality behavior and communication skills: ability to communicate and work with others (p. 61).

In the context of high school music teaching and learning, conducting is a physical and embodied representation of the music teacher's knowledge of music and the score, and the needs of the students in the ensemble. For many high school instrumental music teachers, conducting is a part of their daily practice. Often, high school music teachers conduct many different kinds of ensembles during the school day including choir, orchestra, and band.

In order to understand how this specialized knowledge is used in practice, it is necessary to uncover what informs the development of this knowledge. For the purpose of this inquiry, I am interested in focusing on high school instrumental music teachers who teach and conduct in the context of band (winds and percussion). In order to understand how this specialized knowledge is used in practice, it is necessary to uncover what informs the development of this knowledge

Purpose Statement and Research Questions

The purpose of this study was to examine the complexities of instrumental music teacher knowledge and explore how participants describe the intersections between instrumental music teaching and conducting. The key research question guiding this

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study was: How do high school instrumental music teachers describe the intersections between instrumental music teaching and conducting? Sub questions include (a) What key experiences do instrumental music teachers describe as being most meaningful to their development as teachers and conductors? (b) Which aspects of practice do instrumental music teachers perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors, and (c) What dilemmas of practice (Ball, 1993; Lampert, 1981, 1985) do instrumental music teachers perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors?

Theoretical Framework: Teacher Knowledge

The next section of this chapter will examine the context and background of teacher knowledge frameworks in the general education literature. These frameworks will inform the nature of my inquiry surrounding teacher conductors' knowledge of conducting in the context of high school instrumental music classrooms and ensembles.

Historical context

At the turn of the twentieth century, educational philosopher and psychologist John Dewey (1904/1964) noted the fundamental tensions between theory and practice, specifically in the preparation of teachers. Dewey stated: "Scholastic knowledge is sometimes regarded as if it were something quite irrelevant to method. When this attitude is even unconsciously assumed, method becomes an external attachment to knowledge of subject matter" (p. 160). Despite Dewey's seminal writings, debates between scholars, practitioners, and policy makers continued through much of the twentieth century, and the dichotomous view of theory and practice posed challenges to teacher preparation and

evaluation. The 1980s marked an era of change and progress as policymakers began to move away from teacher evaluation policies that measured procedural knowledge alone and moved toward examining teacher effectiveness and teacher behavior through a process-product approach. This change marked a gradual move toward recognizing the connection between theory and practice and the implications for teaching and student learning (Shulman, 1986).

During this time, educational psychologist Shulman proposed a new approach to how teacher knowledge is viewed and understood. Shulman maintained that teacher knowledge is related to teaching, and that this relationship impacts research on teaching and teacher education. Moreover, he cited the limitations in merely assessing procedural knowledge and noted the inherent relationship between pedagogy, subject matter content, psychology, and philosophy. Shulman highlighted that, up until this time, the psychology of learning had focused solely on the learner, and not the teacher. Shulman stressed the need for a greater understanding of how content knowledge is formed and organized in the minds of teachers, thus, bridging theory and practice through a cognitive approach. Shulman developed a theoretical framework for content knowledge for teaching rooted in a cognitive approach that integrates psychology and philosophy and the transmission of content knowledge.

Pedagogical Content Knowledge

Building on the work of Dewey (1904/1964), Fenstermacher (1978), Green (1971), Scheffler (1965), Schwab (1983), and Smith (1980), Shulman sought to examine the complexities associated with teaching and teacher knowledge. Specifically, Shulman advocated the distinction between subject matter experts and educators and maintained

that teaching is a learned profession. He posed the question: "What do teachers need to know in order to teach effectively" (1986, p. 5). This seemingly straightforward question challenged policy and evaluation initiatives that measured competency and procedural knowledge through general observation methods.

Shulman noted the absence of subject matter in the study of teaching and teacher education and referred to this glaring omission as "the missing paradigm" (1986, p. 6). For Shulman, subject matter is the central aspect of classroom life and must be the starting point for investigations that examine the complexities of teaching and learning (Shulman, 1986). In order to determine how subject matter knowledge is transformed into instruction, Shulman (1986) asked: "What are the sources of analogies, metaphors, and explanations used in the process of teaching? How is knowledge transformed into instruction?" (p. 8). These questions continue to pose implications for teacher evaluation and teacher education, as Shulman noted: "How does learning *for* teaching occur?" (p. 8) How do teachers construct and develop the specialized knowledge required for professional practice?

Shulman's conception of teaching and teacher knowledge is grounded in the relationship between the transmission of knowledge and the development of student understanding. Teacher knowledge is guided and informed by the ongoing process of comprehension, reasoning, transformation, and reflection (1986, p. 13). Moreover, teacher knowledge is embodied by the teacher's ability to transform: "the content knowledge he or she possesses into forms that are pedagogically powerful and yet adaptive to the variations in ability and background presented by the students" (p. 15). This process highlights the reasoning, transformation, and reflective aspects of teaching -

all of which are constructed and linked to judgment and action on the part of the teacher and learner as an active process. In addition to subject matter, Shulman identified classroom context and students' prior knowledge and/or experience as critical features that contribute to teacher knowledge.

With content knowledge as the central figure, Shulman proposed four general domains of knowledge that exist within the content knowledge domain: (i) subject matter knowledge: substantive (how content is organized into facts) and syntactic (what are the truths and falsehoods) understanding of structure; (ii) pedagogical knowledge: knowledge of teaching; (iii) curricular knowledge: understanding the materials and alternatives for instruction; and (iv) knowledge of learners and their characteristics. Pedagogical content knowledge (PCK) is the amalgamation of these four domains and represents a specialized kind of knowledge that "intertwines content with aspects of teaching and learning" (Ball & Bass, 2002, p. 4). Shulman (1986, 1987) contends the knowledge base of teaching lies at the intersection of content and pedagogy. This teacher knowledge framework and the relationship between content knowledge, pedagogical knowledge, curricular knowledge, knowledge of learners and their characteristics, is visualized in Figure 1.

Shulman (1986) defined PCK as:

> …ways of representing and formulating the subject that make it comprehensible to others. Pedagogical content knowledge also includes an understanding of what makes the learning of specific topics easy or difficult; the conceptions and preconceptions that students of different ages and backgrounds bring with them to the learning of those most frequently taught topics and lessons. (Shulman, 1986, pp. 9-10)

Thus, PCK is a secondary form of content knowledge that goes beyond knowledge *about* a subject; rather, PCK refers to the knowledge *for teaching* the subject matter. This distinction is important as it supports the argument that teaching requires specialized

knowledge and that subject matter is central to teacher knowledge (Ball, 2000; Grossman, 1990, 2005; Grossman et al., 2009; Shulman, 1986; Shulman, 1987).
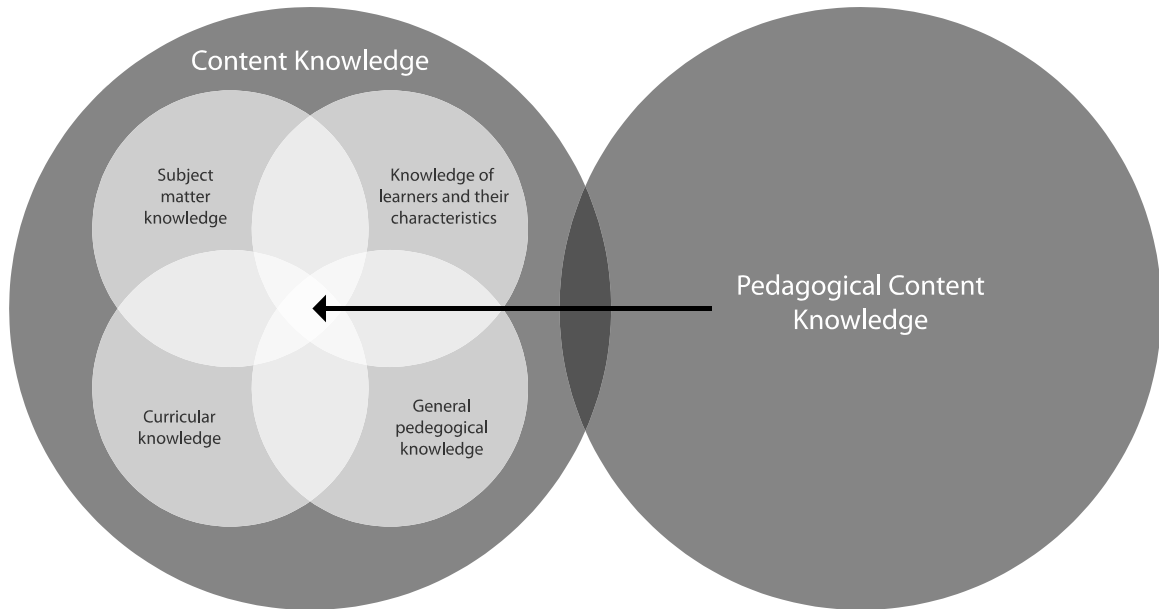
Figure 1. Visual representation of Shulman's (1987) teacher knowledge framework.

Growth and expansion of PCK in the 1990s: Pedagogical Content Knowing

Building on Shulman's work, Cochran, DeRuiter and King (1993) proposed an expanded view of pedagogical knowledge based on a constructivist view of teaching. In this view, Cochran et al., build on Shulman's assertion that knowing and understanding are active processes, and they place additional importance on teachers' knowledge about student learning and the context where learning occurs. From this viewpoint pedagogical knowledge is both a cognitive and meta-cognitive activity for the teacher.

The constructivist position offered by Cochran et al. (1993) is rooted in the writings of Piaget. The central premise contends: "knowledge is actively created by the

knower and not passively received" (p. 265); thus, how teachers and students construct their learning and knowledge is created rather than imparted or transferred. The process of teaching and learning is cyclical and dependent on the continuous integration of the teacher's and student's prior knowledge, experience, and worldview. Echoing Shulman, the authors contend that previous models of preparing and evaluating teachers focus solely on training, which is static, and the goal of teaching should be to generate autonomous conceptual understanding.

Expanding on Shulman's PCK framework, Cochran et al. (1993) added two additional components: teacher understanding of students and teacher is understanding of context (p. 266). In addition, they offer an expanded definition of PCK: *Pedagogical Content Knowing* (PCKg) (p. 266). PCKg is defined as: "a teacher's integrated understanding of four components of pedagogy, subject matter content, student characteristics, and the environmental context of learning" (p. 266). As such, knowledge is ongoing and continual, and teachers use their understanding to create strategies for student learning in specific contexts.

Cochran et al. (1993) contend the simultaneous integration between context and understanding poses implications for teacher education programs:

> …understanding is situated or context bound because social interactions are fundamental and inseparably bound to the development of the tools for thinking and understanding and how to use them…..learning must be situated in a context like the one in which these understandings are to be used. (p. 266)

Given the integrated nature of PCKg, the authors suggest this development must occur throughout the teacher education curriculum and connect to the P-12 classroom context, rather than taking place in a capstone seminar. They maintain PCKg is a challenge for education students and novice teachers because they lack the necessary framework and

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experience. In order to help pre-service and novice teachers realize and understand how students cultivate their own learning, the authors stress the importance of developing pre-service teachers' ability to interpret and reflect on their representations of practice.

Knowledge for Teaching

Following Shulman's call for a coherent theoretical framework for content knowledge for teaching, education researchers took up the charge within both theoretical and researched-based papers (Ball, 1990; Lampert, 1990; Leinhardt & Smith, 1985; Thompson & Thompson, 1994; Thompson & Thompson, 1996). In mathematics education, Thompson and Thompson expanded the PCK framework (Grossman, 1990, 2005; Grossman, Wilson & Shulman, 1989; Shulman, 1986, 1987) to explore the relationship between a teacher's content, pedagogical, and conceptual knowledge for teaching mathematics, and how this knowledge influences the decisions they make in the classroom. Thompson and Thompson (1996) stated:

> It is that teachers' images – the loose ensemble of actions, operations, and ways of thinking that come to mind unawarely of what they wish students to learn, and the language in which they have captured those images, play important roles in what teachers do, what they teach, and how they influence students' understanding. (p. 19)

Through their work and investigations surrounding teachers' conceptual knowledge for teaching mathematics, instruction, and student understanding, the authors coined the term *mathematical knowledge for teaching* (MKT) that is now used in place of PCK in the mathematics literature (Ball, 1998; Ball & Bass, 2000; Ball & Bass, 2003; Ball, Hill, & Bass, 2005; Ball, Sleep, Boerst, & Bass, 2009; Ball, Thames, & Phelps, 2008; Courtney, 2010; Silverman & Thompson, 2008; Thompson & Thompson, 1996).

Several researchers in mathematics education directed their focus to defining a structure of teacher knowledge in an attempt to identify a knowledge base for teaching mathematics (Ball, 1998; Ball & Bass, 2000; Ball & Bass, 2003; Ball, Hill, et al., 2005; Ball, et al., 2009; Ball, Thames, et al., 2008). Ball, Thames, et al. (2008) noted the need for a closer examination of how PCK is applied and explained that for nearly two decades, the term PCK had been widely used, yet the application and empirical foundation yielded few results because the term and concept are underspecified and theoretically scattered. Ball, Thames, et al. (2008) claimed that Shulman's broad terminology and generic claims about teacher knowledge, education, and policy made it difficult to distinguish between teacher action, reasoning, beliefs, and knowledge (Ball, 1998; Ball & Bass, 2000; Ball & Bass, 2003; Ball, Hill, et al., 2005; Ball, Thames, et al., 2008; Courtney, 2010; Silverman & Thompson, 2008; Thompson & Thompson, 1996).

Ball (2000) outlined an overarching assumption regarding teacher knowledge and the integration of subject matter knowledge and pedagogy: "We assume that the integration required to teach is simple and happens in the course of experience. In fact, however, this does not happen easily, and often, does not happen at all" (p. 242). In response, she offers three questions for consideration: (i) What do teachers need to know? (ii) How do they need to know it? (iii) How is this knowledge applied and used? (p. 244). Ball (2000) contends there needs to be a reordering of how content knowledge is approached and understood - going beyond identifying this knowledge and rooting the inquiry into practice first. Similar to Grossman (1990), Grossman and McDonald (2008), and Grossman et al. (2009) in English education, Ball et al. (2008) in math education asked: "What are the recurrent tasks and problems of teaching mathematics? What

knowledge, skills, and sensibilities are required to manage these tasks?" (p. 395). The

authors suggest that restructuring the usual approach would examine the common

challenges associated with the demands of teachers' work, while uncovering "…what

teachers need to know and what they need to be sensitive to regarding the content to

teach well" (p. 244). Hiebert et al. (2002) advocated a similar position in suggesting that

organizing knowledge around the problems of practice in the context where teaching and

learning takes place is an organic, connected, and collaborative process.

Ball (2000) challenges the assumption that knowing content will translate into the

capacity to use that knowledge in teaching and asks: "What do teachers need to know and

what insights are required to understand content material in practice?" (p. 244). Probing

these questions from the perspective of practice requires pre-service and novice teachers

to deconstruct their knowledge into constituent elements and understand how students

perceive intellectual concepts and problems in an unfinished state. Thus, knowledge for

teaching is dependent on the teacher's ability to understand someone else's perspective,

requiring them to see, hear, and think flexibly in the moment so they can respond to the

learner. This connects to PCK as it involves the merger between content and pedagogy;

however, Ball contends PCK falls short of connecting content and pedagogy to practice

(action). Rather than separating the demands of teaching into two domains: cognitive

(reasoning, decision making, and reflection) and action (behavior), Ball suggests that

knowledge for teaching integrates reasoning and knowing with action (Ball, 2000, p.

246).

Ball, Thames, et al. (2008) contend that the specific demands and tasks associated

with teaching require teachers to use subject matter knowledge in conjunction with skill,

habits of mind, and insight. This conceptualization of teacher knowledge focuses on how teaches use knowledge in practice. Ball et al. (2008) asked: "What do teachers need to know and be able to do in order to teach effectively?" (p. 394), thus placing the emphasis what teachers *do* and how this knowledge is used to carry out the work of teaching. The authors contend that by analyzing the specific tasks associated with teaching and the knowledge required to carry out these tasks, professional education can better help teachers learn the range of knowledge and skills needed for practice (Ball et al, 2008).

In order to bring clarity to Shulman's PCK framework, Ball, et al. (2008) offer a practice-based conceptualization of content knowledge for teaching that defines knowledge in broad terms and frames teacher knowledge in terms of its use and application in practice. The MKT framework subdivides Shulman's original content knowledge into two subdomains: Common Content Knowledge (CCK) and Specialized Content Knowledge (SCK), and PCK into two subdomains: Knowledge of Content and Students and Knowledge of Content and Teaching (see Figure 2). CCK refers to broad subject matter that is not unique to teaching such as, reading notation for a music teacher, whereas SCK refers to knowledge that is "not typically needed for purposes other than teaching" (Ball, Thames, et al., 2008, p. 400). When teachers offer explanations, clarifications, and lead students to develop fluency and apply their understanding of the subject matter, they are using SCK. This subdomain deals the knowledge required to carry out the tasks of teaching including both action and reasoning.
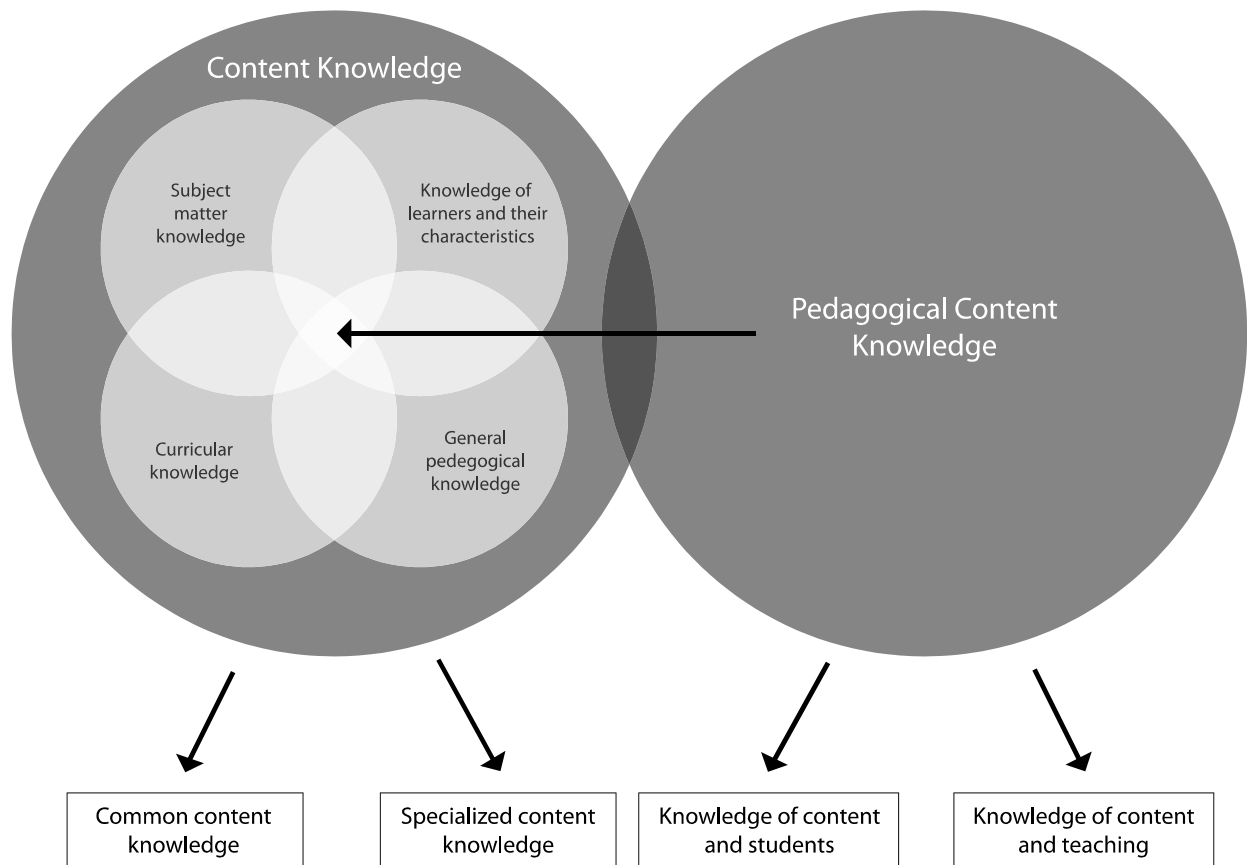
Figure 2. Visual representation of Ball et al. (2008) Mathematical Knowledge for Teaching framework

The third domain, knowledge of content and students (KCS), involves the knowledge required to anticipate and interpret students' thinking during the learning process. Recognizing a student mistake utilizes CCK, understanding the nature of a student mistake and how they arrived at their conclusion draws upon SCK, whereas knowing what students find challenging and understanding how to mediate these challenges utilizes KCS. Finally, knowledge of content and teaching (KCT) is the merger of content knowledge and pedagogical issues that impact student learning. Knowing

when and how to sequence content, which examples to use to further understanding, and which representations of practice to use, involves using KCT. Building on the work of Ball (2000), and Ball et al. (2008), Grossman and McDonald (2008) and Grossman et al. (2009) contend that pedagogies of enactment (approximations and representations) and core practices (subject specific questions, concerns, problems of practice) must be an integrated part of pre-service teacher education and must not be left to fieldwork experience alone. Grossman, et al. (2009) qualifies core practices that occur frequently in teaching as high-leverage practices. In addition, high-leverage practices allow novices to learn more about students and about teaching, preserve the integrity and complexity of teaching, as they are research-based with the potential to improve student achievement (Grossman et al., 2009, p. 274).

By focusing on core practices, Grossman et al. (2009) state: "teacher educators must attend to both the conceptual and practical aspects associated with any given practice" (p. 278). High-leverage practices are centered on student understanding; thus, they require novice teachers to "elicit student thinking during interactive teaching" (p. 280). Similar to Ball (2000) and Ball et al. (2008), Grossman (1990) maintains that teaching is complex work and not something individuals naturally develop on their own. Reimagining teacher education through pedagogies of enactment requires the intersection of content and pedagogical knowledge.

The ongoing research surrounding teaching knowledge in the general education literature highlights the multidimensional and complex nature of teacher knowledge. Moreover, this body of work reveals the need for continued investigations to further support and inform teacher education and professional development for in-service

teachers in subjects other than mathematics. While the nature of my inquiry on teacher conductor's knowledge will focus on the development and application of knowledge for practice, it is important to outline how the work in teacher knowledge has evolved and recognize the depth and breath of this topic. The next section in this chapter will address the role of conducting in the practice of music teaching.

The Role of Conducting in Music Teaching

Following World War II, teaching and learning instrumental conducting became an integral component of undergraduate music degree programs in the United States (Boardman, 2000; Manfredo, 2008). Prior to this time, the apprenticeship model of instruction was used to teach novices the art and skill of conducting. The proliferation of school music ensembles, the demand for school conductors, the codification of conducting techniques, and the shift in certification and professional requirements of music teachers led to a change in the instructional practices for music students at the collegiate level (Boardman, 2000; Labuta, 1965). In 1969, the National Association of Schools of Music (NASM) added conducting skills to the first content competency category for all undergraduate music students and indicated these skills are fundamental for music teachers to be successful (Boardman, 2000, p. 3).

The longstanding inclusion of conducting courses in the undergraduate music teacher preparation program remains a prominent component of the curriculum today (Baker, 1992; Boardman, 2000; Chapman, 2008; Durrant, 1994; Manfredo, 2008; Runnels, 1992; Powell, 2008; Silvey, 2011; Vallo, 1990). NASM indicates that one of the six standards for all professional undergraduates in music is: "Knowledge and skills sufficient to work as a leader and in collaborations on matters of musical interpretation.

Rehearsal and conducting skills are required as appropriate to the particular music concentration" (2012, p. 100). In the area of music education, the NASM handbook states that, in addition to the basic competencies required of all music students, the following guidelines apply to the preparation of music teachers:

> The prospective music teacher must be a competent conductor, able to create accurate and musically expressive performances with various types of performing groups and in general classroom situations. Instruction in conducting includes score reading and the integration of analysis, style, performance practice, instrumentation, and conducting techniques. Laboratory experiences that give the student opportunities to apply rehearsal techniques and procedures are essential. (p. 118)

Teachers in all subjects must interpret, respond to, revise instructions, and create opportunities that led students to understanding (Kim, 2013). In the context of instrumental music teaching and rehearsing the large ensemble, these tasks are realized while conducting. Spencer (2000) indicates the three different types of knowledge that encompass knowledge for conducting: formal knowledge, technical knowledge, and intuition. In order to understand the relationship between what teacher conductors know, how they know it, and what they do in the context of instruction (Hill, Ball, & Schilling, 2008), it is necessary to examine how these aspects of knowledge for conducting are acquired and applied in practice. The nature of this inquiry is further complicated by the temporal nature of sound and the non-verbal and embodied nature of hearing, interpreting, and responding in the moment.

Millican (2013) cites the lack of research in music education concerning music teacher thinking and pedagogical content knowledge. Moreover, Millican argues that understanding the subject matter of music alone is not sufficient for music teaching: "A high degree of subject matter knowledge or skill in a particular area does not guarantee

that a person will be successful conveying that knowledge of skill to others" (p. 45). This statement has implications for how teacher conductors use their knowledge in practice and the pedagogy surrounding how teachers learn, develop, and use this knowledge.

Currently, music teacher knowledge is an under researched area in music education. The body of empirical research on this topic in music education focuses on PCK (Ballantyne, 2006; Ballantyne & Packer, 2004; Chandler, 2012; Gohlke, 1994; Haston & Leon-Guerrero, 2008; Millican, 2008, 2013, 2014; Venesile, 2010), which as Ball (2000) noted, has limitations. The current body of research indicates that pre- and in-service music teachers have conflicting viewpoints surrounding the knowledge and skills required for effective practice, which further supports the need for continued research that is grounded in the context of practice (Bauer, 2007; Bowles, 2002; Bush, 2007; Conway, Albert, Hibbard, & Hourigan, 2005; Conway, 2008; Friedrichs, 2001; Rohwer & Henry, 2004; Teachout, 1997). In addition, research pertaining to the intersections between conducting pedagogy, teaching, and learning is limited. Past research indicates continued work in these areas is needed to develop a greater understanding of the needs of conducting students and practitioners (Boardman, 2000; Byo & Austin 1994; DeCarbo, 1982; Gallops, 2005; House, 1998; Johnston, 1993; Laib, 1993; Lindhal, 2010; Mayne 1992; Roebke, 2005; Romines, 2000; Runnels, 1992; Silvey, 2011; Silvey, 2014; Sheldon, 1998; Sidoti, 1990; Sousa, 1998; Yarbrough, 1976, 1978, 1987; Yarbrough, Wapnick, & Kelly, 1979).

Definitions of Terms

For the purpose of this investigation, these terms will be defined as follows:

Approximations of practice: Opportunities for novice teachers to engage in practices that are proximal, i.e., situated close to, the profession of teaching and learning (Grossman, Compton, Igra, Ronfeldt, Shahan, & Williamson, 2009).

Conducting: The embodied and physical act of communicating and representing musical content nonverbally through gesture (Baker, 1992; Green, 1961, 1969).

Conducting knowledge: The cognitive activities required for conducting, including: kinesthetic skill (gestural technique, physical awareness and use of the body to show gesture), conceptual knowledge and understanding of music, decision-making processes, listening ability and skill, knowledge of learners, and rehearsal strategies (Green, 1961, 1969; Powell, 2008).

Dilemmas of practice: Practical and pedagogical problems and challenges that are rooted in the everyday practice of teaching. Progress in resolving dilemmas of practice is made through examining the psychological and sociological perspectives of teaching and learning (Ball, 1993; Lampert, 1981; Lampert, 1985).

High leverage practices: Core practices that require professional knowledge and skill that are enacted in practice. These practices occur with high frequency, preserve the integrity and complexity of teaching, are researched-based, and have the potential to improve student learning and achievement (Grossman, Hammerness & McDonald, 2009).

Large ensemble: For the purpose of this investigation, the term "large ensemble" will refer to an instrumental music ensemble that is comprised of wind, brass, and percussion players.

Representations of practice: Ways that practice is represented in professional education and made visible to novice teachers (Grossman, Compton, Igra, Ronfeldt, Shahan & Williamson, 2009).

Teacher knowledge: The decision-making processes, subject matter knowledge, and contextual knowledge of students and the classroom context required for the practice of teaching (Ball, 2000; Clandinin, 1985; Clark & Lampert, 1986; Grossman, 1990, 2005; Grossman et al., 2009; Shulman, 1986, 1987).

Conclusion

Using a qualitative design, this study investigated the complexities of instrumental music teacher knowledge and explored how participants described the intersections between instrumental music teaching and conducting. The practice of teaching and learning is complex work (Ball, 2000; Clark & Lampert, 1986; Dewey, 1904/1964; Freeman, 2002; Grossman, 1990, 2005; Grossman, Hammerness, & McDonald, 2009; Shulman, 1986; Shulman, 1987). Instrumental music teachers are faced with the additional challenge of developing their knowledge and skill for conducting a large ensemble and applying it in their everyday teaching. The goal of this investigation is to better understand and describe the complex nature of knowledge for conducting and contribute to the ongoing research in music education surrounding teacher knowledge. Chapter II will review in detail the related literature that pertains to this investigation and the need for continued research in this area of study.

Chapter II

REVIEW OF LITERATURE

The purpose of this study was to examine the complexities of instrumental music teacher knowledge and explore how participants describe the intersections between instrumental music teaching and conducting. This chapter will situate the current study within the broader domains of related literature: teacher knowledge, music teacher knowledge, and the teaching and learning of conducting.

The teacher knowledge section will begin with an exploration of how mathematics educators research the application of the Mathematical Knowledge for Teaching framework in teacher education programs. Following this discussion, I will focus on the application of the Pedagogical Content Knowledge framework in music education. In the second section, I will review the literature surrounding music teacher development that addresses the knowledge and skills preservice and in-service teachers deem is essential for practice. I will conclude the second section with an examination of literature that pertains to professional development for in-service music teachers. The third and final section of this chapter will examine the literature related to the teaching and learning of conducting, including conducting pedagogy, evaluation and assessment strategies for teaching and learning conducting, and continued studies in conducting for

in-service teachers. It is hoped that this review of literature will inform the current investigation into development of instrumental music teachers' knowledge for conducting a large ensemble.

Teacher Knowledge

Shulman's 1985 presidential address to the American Educational Research Association (1996) proposed that teachers have subject matter knowledge that is important to their work. Since this address and the introduction of the PCK framework, mathematics educators have furthered Shulman's initial conception and contend that subject matter knowledge for teaching goes beyond the facts, concepts, and procedures for practice and includes knowledge about what teachers need to know, how they need to know it, and how it applies to practice (Ball, 1998; Ball & Bass, 2000; Ball & Bass, 2003; Ball, Hill, et al., 2005; Ball & Lampert, 1999, Ball, Sleep, et al., 2009; Ball, Thames, et al., 2008; Courtney, 2010; Lampert, 1990, 2001; Silverman & Thompson, 2008; Thompson & Thompson, 1996; Zopf, 2010).

The development of PCK and teacher knowledge framework has been reviewed in Chapter I. Here, I will narrow my focus to reviewing a particular approach to subject matter knowledge that is utilized in mathematics education. Although researchers have investigated issues relevant to teacher knowledge in multiple domains including science and English education, the research base in mathematics is particularly comprehensive and detailed. The research trajectory surrounding the Mathematical Knowledge for Teaching Framework (MKT) includes studies that examine MKT and student achievement (Burke, 2013) and the development of MKT within professional learning communities (Harmon, 2011; Lamb, 2010; Oleson, 2010). For the present investigation, I

chose to review in detail studies that examined the development and use of MKT in teacher education programs for preservice teachers (Kim, 2013; van den Kieboom, 2008), and teacher educators and in-service teachers (Zopf, 2010).

The Development and Use of the MKT Framework

Preservice teachers. A study by van den Kieboom (2008) investigated preservice elementary and middle school teachers' (N = 24) development and use of MKT for teaching fractions in the context of an integrated methods and fieldwork course. The objective of the study was to use the MKT framework and explore the research questions: (a) How do preservice teachers develop MKT in a mathematics content course? (b) How do preservice teachers use MKT to inform beginning teachers practice in a field experience? and (c) What do preservice teachers learn as they use MKT in field experience? (p. 12) Qualitative data sources included video and audio recordings of the methods course and preservice teachers working with students in field experiences, semi-structured interviews, reflective journals, and researcher field journal. Participants completed a pre- and post-test of the Content Knowledge For Teaching Mathematics (CKT-M) assessment to assess and measure the growth of MKT.

Based on the data, van den Kieboom reported participants developed MKT through a daily pattern of interacting with a mathematics education expert who served as a mentor and coach, small group work, and whole group work. According to the findings, MKT was developed through a combination of the participant's involvement in a community of practice (Lave, 1991) and the use of reasoning and communication. Participants demonstrated their understanding of MKT through the decisions and actions they performed for teaching students about fractions. Participants reported that using

MKT in field experiences afforded them the opportunity to learn how to use

representations of practice and develop their voice as teachers. van den Kieboom stated:

> In order for preservice teachers to develop and use mathematical knowledge for teaching they must engage in explicit instruction and direct experiences in identifying and defining what mathematical knowledge for teaching is and how it is used in the elementary mathematics classroom to inform decisions with students. (p. 400)

The recommendations from this study called for continued work in the areas of clarifying

the terminology surrounding knowledge for teaching, developing strategies to assist

teachers in applying MKT, and continued investigations of how MKT is applied in

practice (Ball, Sleep, et al., 2009; Grossman & McDonald, 2008).

Kim (2013) examined the tasks and challenges surrounding how teacher educators

approach MKT with preservice teachers, and how to organize the preservice curriculum

for teaching MKT. Kim stated:

> To do this, teachers must have opportunities to examine and unpack mathematics in order to articulate the task of instruction, understand students' ideas, and steer the instruction. They must also have practice to develop mathematical sense and reasoning for wise in-the-moment decision in the practice of teaching mathematics. (p. 7)

Kim analyzed curricular materials to determine what is taught in preservice math

education classes and the challenges associated with teaching MKT. Theoretical

sampling of nine teacher educators with diverse teaching backgrounds were used. Data

sources from 25 classes where MKT was taught included: curricular materials and video

recordings of teachers' practice from 2007-2010. Video recordings of teacher educators'

practice allowed the researcher to actively observe, describe, and analyze what teacher

educators *do* rather than *what* they know.

Based on the data, Kim offered a framework for teaching MKT and indicated the relationship between the tasks and knowledge for practice occurs simultaneously during the enactment of teaching. Based on findings, Kim indicated the tasks of articulating, decomposing, and rehearsing aspects of MKT requires clarity of thought and a systematic approach. Furthermore, Kim reinforced the work of van den Kieboom (2008) and stated a shared taxonomy of language and practice is necessary for teaching MKT (Ball, Sleep, et al., 2009; Grossman and McDonald, 2008).

Teacher educators and in-service teachers. Zopf (2010) investigated the key tasks associated with teaching mathematical knowledge for teaching teachers (MKTT) and the knowledge demands entailed by this work. The focus of the inquiry was the work of teacher educators, specifically, the subject matter knowledge sub-domains of the MKT construct. Zopf stated:

> As student teachers develop into teachers, their knowledge about mathematics evolves from the way students know mathematics for their own use to the way teachers know mathematics for teaching children….Although teachers' mathematical knowledge for teaching depends on the knowledge they learned as students, it is a more fundamental, connected, and extensive knowledge necessary for teaching. (p. 12-13).

Using a cross case analysis, the researcher compared elements that were consistent across the four cases of math teacher educators as they planned, taught, debriefed lessons. Each of the participants had experience teaching preservice and in-service teachers and represented different disciplinary backgrounds. The researcher investigated the nature of their work, knowledge that is distinctive to their work as teacher educators, and the existence of MKT. The findings across the cases revealed that mathematical ideas were developed systematically and always began with the knowledge of the task. Pedagogical approaches to instruction included: directed, lecture-style

teaching, and interactive teaching including small group and opportunities for

conversations about mathematics. In all of these pedagogical approaches, the teacher

educator supported understanding, dispelled misconceptions, probed, questioned, and

reinforced student teacher's thinking. Based on the findings, Zopf concluded MKTT is a

detailed process that involves decompressing existing knowledge for the work of

teaching children, addressing misconceptions and errors, and unpacking student teachers'

compressed knowledge of school mathematics (pp. 184-185). The strategies employed by

the teacher educators included making MKT visible to the student teachers, connecting

concepts, and using focused language through a disciplined and systematic approach.

   While the application and expansion of PCK in general and mathematics

education in particular has emerged and evolved since 1986, comparatively, the

utilization of this framework has been limited in music education (Chandler, 2012;

Millican, 2008, 2013, 2014). At this time, an expanded framework such as MKT does not

exist in music education; thus, the following review of the music education literature is

grounded in the PCK framework. Burnard (2013), a music education researcher, noted

the need for a systematic investigation into what music teachers need to know, how they

need to know it, and how they apply their knowledge and skills to the practice of teaching

music:

> The professional significance of music and music teacher education is concerned
> with *professional knowledge* and *knowledge specialization,* and questions of what
> constitutes *pedagogical content knowledge and skills;* how this knowledge grows;
> and what this means for the way in which teachers (and their students) learn and
> why they change (or do not change), what motivates them, and what factors help
> or hinder their development. (p. 2)

The review of literature on PCK in music teacher education will be presented

chronologically.

Pedagogical Content Knowledge in Music Teacher Education

Duling (1992) claimed that "[l]ittle 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?" (p. 11) Using a descriptive, naturalistic case study with a qualitative design, Duling captured the emic view of the teacher: before, during and after planning, teaching, and reflective thinking about the content and pedagogical application of their lesson through the Shulman Model of Pedagogical Reasoning and Action.

Participants included two middle school general music teachers teaching in two different contexts: a small city and a large urban setting (p. 48). Chain sampling was used to determine participants who fit the category of an "exemplary" general music teacher. Data sources included: structured and informal interviews between the researcher and the participant, researcher observations of the participants, researcher field notes, participant concept (cognitive) maps, stimulated recall, and artifacts. Based on the data, Duling compared the teaching practices of the participants to reveal similarities and differences in sources and applications of pedagogical content knowledge. The findings revealed more similarities than differences between the two participants. A summary of similar factors in common between the participants included: the presence of social mediation into pedagogical content knowledge, the impact of mentor contributions on their sources of content and pedagogical knowledge, strong content knowledge, an organized set of beliefs and knowledge about student characteristics, comprehensive awareness that extended beyond the classroom into the community, and the participants' ability to reflect

on their practice and incorporate student feedback into the planning and execution of future lessons.

Based on the findings, Duling indicated a need for the following: (1) instruction at the preservice level that addresses learning theories, student characteristics, and probable contexts that may arise in teaching music; (2) guiding preservice through self-evaluation in their ability to exhibit personal motivation, and organizational ability; (3) providing preservice teachers with fieldwork experience; (4) providing in-service teachers opportunities to rejuvenate their practice vis-à-vis observation of their colleagues and reflective self-evaluation. Recommendations for future research include a closer examination of the sources and development of teachers' pedagogical knowledge in all levels of music teacher practice.

A study by Gohlke (1994) examined eight preservice teachers' acquisition and development of pedagogical content knowledge in a music methods course. Of the eight participants, four were selected for further examination based on their previous experience and future teaching goals. Using a quasi-ethnographic design and cross-case comparison, two categories were considered: "orientation toward subject matter (music), and disposition toward teaching elementary music" (p. 38). This design allowed for a closer investigation of the participants progression of beliefs about music instruction in elementary schools at the beginning, middle, and end of a methods course. Research questions included:

(1) How do preservice music teachers learn to make pedagogical and curricular decisions?
(2) What is the source of this knowledge?
(3) What effect does a methods course and previous experience in music, teaching, and observing of instruction have on these decisions?

(4) How is this knowledge organized and utilized by preservice music teachers?
   (p. 9)

Data sources included: individual interviews, researcher observation of the participants'
methods courses, artifacts, and interviews with faculty members. The findings were based
on the data from the four purposefully selected participants. Based on the findings,
Gohlke concluded that pedagogical content knowledge was influenced by the
participants' previous experience, apprenticeship of observation, and performance
orientation as instrumentalists or singers. Gohlke stated: "[the participants] decision-
making process resembled Shulman's (1987) model of pedagogical reasoning in action as
they considered the purpose for teaching a song, concept, or skill, and then generated
ideas that transformed the subject matter" (p. 182). This knowledge assisted in the
participants' ability to devise a lesson plan and execute curricular decisions. Relevant to
the field of music education, Gohlke found that the preservice methods course did not
greatly affect the participants' development of knowledge surrounding what to teach, and
how to teach it. Gohlke stated: "This absence of content and pedagogy is undoubtedly the
greatest weakness of the methods course" (p. 182). Citing empirical literature from
general education, Gohlke advocated that: "the development of pedagogical content
knowledge requires conceptually integrated instruction (p. 184)" and recommended that
future research in music education focus on the development of knowledge base from the
initial methods coursework through student teaching and the first year of teaching.

Similar to Gohlke, Snow (1998) was interested in examining how preservice
music education students develop PCK. In addition, Snow was curious about the
connection between students' musical and emerging teacher knowledge and how this
impacts their planning processes and approach to rehearsals. Participants included six

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junior-level undergraduate choral music education students enrolled in a choral methods course at a large mid-western university. During the pilot, Snow and the class participants co-created a visual model of teacher planning that resembled a brainstorming inventory. Snow explained that the brainstorming model "emphasizes linking personal understanding about a musical score to development of teaching strategies to carry out teacher decisions about the work" (p. 5).

Snow acted as a teacher-researcher through the 15-week study; as such, her observations of the class and the participants were formulated through researcher observations and documented through a narrative voice. Using a formative research framework through a qualitative inquiry, drawing on Bresler (1994), Snow stated:

> …the research is applied and concerned with improvement of teaching, it is interactive and involves student perception and experience, and it contributes to practice in such a way that others can interpret for themselves the applicability to their own teaching circumstances. (p. 10)

Data collection in the qualitative design included: 1) written teaching plans; 2) video footage of student conducting; 3) teacher/research field notes; and 4) student assignments. Snow treated each participant as an individual case and analyzed the data within each case separately, followed by a cross case analysis. This double analysis served as a means to capture the breadth and depth of the participants' experience.

Based on the data, the findings revealed that using the visual model allowed participants to cultivate, imagine, and reinforce "expert-like mindset[s] in which novices take on the learning orientations of the experts" (p. 203). Moreover, the participants' thinking represented in the visual model showed a bridge between musical and pedagogical knowledge. Over time, the use of this alternative model yielded changes in students' representation of thinking. These changes included: increased breadth, depth,

and fluency, improved sequencing and expanded teaching strategies. Based on the data, Snow indicated that pedagogical content knowledge was internally conceived rather than externally imposed through isolated curricular tasks. The findings also revealed that the participants' perceptions of the role of the conductor changed as a result of the alterative approach to rehearsal planning. Over time, the focus of their planning shifted from teacher-directed instructions toward student-directed teaching strategies. Implications based on the findings include future research surrounding interactive teaching, the role of improvisation in approximations of teaching, and assessment and evaluation in action research.

Ballantyne and Packer (2004) stated: "The quality of teaching in schools is directly linked to the quality of preservice preparation that teachers receive" (p. 300). Based on this assertion, their investigation focused on the knowledge and skills early-career music teachers report as being necessary for effective practice, and their perceptions surrounding the effectiveness of current music teacher education programs in Queensland, Australia. Typically, music education graduates in Queensland attend a full-time, 4 year program that is divide into two areas of focus: 2 years of content studies [music] and 2 years of general studies in education. Participants included 136 recent graduates from the three largest music teacher education programs in Queensland. All of participants were early-career music teachers who graduated in the years 1998 to mid-2002. The findings of this study report data from four questions that were taken from a larger questionnaire. The twenty-four item questionnaire was based on Shulman (1987) and Leong's (1996) categories of knowledge and competencies required for classroom teachers: (1) *Music knowledge and skills* (performance skills, conducting, composition,

aural skills, and music history knowledge); (2) *Pedagogical content knowledge and skills* (knowledge of music teaching techniques, implementation of curriculum, student engagement through music, assessing students' musical abilities, and demonstrating musical concepts); (3) *General pedagogical knowledge and skills* (knowledge of learners and their characteristic, effective planning skills, utilization of instructional strategies); (4) *Non-pedagogical professional knowledge and skills* (organizing extra-curricular activities, managing a budget, communications with staff, students, and parents) (p. 302). Participants rated the importance of each teacher knowledge and/or skill, and then rated the effectiveness of their teacher education program in fostering this knowledge and/or skill. Factor analysis and importance-performance analysis (IPA) were used to evaluate the responses. The data revealed a marked different between what the participants' perceived as being important knowledge and skills required for effective teaching and the preparation they received in these areas during their preservice education. Only 12% of the participants considered their preservice preparation as being 'definitely relevant' (p. 303).

Ballantyne (2006) reported on the second stage of the early-year music teacher study. The focus of this investigation was the perceptions of early-career music teachers (N = 15) regarding the effectiveness of their preservice preparation. The second stage involved qualitative data in the form of interviews with 15 of the 136 participants from the larger scale study (Ballantyne and Packer, 2004). The interview questions were formulated based on the analysis from the quantitative data. These questions included:

> (1) What impact has your university course had on your experiences in your first few years at school?
> (2) What experiences have you had that built on the knowledge and skills that you gained from your university course?

(3) What experiences have you had that you were not well prepared for?
(4) Describe your ideal teacher education preparation.
(5) What recommendations do you have to improve the preservice courses?
(p. 39)

Based on the data from Ballantyne and Packer (2004) and Ballantyne (2006) participants expressed a lack of preparedness, particularly in the area of pedagogical content knowledge, skills, and non-pedagogical professional knowledge and skills. Moreover, participants in the 2006 study indicated a greater need for the 'application' and 'contextualization' of knowledge and skills. The findings of the 2004 and 2006 study stress that teacher education programs need to place a greater emphasis and support on these areas in the preservice curriculum, specifically, by providing preservice teachers with course offerings that focus on both pedagogical content knowledge and skills and professional knowledge and skills. Calls for further and in-depth research in examining the relationship between preservice instruction, preparation, and application in the field are suggested.

A qualitative case study by Haston and Leon-Guerrero (2008) examined the factors that influence the acquisition of PCK in preservice instrumental music teachers. Participants included six preservice teachers engaged in student teaching. The participants attended the same university and had successfully completed a three-semester methods sequence in a music teacher education program. For the purpose of the study, each participant designed, implemented, and recorded their teaching of a lesson. The researchers reviewed the video footage to identify instances of PCK and discussed their observations with the participants during individual interviews. In order to determine the goals of the lesson, the research questions and researcher-identified

instances of PCK were compared with the participants' intended instructional goals. In all

cases, the researcher-defined PCK and preservice intentions matched. In order to connect

the intention and approximation of practice in the moment of teaching, the researchers

and participants viewed the video footage together and stopped the clip to deconstruct

what they observed. Questions during this interaction included:

(1) Why did you stop the rehearsal, or what were you trying to
accomplish?
(2) Do you recall where you learned that pedagogical technique?
(p. 53)

The responses were coded into the categories: intuition, apprenticeship of observation,

methods courses, co-operating teacher, and other. The data did not reveal a predominant,

singular source of PCK. Moreover, one of the participants cited methods courses and

intuition as having equal influence on their source of PCK. This finding contradicts those

of Ballantyne and Packer (2004), Ballantyne (2006), and Gohlke (1994). The findings

indicated the need to consider the variable of context when determining the perceived

sources and influences of PCK and stress the need for further investigation in the

development and revision of methods course curricula.

Although many of the studies on music teacher education have focused on models

put forth by Shulman, Millican (2008) modified Shulman's (1987) teacher knowledge

and skills framework and added administrative knowledge to Shulman's categories.

Millican investigated secondary school band and orchestra teachers' perceptions of the

knowledge and skills required for teaching music. For the purpose of this study, using a

random sample, 214 band and orchestra public school teachers in the United States

completed a web-based survey. A paired comparison model was used and participants

were asked to rank each item in comparison the others, one at a time. In addition to the

survey, respondents were asked to provide information about their teaching assignment and educational background. This data set was used to analyze the potential relationship between the variables and the individual ranking of knowledge and skills; however the analysis revealed no significant relationship between the participants' rankings and their teaching assignment and/or educational background. Similar to the findings of Ballantyne and Packer (2004), participants ranked PCK as the highest category out of the seven. Content knowledge and pedagogical knowledge were ranked higher than the other four categories. Administrative knowledge and knowledge of educational contexts were ranked the lowest out of the seven.

Venesile (2010) examined vocal jazz educators' ability to identify and describe the forms of pedagogical skills required in their field. In addition, a secondary purpose of the study, Vensile examined the role of professional development in vocal jazz educators' ability to acquire and develop PCK. Venesile indicated that vocal jazz is a specialized subcategory within vocal music. While in-service vocal music teachers expressed an interest incorporating jazz into the curriculum, many lacked an understanding of the specialized knowledge and skills required for teaching; moreover, they lacked experience from their undergraduate music education in this area (p. 3). Purposeful sampling was used to generate the participant population ($N = 351$) from The National Association for Music Education (now NA*f*ME) member database of music educators who indicated that they teach secondary and/or post-secondary vocal music and jazz. Additionally, participants ($N = 271$) from the International Association for Jazz Education (IAJE) were included in the sample. Ninety-three respondents completed an online survey that addressed the importance of music content knowledge and pedagogical skill. In addition

to the quantitative data, open-ended questions were used to generate qualitative data pertaining to the participants' perceptions surrounding professional development and professional challenges. In addition, participants were asked to indicate their gender, ethnicity, education, teaching experience and location, primary instruments, and vocal jazz ensemble experience. The results revealed that participants acquired the specific vocal jazz content knowledge from listening to live and/or recorded jazz and not from their traditional undergraduate music education curriculum. In the case of PCK, the findings support Haston and Leon-Guerrero (2008), as the data did not reveal a predominant, singular source of where participants acquire PCK. Venesile advocated for implementing content and pedagogical knowledge earlier in the preservice curriculum as participants who had preservice experience in vocal jazz expressed: "positive statements about their preparedness to teach it" (p. 133). In addition, Venesile called for further implementation of content and pedagogical knowledge in professional development.

Citing the scarcity of PCK in the music teacher education literature, Chandler (2012) indicated the need for a: "systematically derived understanding of how music teacher knowledge and skill (encompassing PCK) might best be conceptualized, how it develops as part of preservice coursework and clinical experience, and the role of music teaching education faculty in promoting this development" (p. 20). Chandler examined the extent to which content knowledge, pedagogical knowledge, and pedagogical content knowledge, are emphasized in the choral methods course content (p. 23). A secondary purpose examined the relationship between the variables of: methods course features, instructor characteristics, and instructor characteristics and beliefs surrounding their orientation toward developing and incorporating PCK in the choral methods class.

Participants ($N = 161$) from NASM accredited institutions completed a web-based survey and indicated the emphasis and importance they give to each type of knowledge/skill in the choral methods class. Due to the complexities of studying, understanding, and analyzing teaching-learning dynamics, Chandler consulted a teacher educator who was a former student of Shulman. Based on this consultation, Chandler elected to capture narrative responses from the participants ($n = 126$) for each of the three teacher knowledge categories. Questions included: "(a) describe an instructional activity or assignment [you] implement in the choral methods class specifically to develop that type of knowledge/skill and (b) describe any challenges [you] face in developing that type of knowledge/skill within the choral methods class" (p. 65).

Similar to the findings of Ballantyne and Packer (2004) and Millican (2008), the findings revealed that participants indicated PCK is considered more important than PK and CK for music teacher success. The rankings between PCK and PK were close, and CK was ranked significantly lower. Participants indicated lack of time and lack of experience as the two biggest challenges they faced in developing this type of knowledge/skill within the choral methods class. Chandler called for continued research in music education that applies Shulman's framework; moreover, future research that utilizes multiple methodology tools to address the complexities associated with this type of inquiry is needed. Finally, Chandler suggested future studies that measure the acquisition and development of music teacher knowledge and skills through examining: "declarative knowledge (factual knowledge), procedural knowledge (skills needed for specific learning activities), and metacognitive knowledge (an awareness of the teaching-learning context) stressed by the instructor in fieldwork experiences" (p. 125).

Recently, European scholars in music education have examined professional knowledge in music teacher education and the relationship between subject matter knowledge, general pedagogical knowledge, and PCK. Citing the perennial challenges with integrating theory and practice in teacher education program and in the classroom context, a review by Holgersen and Finn (2013) examined professional knowledge in Denmark. The authors conducted a comparative analysis of three levels of music teacher (preschool, primary, and secondary) education and teaching practices in Denmark.

In the first section of their chapter, the authors compared Shulman's (1986, 1987) concept of PCK with the German-Scandinavian concept of *Didaktik.* Citing Nielson (2007) the authors defined *Didaktik* as:

> *Didaktik* refers to a particular tradition, even though, like the Anglo-American concept of curriculum, it deals with teaching/learning and its written basis'. A particular feature of the *Didaktik* tradition, however, is that 'the teacher is expected to be able to take part in discussions about educational aim and content and to contribute to developing them'. (p. 53)

The authors explored the notion of professional practice and suggested pedagogical professionalism is grounded in practice and involves three types of knowledge:

> (1) everyday practice and experience
> (2) professional practice and professional knowledge
> (3) scientific practice and scientific knowledge
> (p. 53).

The comparison between PCK and *Didaktik* revealed similar components in both pedagogical processes, however a different weighting or emphasis surrounding the 'what', 'why', and 'how' elements of the processes.

The findings from the comparative analysis revealed discrepancies in how the three types of knowledge are balanced in conservatory and teacher training colleges. Moreover, the findings revealed a difference of opinion between teacher educators and

in-service teachers' surrounding the emphasis that is placed on the development of practical versus pedagogical knowledge. Similar to the findings of Ballantyne and Packer (2004), Ballantyne (2006), and Gohlke (1994), the in-service teachers cited the need for greater emphasis on pedagogical knowledge in their music teacher education programs:

> …music teachers often face challenges in their teaching practice – challenge which call for knowledge they did not acquire through their education and which they have to develop through their practice. *Experienced teachers ask for more emphasis on didactical and pedagogical knowledge* in music teacher education, because they have realized that practical knowledge alone is insufficient… (p. 63)

Despite the differences in program design and structure, the findings from this review are comparable to the North American studies and suggest continued research in teacher knowledge (preservice and in-service) and how teachers develop knowledge for practice is necessary.

Music teacher thinking and PCK. Recent investigations by Millican have explored how both music teachers (2013) and preservice music teachers (2014) describe their thinking and use of PCK. In order to uncover how in-service teachers describe their thinking Millican collected video clips ($n = 52$) of sixth-grade beginning band students ($n = 28$) playing one or two lines from their beginning band book. Millican selected clips ($n = 21$) that displayed a range of student performance errors and represented a range of instruments, including flute, clarinet, trumpet, and trombone. Using a social interaction analysis approach, Millican selected expert beginning band teachers ($N = 3$) to participate in the study. Millican conducted individual interviews with each participant, and each interview was videotaped. During the interviews, participants viewed 14 video clips and were asked to comment on what they would say or do to correct problems they identified.

Based on the data, Millican coded the participants' responses and grouped them into a

bullet point list of the most common elements of PCK:

- Teachers evaluate students performance compared to a mental image or model
- Teachers understand the outcome of the manipulation of variables to positively affect student performance
- Teachers gather and interpret specific data to interpret student work
- Teachers develop specific rules, procedures, and guidelines to help students master principles of performance
- Teachers make conscious decisions about sequencing instruction, and they prioritize which issues they choose to address
- Teachers anticipate and predict student problems
- Teachers engage students by having them compare their performances with teacher and peer models
- Teachers engage students with specific, deliberate questions leading to awareness of the physical processes of making music
- Teachers use representations to help students understand musical concepts
- Teachers understand common student misconceptions and misrepresentations (Millican, 2013, p. 48)

Millican found that each participant demonstrated a clear mental image of what they

expected to hear in a student performance. The participants used modeling, comparison,

and questioning techniques to develop awareness and skills in their students (p. 48).

Millican cautioned that the statements describing PCK may appear obvious to an

experienced teacher, however:

> On a deeper level, these specific teaching techniques combine a teachers' knowledge of students, knowledge of content, understanding of curriculum and sequencing, and general teacher skills in order to communicate both abstract and concrete musical concepts to students in an effective way. (p. 51)

Based on the findings, the author made recommendations for teacher education including:

providing opportunities for students to hone and refine their knowledge and skills through

microteaching, apprenticeship of observation in early field experiences, student teaching

placements, and method courses.

In a follow-up descriptive study on PCK and teacher thinking, Millican (2014) examined PCK and teacher thinking a different population, preservice music teachers ($N = 206$). In this descriptive study, the researcher presented video recordings to the participants and tried to elicit a clear description of what they heard, their assessment of the problem, and a proposed solution. Millican asked the participants the following questions after each performance sample:

> (a) What is the most important performance problem you noticed in this video? What one thing would you choose to work on first with this student?
> (b) What do you think is the cause of the most important performance problem?
> (c) If these students were in your class, what would you ask the student to do to fix the most important problem? (Millican, 2014, p. 2)

The data were coded and analyzed using frequency counts. The participants identified a total of 19 different issues in the video recordings. The three problems that were the most frequent were: (a) tone quality; (b) articulation; and (c) air support. The results from the data indicated that although the participants were able to identify specific problems, many had difficulties articulating the cause of the problem and potential solutions. Based on the findings, Millican suggested that preservice music teachers may benefit from guided practice identifying, diagnosing, and proposing solutions to performance problems through microteaching, peer feedback, and reflection activities.

Discussion. The research findings from the MKT literature highlight the detailed processes that are required for studying teacher knowledge, articulating and decomposing the tasks and knowledge required for teaching, and developing strategies to assist teachers in applying their knowledge to practice (Kim, 2013; van den Kieboom, 2008; Zopf, 2010). The data indicate that participants stressed the importance of real-world application and the opportunity to work with an experienced educator in the early stages

of knowledge development for teaching. Based on the data, the findings point to an ongoing need for specific language and expectations surrounding the use and application of the MKT framework in teacher education at the pre and in-service level (Kim, 2013; van den Kieboom, 2008; Zopf, 2010.

The studies reviewed from music education acknowledge the importance of understanding how music educators integrate procedural and content knowledge in the classroom. The studies support the argument that content knowledge alone does not necessarily translate to the ability to teach. Teaching is complex work that requires specialized knowledge distinct from subject matter knowledge alone. Studies from Ballantyne and Packer (2004), Ballantyne (2006), and Haston and Leon-Guerrero (2008) address Shulman's (1986) central questions: "What are the sources of [music] *teacher* knowledge? What does a [music] *teacher* know and when did he or she come to know it? How is new knowledge acquired, old knowledge retrieved, and [how are] both combined to form a new knowledge base?" (p. 8). The findings of these studies support Shulman's hypothesis that PCK and teacher knowledge is complicated, is influenced by many sources, and is deserving of systematic study. Future studies in music teacher education must continue to describe how teacher knowledge is acquired, understood, and used in practice (Ball, 2000; Ball et al., 2008; Millican, 2013, 2014). For as Ball et al. (2008) stated: "…there is a powerful relationship between what a teacher knows, how she knows it, and what she can do in the context of instruction" (p. 496).

Music Teacher Education

Requisite Knowledge and Skills for Practice

Building on the scholarship of PCK in music teacher education literature, it is important to examine the research surrounding the requisite knowledge and skills for practice. Burnard (2013) stated:

> *Professional knowledge* and *personal practical knowledge* (or self-knowledge or performance) of *teachers and teacher educators* and the distinctions between them are important for the music teacher professional because they provide insights into what it is that teachers need to know; they develop and grow scholarly understanding of what teacher knowledge is. (p. 2)

Campbell and Thompson's (2013) recent analysis of qualitative research in music teacher education synthesized research from 1990 to 2013, and identifies two trends in music teacher education research: (a) preservice teachers' beliefs related to music teacher education, and (b) the perceived effects of learning activities associated with music teaching and learning (p. 448). Based on the nature of the current investigation, I chose to review the literature surrounding the skills and knowledge deemed essential for the practice of teaching music. Although the current investigation is focused on the perspectives and experiences of in-service teachers', the majority of the extant research in music education has examined this phenomenon with the preservice population. Despite the different population, the studies offer insights into the knowledge and skills required for the practice and suggest implications for music teacher education, teacher learning, and the application to practice.

A study by Teachout (1997) compared preservice and experienced teachers' opinions of the skills and behaviors considered most important to initial (first three years) music teaching success. The sample consisted of 35 preservice and experienced teachers.

Using a 4-point Likert-type scale, participants were asked to rate the level of importance for each item on the 40-point questionnaire. The mean scores were calculated and used to determine rank order. Ex post facto analysis was used to place the items into one of three categories (personal skills and behaviors, musical skills and behaviors, and professional teachings skills and behaviors), and a two-way ANOVA with repeated measures was calculated to determine significant differences between the groups and categories (p. 45). Of the 40 questionnaire times, both groups ranked the same skills and behaviors in the top 10%. These items included: be mature and have self-control, be able to motivate students, possess strong leadership skills, involve students in the learning process, display confidence, be organized, and employ a positive approach. Based on the results, Teachout hypothesized that preservice and experienced teachers generally agree on the skills and behaviors considered most important to initial teaching success. The findings from this study reinforce the need to consider the personal, musical, and professional skills and behaviors necessary for teaching and approaches for teaching them to prospective and practicing teachers.

Bauer and Berg (2001) sought to examine the factors that influence music teacher knowledge and the application to practice. The purpose of their investigation was to "examine the influence of selected factors on instrumental music teachers' planning for instruction, implementation of learning activities, and assessment of student learning" (p. 55). Three hundred high school instrumental music teachers from Indiana, Illinois, and Ohio were randomly selected to participate in the study and complete the *Instrumental Music Teacher Influences Questionnaire (IMTIQ)* that was developed by the researchers. Of the 300 teachers selected, 120 returned the *IMTIQ* yielding a 40% return rate. The

questionnaire was comprised of four sections: i) background and demographics of the participants; ii) factors when planning for instruction; iii) applying and implementing learning activities; iv) assessing student learning. A 5-point Likert-type scale and open-ended questions were used in each category. Part two of the questionnaire asked participants to indicate factors that they consider when planning for instruction. Participants were given 17 factors to consider including: the participant's experience, availability of facilities and equipment, colleague influence, undergraduate music education classes, student teaching, course instructors, college ensemble conductor's influence, professional development, and student/parent/administration expectations. The means for each factor were calculated and the factors were ranked from high to low. The top five rated factors considered by the participants when planning for instruction were: their own experience, available facilities and/or equipment, college ensemble conductor's influence, colleagues' influence, and professional development activities. Interestingly, participants ranked the same five factors as the highest factors considered when implementing learning activities (part 3). In Part 4 (factors considered when assessing student learning), participants ranked their own experience, colleagues influence, professional development, school curriculum, and student teaching cooperating teacher influence as the highest.

The findings from this study yield interesting points for consideration. Participants indicated undergraduate music and music education courses, and student teacher supervisors have little degree of influence on their practice. Bauer and Berg suggest this finding may be attributed to a lack of connection between theory and practice at the undergraduate level. The authors contend the content of music and music education

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courses may not address the realities faced by practicing teachers (p. 65). Conversely, the findings from this study indicate college ensemble conductors, applied music instructors, and colleagues have a strong influence on the participant's practice. The findings indicate that the participants in this study seek growth in knowledge through professional development activities. This suggests that the participants in this study were interested and committed to growth in knowledge and teaching skill (p. 65). Based on the results, the authors concluded that continued research is needed in the areas of music teacher knowledge and factors that are of significant influence on teacher's practice. Moreover, continued work is needed surrounding connecting undergraduate curricula to practice, particularly since these experiences have the potential to influence teacher knowledge and practice throughout a teacher's career.

Adding to the existing body of research on teaching skills and competencies in music education, Rohwer and Henry (2004) examined collegiate music educators' perceptions surrounding the requisite skills and characteristics needed for effective music teaching. Similar to the questionnaire used by Teachout (1997), Rohwer and Henry created a questionnaire comprised of 46 Likert-type scale questions and 23 opened-ended questions. The questionnaire items were grouped into three categories: musical skills, teaching skills, and personality characteristics. Participants ($N = 798$) were instrumental, choral, and general music education professors listed in the College Music Society Directory. Individual questions were descriptively analyzed through mean and standard deviations and comparisons were made based on three repeated-measures ANOVAs for the areas of choral, instrumental, and general music (p. 20). Participants rated the three categories in order of importance as: teaching skills ($M = 4.51$, $SD = .45$), personality

characteristics ($M = 4.34$, $SD = .53$), and musical skills ($M = 4.30$, $SD = .42$) (p. 21). In the category of musical skills, musical expressivity was the highest rated skill ($M = 4.77$, $SD = .43$) (p. 21). Instrumental and choral participants rated error detection second ($M = 4.72$, $SD = .53$) above the general music participants who rated the item sixth out of nine items ($M = 4.25$, $SD = .78$) (p. 22). Instrumental teachers rated conducting skills fourth ($M = 4.55$, $SD = .67$), above their choral and general music counterparts. The authors noted that context and the participants' areas of expertise may have contributed to the overall high rating for teaching skills over personality and musical skills. Based on the findings, the authors cite the need for continued inquiry within the sub-specialties of music education to determine the discrete skills needed for teaching music.

Professional Development

Opportunities for professional growth in music education can take various forms, ranging from in-service workshops, conferences, seminars, symposia, and small group work, to graduate degrees in music education or performance (whether on the applied instrument or in conducting). A recent review of research pertaining to in-service music teachers' professional development (Conway & Edgar, 2014) highlighted the range of subtopics that pertain to this area of investigation, including professional development for beginning music teachers, mentoring and induction, music making as professional development, action research, and career cycle studies. For the purpose of this investigation, I elected to examine the notion of (a) communities of practice, and review the extant literature on (b) professional development for experienced music teachers, (c) career cycle, and (d) graduate school as professional development.

Communities of practice. The previous section examined *what* knowledge and skills are required for teaching instrumental music. In order to fully understand music teacher knowledge, it is important to understand *how* learning for practice occurs and what types of professional growth opportunities exist for music teachers. In 1991, educational theorists and cognitive anthropologists Lave and Wenger examined the process of social learning. Lave and Wenger indicated that learning is a social process. Wenger (1998) devised a social theory of learning and theorized that knowledge development requires active participation, and that meaning is the result of learning. The four components of this social theory of learning include: (i) meaning (learning as experience), (ii) practice (learning as doing), (iii) community (learning as belonging), (iv) identity (learning as becoming) (p. 5). Wenger said: "Learning is an interplay between social competence and personal experience. It is a dynamic, two-way relationship between people and the social learning systems in which they participate" (Wenger, 2003, p. 78). Learning takes place in "communities of practice" that are defined as: "…groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly" (Wenger, 2011, p. 1). Wenger also stated that communities of practice are bound by three elements: (i) joint enterprise: collective competency that is unique to the community, (ii) mutual engagement: meanings are negotiated through interaction, and (iii) shared repertoire: language, routines, and discourse that are known and common. Wenger's communities of practice model is important to consider in relation to how music teachers derive meaning through their learning, apply learning to practice, and grow as individuals within the professional community.

Professional development for experienced music teachers. Research related to PD for mid-career and experienced music educators is limited compared to the body of literature that exists general education (Bauer, 2007; Bush, 2007; Conway, Albert, Hibbard, & Hourigan, 2005; Conway, 2008; Conway & Eros, 2015; Friedrichs, 2001). Friedrichs (2001) examined the professional growth activities of public high school instrumental music teachers in the state of California, asking specifically, what types of professional growth activities do high school instrumental music teachers find effective? Friedrichs surveyed public school teachers ($N = 960$) and received a return rate of 25.7% ($n = 242$). The respondents indicated the top four professional growth activities as: hosting a guest clinician or teacher, observing other rehearsals, attending music conference, and attending concerts. Conversely, the respondents listed professional growth activities that are ineffective as: curriculum development meetings, non-music conferences, non-music workshops, and district-sponsored workshops. These findings suggest that the participants in this study valued musical skill development over other topic areas. In addition, Friedrichs noted, the overriding theme that appeared in the open-ended questions was the opportunity to interact and network with other colleagues.

Bowles (2002) examined the needs expressed by experienced music teachers and developed a questionnaire to determine their interests and preferences of professional development experiences. A questionnaire was distributed to 1,541 in-service teachers and yielded 29.6% ($n = 456$) responses. Based on the responses, Bowles reported the top professional development topics of interest included: technology, assessment, instrumental/choral literature, standards, creativity, and grant writing. The respondents

indicated the primary motivation for participating in PD was to increase their skill and/or knowledge (82%).

Bush (2007) noted participation in PD is largely determined by topics that resonate with in-service teachers and self-motivation, and music educators typically focus on expanding "specific musical and other practical expertise" (p. 10). Similar to Bowles (2002), Bush conducted a study to determine the types of PD topics that in-service music teachers deem important (pp. 11-12). Participants ($N = 108$) included 32 string, 28 choral, 24 band, and 24 general music teachers. The participants represent a range of teaching experience and grade level including elementary, middle and high school levels. A survey instrument was used to determine biographical information, the participants' preferred ways of gaining PD, and the types of workshops they would like to attend (p. 12). The list of workshop topics included: classroom management, music education for gifted/special learners, lesson planning, assessment, curriculum design, English as a second language, recruiting techniques, new music/repertoire, advance instrument techniques, conducting, festival preparation, grant writing, teaching methods for alternative music classes, technology, and cross-curricular integration (p. 12). Respondents indicated they favored learning from their colleagues and rated district-sponsored PD in-service workshops at the bottom of the ranking (least-favorable). Based on this, Bush concluded that indicated music teachers favor specific subject matter content over heterogeneous topics for the wider in-service teacher population.

A study by Conway (2008) examined the perceptions of experienced music teachers regarding professional development through their careers. Participants ($N = 19$) included mid-career teachers who had 5-11 years of teaching experience ($n = 13$) and

veteran teachers who had over 16 years of teaching experience ($n = 6$). Data sources included: individual unstructured interviews and a focus group comprised of the veteran teacher participants. Research questions included the following: (a) "What are the perceptions of these music teachers regarding the most and least valuable professional development experiences?" and (b) "Do these perceptions change with regard to the length of time that a teacher has been in the field?" (p. 7). Based on the data, the findings indicated that the participants' viewed informal interactions with other music teachers to be the most powerful form of music teacher professional development. This finding is consistent with both Friedrichs (2001) and Bush (2007), who found that in-service teachers reported interacting with their colleagues as a powerful form of professional development. Furthermore, this finding supports past research that indicated that professional development for music teachers needs to be situated within the subject matter (Bauer, 2007; Conway, Albert, Hibbard, & Hourigan, 2005; Conway, 2008; Friedrichs, 2001). Additional findings indicated that, over the course of the participant's career, their perceptions surrounding professional development change. Specifically, the participants noted that they have become more proactive in self-assessing their practice and determining what kinds of professional development they need.

Similar to the findings from Rohwer and Henry (2004), the rankings and discrepancies between the music sub-specialties reveal the different needs for teaching instrumental, choral, and general music. Instrumental and choral music educators ranked new music/repertoire, instrumental techniques, recruiting, and conducting the highest, whereas general music teachers ranked student assessment, lesson planning, technology, and curriculum design the highest. Based on the findings, Bush reinforced the findings

from past literature (Bauer, 2007; Conway, Albert, Hibbard & Hourigan, 2005; Conway, 2008) and concluded the voice of the practitioner needs to be recognized and addressed in designing PD experiences, activities, and workshops. In addition, continued research is necessary to study the specific needs of performance-based and general music educators.

Career cycle. The literature on teachers' career cycles suggests that, over the course of their careers, in-service teachers pass through different phases ranging from the initial entry into the profession to retirement (Eros, 2011; Fessler & Christensen, 1992; Huberman, 1993; Steffy, Wolfe, Pasch, & Enz, 2000). The different stages or phases are based on variables such as personal and educational factors. These factors may include, but are not limited to: the amount of time teaching, the pursuit of advanced degrees, and change of level and/or subject area (Eros, 2011). Conway and Edgar (2014) noted that despite the prevalence of research surrounding the changing PD needs of experienced teaching in the general education literature, recognition of the different career cycles is a relatively new concept for music education researchers (p. 495). This assertion is particularly relevant, as the limited studies on experienced teachers in music education suggests that this population should seek out different types of professional development from first stage teachers, as they have different needs and interests than others in different stages of their career cycle and development (Conway & Eros, 2015; Eros, 2011, 2012, 2013).

Eros (2013) responded to the call from Bauer (2007) who indicated the need for multiple modes of inquiry to understand the complex phenomenon of professional development. Eros examined experienced music teachers' ($N = 3$) perceptions of their professional development. Data sources for this qualitative investigation included: a

background survey, journal, individual semi-structured interviews, and a focus group interview with all participants. A descriptive case study design (Merriam, 1998) was used to ascertain rich and thick description of the phenomenon. The participants represented a variety of teaching levels (elementary, middle, and high school) and sub-specialties of music teaching (band, general music, choral, strings, music appreciation, and drum line). Based on the analysis of the data, the findings were organized into themes: forms of professional knowledge, professional development needs, obstacles to professional development, and concerns about professional development. The participants cited forms of PD, both formal (workshops, certification, graduate degrees) and informal (interacting with colleagues, reflection, and writing). Similar to Eros' previous findings (2011), the participants indicated that their needs had changed in terms of the types of professional development topics they sought out. Eros indicated that this change might be attributed the shift in experienced teacher's focus themselves to their students needs (how students learn and pedagogical approaches to instruction). The participants cited an increase in their self-confidence, but still noted their concerns surrounding being disengaged from teaching.

Graduate school. In-service music educators looking for sustained, concentrated professional development often pursue graduate work in music as a form of professional learning and development (Barrett, 2006; Conway, Eros, & Stanley, 2009). Barrett (2006) noted that this form of professional development provides classroom teachers with an opportunity to connect questions that arise in practice to the theories that inform practice. Moreover, Barrett (2006) suggested that "graduate programs can be especially strong in

their capacities to engage teachers in the study of music and music teaching, which builds disciplinary depths, and also in fostering teacher-directed inquiry" (p. 26).

A study by Junda (1994) examined the experiences of in-service general music teachers ($N = 4$) who participated in a two-semester Koldáy-based graduate course. The purpose of the study was to examine the effectiveness (teacher's ability to apply and implement strategies from the course content in the context of their classroom) of an in-service program geared towards in-service music teachers. The research project had four components: (i) enrollment in the two-semester graduate course; (ii) developing teaching strategies based on the course content; (iii) five observation and feedback sessions where the instructor reviewed videotapes of the participants' teaching and application of the instructional strategies; (iv) comprehensive evaluation of the project, including collecting data related to the participant's musical and instructional skills, attitude, and participation and engagement levels of the students in the participants' classes. Other data sources included mid-project and final evaluations in the form of a questionnaire. The findings from the data suggest that, after the two-semester course, the participants' musical skills improved, their knowledge of pedagogy and their ability to implement pedagogical approaches in the classroom improved, and their students' musical skills improved as well. The results from this study indicated that the combination of the teachers' participation in the program and the feedback they received from their instructor in the context of their classroom had a substantial impact on the quality of the teachers' instruction and the students' learning.

Conway, Eros, and Stanley (2009) examined music teacher perceptions ($N = 9$) of the effects of graduate studies on their personal teaching practice and student

achievement. Data sources included: an online survey, participant journals, and individual interviews. Participants indicated that performance opportunities were crucial to their learning, as these experiences gave them an opportunity to be a performer and a member of a musical ensemble. One participant indicated that participating in an ensemble during their time in a graduate program had a direct application to her classroom teaching as the experience informed her conducting and rehearsal techniques. Through this experience, the participants viewed themselves as students, teachers, researchers, and scholars. Some participants indicated that the experience provided them with the opportunity to refresh and refocus, while others discussed how it gave them the opportunity think about teaching and learning from the vantage point of the student. Additional findings suggested that the participants connected research to their practice, and drew connections between their undergraduate and masters studies and with their teaching. Conway, Eros, and Stanley (2009) and Conway and Edgar (2014) noted the need for continued inquiry on this aspect of professional learning and development.

Discussion. The study of music teacher education exemplifies the perennial divide between theory and practice, and the need for continued research on what teachers know, how they learn, and how their knowledge guides their practice (Hookey, 2002). In the conclusion of their review, Conway and Edgar (2014) stated:

> Continuous, career-long PD is necessary for music educators to successfully teach in a constantly changing environment. Ensuring that findings from this research are made available to in-service teachers and PD facilitators is essential to improving the quality of music education PD. There is still much to be discovered about how teachers learn throughout their careers. (p. 497)

The findings from Bauer and Berg (2001) indicate that the theory and practice divide exists in music teacher education and that continued research in music teacher

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knowledge is needed to determine (a) how sources of knowledge influence practice, and (b) how to connect the undergraduate curriculum to practice. Preservice and in-service teachers reported conflicting viewpoints surrounding the requisite knowledge and skills that are required for practice and/or effective teaching. Preservice teachers favored teaching skills over personal and musical skills (Rohwer & Henry, 2004; Teachout, 1997), whereas in-service teachers sought out additional instruction in the musical skills require for practice, and experienced teachers noted a need to shift their focus from themselves to a deeper understanding of pedagogy and student learning (Bauer, 2007; Bowles, 2002; Bush, 2007; Conway, Albert, Hibbard & Hourigan, 2005; Conway, 2008; Eros, 2011, 2013; Friedrichs, 2001). The findings from the aforementioned studies and calls for continued research indicate that subsequent studies of music teacher knowledge must be grounded within the context of practice.

Teaching and Learning Conducting

The conducting literature consists of a wide spectrum of essays (Baker, 1992; Hanna-Weir, 2013; Spencer, 2000; Ulrich, 2009) and research topics ranging from gesture (Byo & Austin 1994; Laib, 1993; Sidoti, 1990; Sousa, 1998) to error detection (DeCarbo, 1982; Sheldon, 1998), nonverbal behaviors (Roebke, 2005; Mayne 1992), expression (Gallops, 2005; House, 1998; Laib, 1993; Sidoti, 1990), magnitude (Yarbrough, 1975), intensity contrast (Byo, 1994), and rehearsal strategies (Moss, 1996; Silvey, 2014). The studies most closely related to this study are those that examined pedagogical approaches and instructional practices (Baker, 1992; Boardman, 2000; Manfredo, 2008; Romines, 2000; Runnels, 1992; Silvey, 2011; Silvey & Baumgartner, 2014; Spencer, 2000), evaluation and assessment tools strategies for basic conducting

skills (Johnston, 1993; Yarbrough, 1976, 1978, 1987; Yarbrough, Wapnick, & Kelly 1979), and continuing studies in conducting for in-service teachers (Lindahl, 2010).

Pedagogical Approaches and Instructional Practices

An essay by Baker (1992) traced the establishment of choral conducting curricula in higher education. Within this critical analysis, Baker (1992) noted the challenges related to teaching conducting and indicated that young conductors are characterized by a lack of personal creativity and correctness that he terms "objectivist" (p. 7):

> The curricula which aspiring conductors encounter emphasize the skills of score-reading, as well as historical performance practices, period styles, and the canonized repertoire for the past. Attention is also directed to the study and application of pre-existent systems of analysis, and to the recorded performances of other artists. Students are coached in conducting technique." (p. 23)

Baker indicated that conducting pedagogy must move away from the objectivist approach that emphasizes product over process. Rather, Baker stated the goal of curricula and classes should focus the integration of internal (knowledge) and external (skill) processes: developing communication skills, autonomy, and imagination in aspiring conductors so that they are able to engage in a non-verbal discourse through gesture with the ensemble (p. 29). Specifically, conducting students must be given opportunities to practice and develop technique and knowledge:

> Unless the student's body keeps up with his mental advancement, he cannot fully express himself…[Conductors] need a practice vehicle by which to consciously develop not only technique, but also the capacity for (1) strong and meaningful

facial and bodily expression, (2) the ability to connect physical gesture to sound,

and (3) personal creativity in inventing gestures (p. 70).

Baker noted the challenges and cited the lack of a conceptual framework for teaching

conducting (p. 71). The author advocated a balanced approach to the teaching paradigm

that included addressing the internal and external components of the conducting process

(p. 93). Although Baker did not offer specific steps in the newfound teaching paradigm,

he outlined three fundamental priorities when teaching conducting: "(1) [developing] a

more specific language for evaluation, (2) [including] improvisation as a basic activity,

(3) the elimination of those tensions which restrict conductors' physical potentials" (p.

94). The background knowledge about the philosophical underpinnings of conducting

pedagogy offer an entry point for considering alternative teaching styles and approaches

to developing conductors' knowledge and skill.

Over a decade later, Spencer (2000) echoed Baker's (1992) concerns surrounding

the teaching and learning of conducting, specifically, the division between developing a

conductor's skill and musical development. Spencer studied young choral conductors and

cited the challenges associated with learning to conduct. In addition, Spencer examined

the limitations in the undergraduate curriculum, and textbooks, and the assumption that

students are able to coalesce their technical skills and musical knowledge on their own.

Spencer stated:

> …young choral directors and music educators are entering the profession with
> generic and limited conducting skills…They drill exercises that are often divorced
> from sound, or applied to music after the skill has been learned, in order to
> become proficient conductors. Consequently, their motions become generic and
> robotic, they are disconnected from the music. (p. 1)

Spencer indicated a need for a heuristic approach to conducting pedagogy that fosters independence, creativity, while developing the tools necessary for conductors to express themselves physically, verbally, and emotionally through gesture and rehearsal strategies. The author cited the limitations with course textbooks and syllabi, particularly in the areas of developing and applying musicality and creativity to practice. Moreover, Spencer indicated young conductors are faced with several challenges when they attempt to apply their conducting skill and musical knowledge to their teaching practice:

> …once in front of an ensemble they are barely capable of maintaining a consistent beat pattern, let alone evoking anything emotional from the ensemble. This occurs primarily because there is a disparity between what is desired versus what is actually shown…there is a chasm in the conductor's experience between acquiring technique and learning to use it in a satisfyingly musical and engaging manner. (p. 5)

The author reviewed prominent conducting textbooks, curricula, and manuscripts on conducting pedagogy. Based on this analysis, Spencer offered a specific curriculum and sample lessons that illustrate the principle of merging teaching technique and the components of musicianship, while developing the three aspects of conducting: knowledge, technique, and artistry (p. 202). Spencer indicated that this curriculum promotes lessons that are grounded in the principles of musicianship, problem-solving, and reflective activities that occur in the creative process. The Spencer model is grounded in musical knowledge and developing students' confidence and ability to say something musically beyond technical prowess.

A study by Runnels (1992) examined the teaching practices of instrumental conducting instructors. A survey was distributed to 151 institutions in a six-state region. Survey questions included demographic questions regarding the institution, the instructors' experience, course content, and methodological approaches to instruction. A

response rate of 64% (96 out of 151 institutions) was obtained. Results indicated gestural technique (i.e., beat patterns, preparatory beats, cut-off and release, cueing, articulation, tempo variance, dynamic variation) was addressed consistently. Students in the courses frequently conducted a live ensemble comprised of their peers and classmates. Typically, the in class conducting sessions were videotaped by the course instructors. Based on the data and findings, Runnels concluded providing students with ample opportunity to conduct a live ensemble and observe experienced conductors is an essential component of conducting curricula.

Boardman (2000) surveyed instrumental conducting teachers ($N = 63$) from institutions within the Region Seven of the National Association of Schools of Music to determine the content and teaching practices in undergraduate instrumental conducting courses. Using a five point Likert-type scale, participants ranked aspects of their conducting courses. Participants indicated that conducting technique was the instructional category most often taught in their courses (93%), followed by rehearsal and classroom issues (91%), musical knowledge and skills (68%), ensemble knowledge (59%), and conducting history (39%). The rank order of importance was (highest to lowest): conducting technique, conductor attributes, rehearsal and classroom issues, musical knowledge and skills, evaluation and observation, ensemble knowledge, and conducting history. Based on the findings, Boardman concluded all of the instructional categories are essential for a balanced conducting curriculum.

Romines (2000) examined the demographics and curriculum of undergraduate conducting courses in NASM accredited institutions. Romines surveyed 70 course instructors on topics that pertain to curricular content and pedagogical approaches to

instruction. Survey results indicated that the participants consistently taught the topic of

basic gestures. Other aspects of course curricula included: rehearsal procedures, score

study, error detection, rehearsal planning, ensemble evaluation, warm-ups, tuning, seating

plans, programming, conducting with accompaniment, contemporary notation, and

building ensemble tone quality. The results indicated these topics were addressed with

less consistency. Romines reported a discrepancy between what the participants thought

should be taught in the conducting curriculum and what is actually covered. Furthermore,

several participants indicated they assign the responsibility of addressing the pedagogical

concerns of conducting to other courses. Based on the findings, Romines suggested

reimagining conducting courses and methods courses to help synthesize the practical and

pedagogical aspects of knowledge required for practice. In addition, Romines highlighted

the discrepancies surrounding providing students with podium time. Romines stressed

providing students with ample conducting experiences is a necessary component of

conducting courses.

Manfredo (2008) examined the course content and instructional practices in

introductory and advanced level conducting courses at prominent schools of music in the

Midwest (p. 45). Manfredo also examined the relationship between conducting and

instrumental methods course content. The data showed a lack of consensus among course

design, instructional approaches. Manfredo cited the challenges associated with teaching

conducting:

> Despite its significance, a standardized curriculum for the teaching of conducting
> has not yet evolved in universities across the country…Instead of the
> implementation of a curriculum that reflects the competencies required of the
> instrumental music educator, it is common for instructors to develop syllabi based
> [on] their unique training, experiences, interests, and musical background. [The]
> content of conducting textbooks is based [on] the subjective reflections of authors

and publishers who are looking to address competencies they believe student conductors need. (p. 44)

Manfredo called for continued research in the area of instruction and pedagogy and stresses the need for a stronger relationship between conducting and methods course curricula:

> The concern is the conflict between the conducting course being focused [on] gesture-related topics that address the artistic and expressive aspect of the student-conductor, versus the concentration on competencies related to effective teaching strategies and rehearsal techniques of the future music educator. (p. 56)

Silvey (2010) examined undergraduate music majors' (N = 173) perceptions of instrumental conducting curricula, perceived level of preparedness, and the amount of time devoted to specific topics during the course. The findings from the Internet-based survey revealed participants felt most comfortable with their ability to conduct patterns and least confident with their ability to detect errors and rehearse an ensemble. Silvey noted these findings are not surprising as the majority of conducting textbooks and course sequence focus on the acquisition of technical skills. Error detection, pacing, rehearsal strategies, and communication are often reserved for the second semester and are contingent upon students having the opportunity to conduct a live ensemble. The data support past findings that point to discrepancies over the content, sequence, and pedagogy surrounding instructional practices (Boardman, 2000; Manfredo, 2008; Romines, 2003; Runnels, 1992). The findings also highlighted the challenges associated with managing the scope of course content in a two-semester allotment of time.

A recent study by Silvey and Baumgartner (2014) investigated the development of undergraduate conductors' (*N* = 19) and conducting teachers' (*N* = 9) perceptions about basic conducting efficacy. The undergraduate conductors were given a pre and

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posttest in the form of a questionnaire to determine if their experiences during a conducting course would affect their perceptions of basic skills, behaviors, and attributes related to conducting. Silvey and Baumgartner grouped these skills, behaviors, and attributes into three categories: interpersonal, musical, and physical skills related to conducting. The pre test was distributed during the first class meeting and the same questionnaire was given on the last day of the class (posttest). The student participants' in-class conducting of a live ensemble was videotaped. The student participants completed self-evaluations of their conducting performance using a researcher-designed rubric.

In addition to the data from the undergraduate conductors, the conducting teacher participants were asked to evaluate videos of 10 conductors (five participated in the conducting course and five were nonconductors) leading a one-minute excerpt of band music. No significant differences were found between the conducting teachers' ratings of conductors' and non-conductors' nonverbal conducting behaviors. The researchers noted the brevity of the excerpt might have impacted the teachers' ability to evaluate significant differences in ability.

The findings from the student participants' pre and posttest revealed significant differences in their perceptions of interpersonal skills (confidence, passion for learning), and physical skills (eye contact). The mean ratings in the interpersonal skills category increased from the pre and posttest, and with the exception of eye contact, no significant differences were found from the pre and posttest in the other two categories (musical skills and physical skills). Interestingly, the students' self-reported physical skills as the highest attribute required for successful conducting. The researchers hypothesized this

finding may be linked to the emphasis that is placed on physical skills in conducting textbooks. Based on the discrepancies with the pre and posttests, Silvey and Baumgartner concluded that the participants' exposure to conducting a live ensemble might have influenced their perceptions and understanding about the complexities inherent in conducting an ensemble (p. 6). The researchers stated: "Increased and more diverse opportunities to conduct and apply knowledge of basic conducting skills may promote improved performance in beginning conductors" (p. 7). The researchers advocated for incorporating course activities that encourage students to "think critically about the application of fundamental skills (e.g., music theory, music history) to conducting" (p. 7), and a balanced approach to addressing the interpersonal, musical, and physical knowledge and skills required for working with ensembles.

Evaluation and Assessment Strategies for Basic Conducting Skills

Yarbrough, Wapnick and Kelly (1979) indicated that historically, the teaching, learning, and evaluation of conducting was approached through the practical apprenticeship model, whereby the experienced conductor-teacher offered advice and guidance to novice conductors through observation and emulation. Yarbrough et al., noted the increased use of video recording technology as an educational tool in the teaching and learning of basic conducting skills. The purpose of this study was to compare the impact of traditional instructor feedback versus behavioral self-assessment techniques on beginning choral conductors' basic acquisition of conducting skills (p. 105).

Undergraduate music education majors ($N = 47$) enrolled in a basic conducting course were randomly assigned to one of two treatment groups. Participants videotaped

themselves conducting selections from the course text and viewed the tapes in the control groups for 30 minutes. Group 1 reviewed their videotape individually and discussed their conducting concerns with an "experienced conductor-teacher" (instructor) (p. 105). The instructor offered suggestions for improvement and modeled suggested improvements. Group 2 followed the same procedure but recorded their concerns on an observation form that included three categories for consideration: (i) use of rehearsal time; (ii) conductor's verbal responses; (iii) conductor's nonverbal behavior. No instructor was present for group 2. Participants were videotaped conducting pre- and post-tests where they were asked to conduct passages in 2/4, 3/4, 4/4, and 6/8 meters. At the end of the semester, a panel of three judges rated the pre and posttests on: correctness of beat pattern, preparatory and release gestures, dynamics, style, tempo, cueing, eye contact, and the occurrence of mannerisms (p. 107). In addition, participants completed a survey based on their experience with, and their evaluation of the conducting course.

The data demonstrated no significant difference between the feedback groups for eye contact, mannerisms, and technique; however, the instructor feedback group mentioned the instruction, self, and mannerisms more often that the observation form group. In addition, the observation form group mentioned body movement, rehearsal time, and facial expression more than the instructor feedback group. Based on the findings, the authors indicated that the participants in this study did equally well in both groups. Yarbrough et al., concluded that video recording devices and self-observation: "may be a viable alternative for teaching basic conducting skills" (p. 111). Given this, the authors suggested that conducting instructors reconsider how instructional time is distributed and utilize instructors for teaching aspects of conducting that are less

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amenable to observational approaches (expressivity, interpersonal skills, and nonverbal affective responses).

In a follow-up study, Yarbrough (1987) explored the relationship between self-observation and self-evaluation techniques in the acquisition of basic conducting skills. The findings corroborate with previous data (Yarbrough et al., 1979), and Yarbrough (1987), who stated: "It should be emphasized that beginning conducting technique lends itself very well to this type of instructional design while other, more complex skills may not" (p. 188). The data showed that self-observation and assessment through video recording provides students with immediate reinforcement; however, Yarbrough cautioned that self-observation techniques do not *cause* achievement of skill; rather, self-observation and behavioral techniques are useful tools in the teaching and learning of basic conducting skills.

Johnston (1993) examined the effectiveness of video self-assessment, peer-assessment, instructor feedback, and the use of a Conductor Peer/Self Evaluation form amongst undergraduate students in England. Participants ($N = 25$) were students from the University of London Institute of Education. The participants enrolled in a three-day 'mini course' designed to improve conducting skills. During the course, participants were assigned a conducting partner (peer). Participants were videotaped conducting choral excerpts and the course instructor offered feedback on the conducting during the tapped session. The conducting partner used the Conductor Peer/Self Evaluation form to evaluate the conductor. The partners were given opportunities to discuss the strengths and areas of weakness with their gestural technique. At the end of the course, participants were surveyed on the effectiveness of the teaching and assessment tools. The results from

the survey indicated that the participants found the video self-assessment, peer assessment, and instructor feedback useful. It is particularly important to note the positive findings surrounding peer-assessment in this study. Participants indicated that the additional viewpoint and opportunity to observe a fellow conductor was beneficial to their conducting development (p. 61).

Continuing Studies in Conducting

The majority of research on conducting teaching and learning centers on the experience of beginning conductors, typically at the undergraduate level (Boardman, 2000; Byo & Austin 1994; DeCarbo, 1982; Gallops, 2005; House, 1998; Johnston, 1993; Laib, 1993; Mayne 1992; Roebke, 2005; Romines, 2000; Runnels, 1992; Silvey, 2011; Silvey, 2014; Silvey & Baumgartner, 2014; Sheldon, 1998; Sidoti, 1990; Sousa, 1998; Yarbrough, 1976, 1978, 1987; Yarbrough, Wapnick, & Kelly 1979). Lindahl (2010) examined in-service music educators in the context of a summer symposium and asked: "What motivates music educators to further their conducting skill?" (p. 10). Lindahl chronicled the history of professional development for conductors:

> Historically, conductors in educational settings have been prepared for their positions in academic degree programs or by virtue of extensive on-the-job experience. Those seeking to improve their skills…pursued further academic study in graduate degree programs. Over the last thirty years, another mode of conductor development has emerged to further develop and refine conducting skills…the conducting symposium. The conducting symposium is a vehicle that offers students the opportunity for an intense, yet short-term, commitment of time to focus on the develop of their conducting skills and knowledge. It is an opportunity for in-service teachers to work on issues, technical and/or musical, that have arisen in their conducting. (p. 4)

The site for this investigation was the summer symposium at the University of Calgary in Alberta, Canada. The purpose of the investigation was to examine attendees' perception of their learning and the impact of the pedagogues' instruction on their development.

Using a phenomenological framework, Lindahl chronicled the participants' ($N = 4$)

experience over the 19 days at the symposium and examined the relationship between the

participant and instructor, and peer relationships. The participants represented a range of

teaching specialties (middle and high school band teacher, university instructor, and past

elementary and high school band teacher) and career stages ranging from one to nine

years of classroom experience. Data sources included four interviews with each

participant, observations, and artifacts. Observation sites included: conducting classes

and video debriefing sessions, following podium time. The data were transcribed, coded,

and analyzed by the researcher. The four most common codes included: intensity,

growth, group dynamics, and working with the instructors. Given the condensed timespan

of the symposium, participants reported the pace of the symposium was similar to an

immersion experience. The nature of the symposium was focused and required

endurance. Lindahl stated:

> …the quantity of the course work and assignments, the full days of instruction
> and conducting, and the focused, serious, and a deferential feeling to music
> making saturated the environment. The intensity of the symposium experience
> was a vital component of the phenomenon. It was a constituent part of the
> attitudinal formation of the participants. (p. 165-166)

Each participant's perspective on their growth was idiosyncratic based on their needs and

area of focus. All four participants acknowledged the time and patience required for

growth to occur, and the long-term process involved in developing conducting

knowledge. Lindahl reported that all four participants indicated a need to deepen their

musical knowledge in order to communicate their knowledge gesturally to the ensemble

(p. 170). Similar to Johnston's (1993) findings, the participants expressed collegial

relationships with their peers. The instructors reinforced this by encouraging participant

dialogue and group social events after the formal part of the instructional day. Lindahl reported the participants spoke highly of the instructors and valued their skill as a conductor, diagnostician, and teacher (p. 175). These attributes fostered a foundation of trust and respect between the participants and the instructor. Based on the data, Lindahl summarized the participants' perceptions of the experience and noted that each of the four participants indicated that musical development was a weakness in their undergraduate and or teacher education. This finding is noteworthy when compared with the teaching skills and competency literature in music education that indicate personal and teaching skills and competencies are favored over musical skills for effective teaching (Bauer & Berg, 2001; Teachout, 1997).

Discussion. The emerging literature surrounding conducting pedagogy highlights the limitations of the traditional skills-based approach to teaching and learning conducting. Revising the pedagogy, and in turn, the curriculum to include teaching strategies that address knowledge development, the principles of musicianship, and reflective practice is difficult because of the number of variables involved in conducting (Baker, 1992; Boardman, 2000; Manfredo, 2008; Romines, 2000; Runnels, 1992; Silvey, 2011; Silvey & Baumgartner, 2014; Spencer, 2000). While the work of Baker (1992) and Spencer (2000) raise concern and offer suggestions for the practice of teaching and learning conducting, continued research is needed to understand how conductors develop their knowledge and understanding, refine their skills, and apply it to practice.

The research from Johnston (1993), Yarbrough (1976, 1978, 1987) and Yarbrough et al. (1979) are an important contribution to understanding the different facets and educational tools used for teaching, learning, and evaluating the skill

component of conducting. This body of work indicates that a multifaceted approach to teaching and evaluating conductors yields positive results; however, there is little mention of the knowledge required for conducting and how this development occurs. Additionally, the aforementioned result examined undergraduate student conductors exclusively. Yarbrough (1987) noted that understanding a student's verbal statements in relation to their skill development is difficult without a closer examination of the cognitive processes involved (p. 188). While this research highlights approaches to the ongoing development of the technical aspects required for conducting, it is clear that there are additional knowledge and skills that contribute one's ability to conduct.

The study by Lindahl offers the perspective of in-service teachers who are looking to further their knowledge and skill of conducting. In addition, the study speaks to the nature of professional development for conductors. While the findings confirm past literature surrounding teaching and learning conducting (Baker, 1992; Hanna-Weir, 2013; Johnston, 1993; Spencer, 2000), Lindahl indicates that continued research in the area of knowledge development for conductors is needed. A systematic investigation that represents the voice of the practitioner surrounding teacher knowledge development for conducting is a logical next step for continued growth and improvement in the areas of conducting professional development and pedagogy (Bauer, 2007; Conway, Albert, Hibbard & Hourigan, 2005; Conway, 2007).

Summary of the Literature

The reviewed body of literature on teacher knowledge, music teacher knowledge and the teaching and learning of conducting served to contextualize the current investigation surrounding instrumental music teachers' knowledge for conducting a large

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ensemble. The literature on MKT in teacher education demonstrates the detailed processes that are required for studying teacher knowledge, articulating and decomposing approximations and representations of practice, and developing strategies to assist teachers in applying their knowledge to practice (Ball, 1998; Ball & Bass, 2000; Ball & Bass, 2003; Ball, Hill, et al., 2005; Ball & Lampert, 1999, Ball, Sleep, et al., 2009; Ball, Thames, et al., 2008; Kim, 2013; van den Kieboom, 2008; Zopf, 2010). The findings from the general and music education literature on teacher knowledge indicate that content knowledge alone does not necessarily translate to the ability to teach, and that teaching is complex work that requires specialized knowledge for practice (Ball, 2000; Ball et al., 2008; Ballantyne, 2006; Ballantyne & Packer, 2004; Millican, 2008, 2013, 2014). The body of literature in music education surrounding the development and application of PCK reveals continued investigations are needed to understand and describe how pre- and in-service music teachers develop and apply their knowledge to their teaching practice (Ball, 2000; Ball et al., 2008; Ballantyne, 2006; Ballantyne & Packer, 2004; Chandler, 2012; Duling, 1992; Gohlke, 1994; Haston & Leon-Guerrero, 2008; Millican, 2008, 2013, 2014; Snow, 1998; Venesile, 2010).

In order to understand the cognitive processes surrounding how music teachers' develop and apply their knowledge to practice, it is imperative to clearly define *what* requisite knowledge and skills are required for practice and *how* music teachers learn. The extant research on music teacher education suggests pre- and in-service teachers report conflicting viewpoints on the requisite knowledge and skills required for effective teaching (Bauer, 2007; Bowles, 2002; Bush, 2007; Conway, Albert, Hibbard & Hourigan, 2005; Conway, 2008; Eros, 2011, 2013; Friedrichs, 2001; Rohwer & Henry, 2004;

Teachout, 2007). Moreover, the emerging research surrounding career cycle and experienced teachers suggests music teachers' professional learning and development needs change over time (Conway & Eros, 2015; Eros, 2011, 2013). The findings from the literature on music teacher education and professional development suggest that the theory and practice divide exists in music teacher education and subsequent studies of music teacher knowledge must be grounded in the context of practice. The literature surrounding the teaching and learning of conducting suggests that continued research can offer insights on pedagogical approaches to instruction, and understanding how conductors develop knowledge, refine their skills, and apply them to practice (Baker, 1992; Boardman, 2000; Johnston, 1993; Lindahl, 2010; Manfredo, 2008; Romines, 2000; Runnels, 1992; Silvey, 2011; Silvey & Baumgartner, 2014; Spencer, 2000; Yarbrough, 1976, 1978, 1987).

Conclusion

The purpose of this chapter was to examine the prior research in the areas of teacher knowledge, music teacher knowledge and skill development, and teaching and learning conducting. The review has informed the design of investigation and it is hoped that this study will serve as a next step in the ongoing investigation of music teachers' development of knowledge for conducting a large ensemble. In Chapter III, I will describe the methodological design, participant sampling, and analysis procedures for this study.

Chapter III

RESEARCH METHODS AND DESIGN

The purpose of this chapter is to describe the methodology for this study, which examines the complexities of instrumental music teacher knowledge and how participants describe the intersections between instrumental music teaching and conducting. I will begin with a review of the purpose and research questions followed by a description of the methodological approach and design. Following this section, I will outline the participant selection process, research setting, and data collection and analysis procedures. Finally, I will address trustworthiness and researcher expertise.

Purpose Statement and Research Questions

The purpose of this study was to examine the complexities of instrumental music teacher knowledge and explore how participants describe the intersections between instrumental music teaching and conducting. As such, the key research question guiding this study was: How do high school instrumental music teachers describe the intersections between instrumental music teaching and conducting? Sub questions include, (a) What key experiences do instrumental music teachers describe as being most meaningful to their development as teachers and conductors? (b) Which aspects of practice do instrumental music teachers perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors, and (c) What dilemmas of practice (Ball, 1993; Lampert, 1981, 1985) do instrumental

music teachers perceive and describe as being related to the intersection between

instrumental music teaching and their development as conductors?

Design

In order to gain a holistic understanding of the purpose and research question, I

used a qualitative methodology. Merriam (2009) stated:

> …qualitative researchers are interested in how people interpret their experiences,
> how they construct their worlds, what meaning they attribute to their experiences.
> The overall purposes of qualitative research are to achieve *understanding* of how
> people make sense out of their lives, delineate the process (rather than the
> outcome or product) of meaning-making, and describe how people interpret what
> they experience. (p. 14)

In this study, a qualitative approach allowed me to examine in detail how the participants

($N = 4$) describe the intersections of their teaching practice and conducting.

Case Study

Barrett (2014) indicated that case study design is frequently used in education and

music education research because of the adaptive and contextual nature of the design, the

pedagogical utility for education research, and transparency for readers. As such, I used a

case study design to gain an in-depth understanding of instrumental music teachers'

perceptions of the intersections between instrumental music teaching and conducting.

Barrett (2014) stated:

> Aspects of the lived experience of music teaching and learning are often too
> nuanced, contextualized, and interdependent to be reduced to discrete variables.
> The dynamic intersections of subject matter, learners, teacher, and educational
> milieu are vital to our professional understanding; case study reports can aptly
> convey the multifaceted ecologies of life in music classrooms. (p. 114)

For the purpose of this study, I adopted Merriam's (2009) definition of case study

research: "As the product of an investigation, a case study is an intensive, holistic

description and analysis of a single entity, phenomenon, or social unit" (p. 46). Although

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case study design is ubiquitous in educational research, this form of inquiry is often criticized for irregular definition and design (Barrett, 2013; Conway, Pellegrino & West, 2012; Merriam, 2009; Stake, 2006; Stake, 2010; Yin, 2014). Merriam (2009) indicated that the most important characteristic of case study is defining the object of the study: the bounded system. The bounded system is the unit of analysis, a person who exemplifies the phenomenon, an institution, a community: "a single entity, a unit around which there are boundaries, I can fence in what I am going to study" (Merriam, 2009, p. 40). For the purpose of this study, this case was bound by four participants' descriptions of their perceptions of the intersections between instrumental music teaching and conducting.

Multiple case study design. This study focused on the participants' perception and descriptions of the intersections between instrumental music teaching and conducting. In order to examine and understand the complexities of teacher knowledge, I examined the practices of four participants who teach in different school contexts. Stake (2006) stated:

> …one of the most important tasks for the multi[ple] case researcher is to show how the program or phenomenon appears in different contexts. The more the study is a qualitative study, the more emphasis will be placed on the experience of people in the program or with the phenomenon. (p. 27)

Through the multiple case study design, I examined the commonalities across the cases, the unique aspects of each case, and how the context and experience of each participant influence the phenomenon (Stake, 2006).

Sampling

The nature of this study required information-rich cases that illuminated the purpose and research questions. Purposeful sampling was used to select the four participants for the study. Merriam (2009) stated: "Purposeful sampling is based on the

assumption that the investigator wants to discover, understand, and gain insight and therefore must select a sample from which the most can be learned" (p. 77). In order to understand instrumental music teachers' perceptions surrounding teaching and conducting, I used criterion-sampling to purposefully choose participants whose experiences illuminated the topic at hand. In criterion-sampling, the researcher establishes a set of criteria that directly reflect the purpose of the study and will inform the identification of information-rich cases (Merriam, 2009). Accordingly, I created a list of criteria for selecting prospective participants:

- Instrumental (band) music educators who have been teaching for five or more years;

- The individual must have experience (current or past) teaching a range of grade and ability levels (i.e., advanced, intermediate players, and/or beginners) and is currently teaching high school band;

- The individual has attended and/or participated in one or more of the following: graduate work in conducting, conducting symposia (one day or multiple day symposia), conference presentations/seminar/workshops on conducting, private lessons with a professional conductor and/or conducting faculty member in higher education; and

- The participant's educational background (undergraduate and/or graduate degrees) represents different institutions

Rationale for Criteria

For this study, I purposefully sought out experienced teachers (i.e., who have taught for more than 10 years) who have had time to develop their practice and who were

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interested in furthering their pedagogical development. In addition to seeking out experienced teachers, I was interested in studying individuals who have taught a range of grade and ability levels. The purpose of this criterion was to understand how the participants describe their use of application and adaptation of knowledge in different teaching contexts, including: working with different levels of repertoire and the application of pedagogical approaches for different age learners and ability levels. I was interested in participants who have actively sought out opportunities to further their pedagogical development and develop their conducting vis-à-vis: graduate work in conducting, conducting symposia, conference presentations/seminar/workshops on conducting, private lessons with a professional conductor and/or conducting faculty member in higher education. This criterion is important, as it assumes the participants have some experience reflecting on their growth and development as teachers, and the application of their knowledge and skill of conducting to their teaching practice. Finally, conducting teaching and learning is highly specialized and often rather specific to the conducting instructor; thus, I actively sought out participants whose educational background represented a variety of educational institutions. Table 1 provides a summary of the individual case profiles.

I contacted (via email) faculty members from three prominent Schools of Music in Michigan (Instrumental Music Education Professors and Directors of Bands) and asked them to nominate three to four individuals whom they felt matched the criteria for the study (see Appendix A). Once I received the nominations from them, I contacted all of the nominees to see if they were willing to participate in the study. Based on the responses, I choose four participants for this study. I chose to sample participants from

the State of Michigan because of the strong tradition and culture of instrumental music at the middle, high school, and collegiate levels within that particular state. The State has an association dedicated to band and orchestra: Michigan State Band and Orchestra Association (MSBOA) and there are numerous universities in the state that offer clinics, workshops, and graduate degrees in conducting. The prevalence of MSBOA and the various opportunities for teachers to continue their development in conducting offers an interesting and rich backdrop for this study. Furthermore, I chose this location because I am familiar with the music education culture in the Michigan public schools, and I developed a rapport with music teachers in the schools and faculty members from various universities in the United States during my time as a graduate student at the University of Michigan. My familiarity with the State of Michigan is such that I understand the culture of the music teaching and learning at the high school and university levels; however, I have never taught in the State. This "arms-length" familiarity provided me with the knowledge required to ask informed questions and draw meaning from the participants' responses; however, this familiarity is not overly personal such that it would present a researcher bias.

Research Setting

Each participant's school served as the primary research setting for each case. I used the data from the observation and semi-structured interviews to describe in detail (Chapters IV-VII) the participant's school and classroom environments.

Data Collection and Analysis

Sources of data included: participant interviews (three per participant), 1 participant focus group, 1 observation of each of the participants conducting and teaching

their high school ensembles, and 2 stimulated recall events with each participant using

previously recorded conducting footage. These multiple forms of data provided

opportunities for me to understand the participants' perceptions and descriptions of the

intersections between instrumental music teaching and conducting.

Table 1

Summary of Individual Case Profiles

Participant Pseudonym	Summary of Individual Case Profile
John Winchester	Gender: Male Teaching experience: 14 years Degrees: BMusEd, MM Additional conducting experience: Graduate School School location: Suburb of a large Midwestern City Current program population: 125 students
Theo Phillips	Gender: Male Teaching experience: 17 years Degrees: BMusEd, MM Additional conducting experience: Symposia attendee School location: Suburb of a large Midwestern city Current program population: 125 students
Sherry Reiter	Gender: Female Teaching experience: 21 years Degrees: BMusEd, MEd, MM Additional conducting experience: Graduate School School location: Suburb of a Metropolitan Area Current program population: 200 students
Simon Wayne	Gender: Male Teaching experience: 11 years Degrees: BMusEd, MM Additional conducting experience: Community Ensembles School location: Affluent Suburb of a Metropolitan Area Current program population: 200 students

Participant Interviews

Qualitative researchers typically use interviews as an inquiry method because it gives them the opportunity to understand the inner workings of people's thoughts and beliefs (Merriam, 2009; Patton, 2002; Yin, 2014). Patton stated:

> We interview people to find out from them those things we cannot directly observe…We cannot observe feelings, thoughts, and intentions. We cannot observe behaviors that took place at some previous point in time….We cannot observe how people have organized the world and the meaning they attach to what goes on in the world. We have to ask people questions about those things. The purpose of interviewing, then, is to allow us to enter into the other person's perspective. Qualitative interviewing begins with the assumption that the perspective of others is meaningful, knowable, and able to be made explicit. (pp. 340-341)

In order to develop a deep understanding the participant's perceptions and experiences, I elected to use the Seidman (2006) three-stage phenomenological interview model as the interview protocol for this study. This protocol is grounded in an attempt to understand the experiences and perceptions of the participant, and allows the researcher to analyze, and interpret the participants' descriptions and perceptions in relation to their teaching practice and context. Several other music education researchers have utilized the Seidman protocol to examine the lived experiences of music teachers (Brown, 2004; Edgar, 2012; Gavin, 2012; Furman, 2012; Vasil, 2013; Youm, 2013).

The Seidman protocol is a three-interview series that I utilized with each participant. The purpose of interview one was to gain background information from the participants, introduce them to the process of reflection, and help inform the development of interview questions for the second and third interviews (p. 36) (see Appendix C). During interview two (see Appendix D), I focused on the "concrete details of the participants' present lived experience" in the areas of teaching and conducting (Seidman,

2006, p. 36). For example, participants were asked to describe in detail their teaching practice and their experiences with teaching and conducting different levels and types of ensembles. During interview three (see Appendix E), I explored the participant's understanding of their experience. I asked participants to reflect on their practice and examine what meanings they draw from past experiences with conducting and teaching and how these experiences inform their present situation.

All three interviews were in-depth, open-ended and one-on-one. For interviews two and three, I used the data from the previous interviews and observation field notes to inform the questions. This approach allowed me to generate rich, in-depth descriptions (Roulston, 2014; Seidman, 2006). The timing of the interviews was dependent on the participants' schedules and took place over the course of two months. This allowed space between each interview and gave the participants and researcher time to reflect on the preceding interview (Seidman, 2006). I began each interview by reviewing the corresponding Seidman protocol with the participants, i.e., before interview one I summarized the Seidman protocol for interview one. Participants were given the purpose and research questions at the start of the data collection period.

One of the three interviews (interview two) took place in-person at each of the participants' schools. The remaining two interviews (interviews one and three) occurred remotely using computer-mediated communication (CMCs) and Voice over Internet Protocols (VoIPs). Roulston (2014) and Eros (2014) indicate that CMCs may include email, blogs, instant messaging, or VoIPs such as Skype and FaceTime (James & Busher, 2009; Salmons, 2010). While these protocols and technological tools are not ubiquitous among researchers in music education, a growing number of researchers in the field are

embracing these tools and using them in their research (Dammers, 2009; Waldron &

Veblen, 2008). Roulston (2014) stated that researchers must be judicious when using

these forms of online methods. In order to address issues of identity, confidentiality, and

the participants' access to, and skill level with a computer, participants were asked to

complete a short survey and sign a consent form outlining the parameters with using

CMCs and VoIPs (see Appendix B). While there are drawbacks to using this technology

(such as lack of in-person interaction), there are also advantages, in terms of being

unobtrusive, and providing opportunities for participants from different geographical

locations to communicate and interact without the inconvenience of traveling.

Focus Group

Patton (2002) defined a focus group interview as: "an interview with a small

group of people on a specific topic" (p. 385). Instrumental music teachers typically work

in isolation (Krueger, 2000; Sindberg & Lipscomb, 2005); thus, the focus group

interview provided an opportunity for the participants to interact and share their

perspectives. Focus group interviews have the potential to generate rich data, as they

allow participants to share multiple meanings and perspective on a specific topic (Bloor,

Franklans, Thomas, & Robson, 2001; Eros, 2014; Stewart & Shamdasani, 1990).

Citing Stewart and Shamdasani (1990), Fitzpatrick (2008) noted the advantages of

conducting focus group interviews as they:

> …allow the researcher direct interaction with participants in a manner that may
> allow more clarification of answers and observation of nonverbal gestures,
> provide large and rich amounts of data in the participants' own words, allow
> group members to build upon one another's ideas, offer flexibility of design and
> administration, be accessible to most articulate subjects, and provide data that is
> relatively easy to interpret. (p. 95)

For the purpose of this study, the focus group provided an opportunity for the participants to share their experiences with their colleagues, converse with individuals who have similar backgrounds and experiences, and potentially reveal and/or highlight the uniqueness or similarities of the participants' teaching contexts. The focus group interview (see Appendix F) took place after the first individual interviews were completed. As the participants teach and reside in various places across the state of Michigan, VoIP technology enabled them to participate in the focus group without the added time commitment of travelling to a mutually agreed upon location.

Researchers in other subject areas including social sciences, business, and athletics are beginning to explore the use of electronic protocols and technological tools for online focus groups (Burton & Bruening, 2003; Klein, Tellefsen, & Herskovitz, 2007; Link & Dinsmore, 2013 Tse, 1999; Walston & Lissitz, 2000). Online focus groups can occur through the use either asynchronous or synchronous discussion platforms. Asynchronous platforms allow participants to interact at different times, from different places, and at their own pace. Examples of asynchronous platforms include: online discussion boards, blogs, and closed discussion groups that are led by a monitor (Burton & Brueing, 2004; Link & Dinsmore, 2013). Burton and Brueing (2004) note that some of the advantages to asynchronous platforms include the ability for participants to maintain a level of anonymity, time for participants to reflect on what is being discussed, and the possibility of generating equal contributions from the participants within the discussion. Limitations of asynchronous platforms include high no-show rates from individuals who agree to participate, abbreviated responses, lower levels of dialogue, loss of verbal and

nonverbal cues, and the use of informal language (Burton & Bruening, 2004; Klein, et al., 2007; Link & Dinsmore, 2013).

Synchronous platforms more closely approximate face-to-face focus groups as the participants interact in real-time but in different places. Through this kind of platform, participants can engage in verbal and non-verbal "back-and forth" exchanges (Link & Dinsmore, 2013). Examples of no-cost synchronous platforms include: Skype, Google Hangout, and FaceTime. While these technologies are free, they do require participants to have access to high-speed Internet connections (Link & Dinsmore, 2013). Both platforms offer researchers and participants the benefit of being able to participate without the limitations and costs involved with travelling to a common and/or convenient point of interest. Despite this advantage, researchers must recognize the limitations in using these types of platforms, which include the following: participant fear of technology (Rezabek, 2005), a requirement that participants have access to a computer and high-speed Internet, and potential confidentiality issues related to an unsecure connection. It is important for researchers to consider how they will address the issues of protecting the participant's identity and the data within this type of focus group. For the purpose of this study, each participant completed a short survey and signed a consent form that included stipulations about using CMCs and VoIPs (see Appendix B).

The focus group was recorded (audio and video) to capture the verbal and nonverbal interactions between the participants and the researcher. In order to monitor the dialogue and ensure that each participant had an opportunity to speak, I asked the participants to raise their hand or use a prop to visually indicate that they had something to contribute to the discussion. This technique was useful, as there were times when

multiple people wanted to responds to a prompt and/or follow up to a point that had been raised.

Using an emergent approach, I generated the questions for the focus group following the first individual interviews, looking for common themes that could be used as the starting point for the discussion. Following the focus group interview, I revisited the themes that emerged from the focus group within the subsequent individual interviews with the participants.

Observation

In order to better understand and describe the case in context, I conducted in-person observations of each of the participants teaching and conducting. These observations took place during the school day and involved observing a class and/or a regularly scheduled rehearsal. As a researcher-observer, I positioned myself in a place where I would not disrupt the interactions between the teacher participants and the students. I video recorded the observation; however, the camera was focused on the teacher participant, not the students. In addition to video recording, I documented the happenings as well as my "in the moment" thoughts and observations through field notes.

Stimulated Recall

The professional practice of teaching is complex work that requires continuous acquisition and retrieval of knowledge (Berliner, 1986; Clark & Lampert, 1986; Leinhardt & Greeno, 1996; Sherin & van Es, 2009; Verloop, Van Driel & Meijer, 2001). Teaching demands in-the-moment decision making and problem solving skills in the context of a dynamic and changing environment; moreover, teaching is relational work and as such, is related to the individual experiences of the teacher, subject matter, and

context (Verloop, et al., 2001). Stimulated recall is a valuable methodology for accessing teachers' cognitive processes during practice; however, this tool has not been widely used in music education research, therefore the following section will outline the development and use of stimulated recall as a data collection tool.

One of the challenges associated with researching cognitive processes is collecting data from experts. Ericsson and Simon (1980) note: "As particular processes become highly practiced, they become more and more fully automated…intermediate steps are carried out without being interpreted and without their inputs and outputs using short term memory (STM)" (p. 225). Furthermore, the authors' note, what may be available for verbalization to the novice, may be unavailable to the expert due to automated nature of their thinking and processing. This challenge is particularly relevant to the study of teacher cognition as tacit or automated thinking and processing cannot easily be reported, and only heeded information can be verbalized (Taylor & Dionne, 2000).

Stimulated recall protocols can be traced back to cognitive psychology research in the 1970s and 1980s when researchers became interested in accessing participants' thoughts while engaged in a task. In stimulated recall protocols, the task or problem-solving activity is recorded and replayed to the participant. During the recall session, participants retrospectively self-report on their thought processes and emotions while engaged in the task. The recall session is an opportunity for the participant to 'relive' their actions in retrospect and verbalize their original thought process (Calderhead, 1981).

In order to gain insights into the decision-making and intuitive processes used by the participants while conducting and teaching, participants were asked to record and

upload video footage from their rehearsals to a private YouTube channel and they were asked to comment on their thoughts and reactions to their video using stimulated recall during the second and third interview. Prior to these interviews, I reviewed the video footage and generated a list of prompts and "exhibit questions" (Stake, 2010): "We give respondents something to examine and draw out a recollection, an interpretation, perhaps a judgment" (p. 97). I asked participants to revisit compelling moments from their footage and ask them to expand on their thoughts and actions. The second interview and stimulated recall took place in person and the third interview and stimulated recall took place remotely using VoIPs (Skype or FaceTime). I recorded the third interview using an audio and video recording device pointed at the computer screen to capture the verbal and non-verbal interactions with each participant. Ericsson and Simon (1980, 1984) cautioned that introspection protocols should happen soon after the task is completed so the thought processes are fresh and remain in the short-term memory (STM). Once the thought processes are stored in the long-term memory (LTM) retrieving them involves additional steps, which introduces additional variables for consideration. Thus, the third interview was scheduled within 72 hours after the footage was uploaded.

Validity and stimulated recall. The limitations and threats to validity associated with stimulated recall are important to recognize as the researcher can minimize them at the onset of data collection. Calderhead (1981) cites three factors that limit the effectiveness of stimulated recall: (i) participant anxiety and confidence levels, (ii) tacit knowledge, (iii) participant preparation prior to stimulated recall protocol. Calderhead stressed the need for the researcher to establish rapport with the participant prior to the study to help quell the potential anxiety and confidence issues that may arise when the

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participant reviews the footage during the recall session(s). Increased levels of anxiety and self-criticism from the participant can delay progress in the recall session(s) and negatively impact the participant's ability to articulate their thought processes. The challenges associated with tacit and/or automated knowledge may be difficult for participants to access and articulate verbally (Ericsson & Simon, 1980; 1984). The researcher must be careful not to prompt or influence responses from the participant; moreover, if the participant is unable to verbalize aspects of their tacit knowledge this must be documented accurately as data. Prior to data collection and recall sessions, researchers must instruct participants to focus on small units of representation of practice. Calderhead cautioned that failure to do this may lead to researcher bias and/or verbal cues during the recall session that influence how the participants report and interpret the footage during the recall session. In order to address the issues with validity surrounding the use of stimulated recall, I elected to use this protocol in the latter portion of the data collection period. By this time, I had a rapport with the participants and ample opportunity to prepare them for the use of this protocol.

Analysis

Multiple case analysis framework. Stake (2006, 2010) indicated that within multiple case study research, the single case must be described, understood, analyzed, and reported before addressing the similarities and differences across cases. Stake (2006) indicated that the purpose of the multiple case study is to understand the "Quintain". Stake defined the Quintain as: "a theme or research question running through multiple cases" (2010, p. 220). Stake (2006) added:

> A Quintain is an object or phenomenon or condition to be studied – a target, but
> not a bull's eye. In [multiple] case study, it is the target collection…To

understand it better, we study some of its single cases - its sites or manifestations. But it is the Quintain we seek to understand. We study what is similar and different about the cases in order to understand the Quintain better. (Stake, 2006, p. 6)

For the purpose of this study, the Quintain is the key research question: How do high school instrumental music teachers describe the intersections between instrumental music teaching and conducting?

Stake's multiple case study analysis framework uses specific language to signify the different steps involved in analysis. The Quintain refers to the key research question, and sub-research questions "preserve the main research questions for the overall study" (p. 40). For the purpose of the study, the sub-research questions are: (a) What key experiences do instrumental music teachers describe as being most meaningful to their development as teachers and conductors? (b) Which aspects of practice do instrumental music teachers perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors, and (c) What dilemmas of practice (Ball, 1993; Lampert, 1981, 1985) do instrumental music teachers perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors? Case findings refer to the salient points that surface after coding and studying each individual case. Case findings are described in terms of their relevance to each sub-research question. Assertions are formulated after the cross-case analysis is completed. The Assertions are based around the sub-research questions and represent common case findings that surfaced across multiple cases. According to Stake, "Each assertion should have a single focus, an orientation for understanding the Quintain, and evidence to support it" (2006, p. 71).

Analysis procedure. The data from observations (field notes), interviews, and focus group were transcribed and collated. I analyzed and coded the data using a four-stage coding framework that I devised and began my single analysis by examining each case and the focus group data individually. During the first stage of the analysis process, I carefully read all interview, focus group, and field note transcripts. I began my analysis by using open coding. I made notes in the margins of the transcripts and kept a code book to record and organize all of my codes. During this stage of the analysis, the codes were emergent. At the end of this stage, I examined all of the codes and grouped the codes into one of two categories: (i) personal context, i.e., codes that pertained to the participants' life story, personal and educational background, and (ii) aspects of teaching instrumental music, i.e., codes that pertained to instructional approaches, teacher knowledge, interaction with students, and conducting. During the second stage of this process, I revisited the data that were organized into the "aspects of teaching instrumental music" category. I used the Knowledge for Teaching (Ball, et al., 2008) framework to identify and analyze the use and application of, instructional approaches, teaching, and conducting knowledge in practice. I used the four domains of knowledge (Ball, et al., 2008): Common Content Knowledge (CCK), Specialized Content Knowledge (SCK), Knowledge of Content and Students (KCS), and Knowledge of Content and Teaching (KCT) to name and distinguish the different aspects of the participant's knowledge and instruction. I asked an external reviewer (Merriam, 2009) to review the transcripts and codes in order to provide a comparison and increase validity and rigor. The reviewer is an experienced music educator who holds a graduate degree in music education (MM). I provided the reviewer with my initial codes in advance to use as a reference. The

majority of the reviewer's codes aligned with mine, and when there were discrepancies, I returned to the data, re-examined my initial codes, and made modifications. Finally, following Stake's (2006) framework, I created a summary document for each case, where I outlined key information from the case, listed the case findings, and, based on the findings, outlined the prominence of each sub-research question within the case.

Once I coded and analyzed the individual cases, I proceeded with the cross-case analysis. This latter stage of analysis involved understanding how the case findings related to the sub-research questions. I organized the case findings according to sub-research using Stake's "Worksheet 5A. A Matrix for Generating Theme-Based Assertions from Case Findings Rate Important" (2006, p. 51) (see Appendix G). Using this worksheet I ranked each sub-research question-based finding for the individual cases using a High, Medium, Low ranking. This ranking was used to signify the prevalence of the findings within each case (see Table 2 and Table 3 in Chapter VIII). I analyzed the rankings across the cases and ranked the sub-research question-based findings based on their commonality and uniqueness across the four cases (see Appendix H). I formulated the Assertions based on the sub-research question based findings and how they related to Quintain (see Figure 3 for a visual representation of the complete analysis process). The findings are presented two sections: (a) Individual case, and (b) Cross Case Findings and Assertions.

Individual
Case Analysis

Multiple Case
Analysis

⟶ Quintain

1. Individual Codes
   and Findings based
   on the data

1. Organize Case Findings
   according to sub-research questions
2. Rank Individual Findings
   using for prevalence within each Case
   (High/Medium/Low)
3. Identify common Findings based on sub-research questions
4. Identify unique Findings based on sub-research questions
5. Formulate Assertions based on the sub-research question findings
   and determine how they relate to Quintain

Figure 3. Visual representation of Stake (2006) Multiple Case Study Analysis

Theoretical framework for analysis. The purpose of this study was to examine

the complexities of instrumental music teacher knowledge and explore how participants

describe the intersections between instrumental music teaching and conducting. Thus, the

Mathematical Knowledge for Teaching Framework (MKT, Ball et al., 2008) described in

Chapter I was used as a tool to organize and analyze the data. Keeping MKT in mind, I

approached and analyzed the data pertaining to teaching through the lens of the teaching

practice. In doing so, I looked for connections between CCK, SCK, KCS, KCT, and how

these conceptualizations of knowledge are used in practice (Ball et al., 2008). Tables 4a

and 4b in Chapter VIII will outline the specific aspects of instrumental music teaching

practice found in this study to align with the domains of the MKT framework.

Trustworthiness

Trustworthiness (Lincoln & Guba, 1985) was achieved through the use of multiple data sets: individual interviews (three per participant), a focus group interview, field notes from observations, and stimulated recall video footage. Stake (2006) indicated: "Triangulation has been generally considered a process of using multiple perceptions to clarify meaning, but it also verif[ies] the repeatability of an observation or interpretation" (p. 37). Multiple data sources allowed me to analyze how the participants' perceptions and experiences evolved over the course of the study. In addition, I utilized the rich and thick descriptions (Merriam, 2009; Patton, 2002) to contextualize the participants' experiences, perspectives, and worldview. An external reviewer (Merriam, 2009) was also asked to review the data and codes as a means of confirming the interpretation of the data.

Member Checks

Member checks (Stake, 2006) were used following the interview and focus groups to ensure accuracy. Carlson (2010) outlined the importance of "negotiating meaning throughout the entire research process" (p. 1112) and suggested that researchers can avoid certain traps associated with member checks by doing the following: pre-determining the extent of the transcription needed, pre-determining the preciseness of language needed, providing participants with choices (hard copy transcript, electronic copy, audio recording), and the purpose of the member checking process. Based on recommendations from several researchers (Carlson, 2010; Creswell, 1998; Creswell, 2009; Merriam, 2009; Stake, 2006) I explained the member checking process to the participants and stressed that the purpose of revisiting the data is to provide participants

with the opportunity to verify that their thoughts, opinions, and observations were accurately documented. The process of member checks provided participants with the opportunity to provided additional comments on their thought processes and responses during data collection. Finally, I gave each participant the option to either have their statements documented verbatim in the final manuscript or to have their statements edited to remove words such as, "ums, ahs, and pauses". All four participants elected the latter option.

Reflexivity

Merriam (2009) noted that qualitative researchers must acknowledge their biases, experiences, and assumptions with the research they conduct (p. 219). Lincoln and Guba (2000) defined reflexivity as: "…the process of reflecting critically on the self as researcher, the 'human as instrument'" (p. 183). My expertise as a middle and high school instrumental music teacher and my experience with additional study in conducting at the graduate school level afforded me with a unique perspective of the knowledge and skill required for teaching and the process involved in learning how to conduct. Furthermore, my prior knowledge and experiences enabled me to pose questions that were detailed and appropriate for the context of classroom instrumental music teaching.

Summary

The purpose of this study was to examine the complexities of instrumental music teacher knowledge and explore how participants describe the intersections between instrumental music teaching and conducting. The key research question guiding this study was: How do high school instrumental music teachers describe the intersections between instrumental music teaching and conducting? Sub questions include (a) What

key experiences do instrumental music teachers describe as being most meaningful to their development as teachers and conductors? (b) Which aspects of practice do instrumental music teachers perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors, and (c) What dilemmas of practice (Ball, 1993; Lampert, 1981, 1985) do instrumental music teachers perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors?

This qualitative study investigated the complexities of instrumental music teacher knowledge and how participants describe the intersections between instrumental music teaching and conducting. A multiple case study design (Stake, 2006) allowed me to examine the experiences of the participants in detail. Through this examination, I described the commonalities across the cases and the unique aspects of each individual case. Multiple data sources provided a rich description of the phenomenon and helped answer the research questions.

The following chapters (IV, V, VI, VII) will describe and present the individual cases and their findings. Each chapter will begin with a description of my initial communication with each participant, and an introduction of their educational and teaching background. Each chapter will conclude with a summary and visual representation of the codes and findings organized according to the sub-research questions. The chapters are presented in the order that was used when I conducted the first set of interviews, which was based entirely on the participant's availability. Following the individual case findings, I will present the cross case analysis and assertions (Chapter VIII). The final chapter will provide a discussion of the assertions in

the context of past research, along with implications, and connections for future research in music teacher education and conducting education.

Chapter IV

JOHN WINCHESTER

Individual Case: Chapter Organization

The following four chapters (Chapters IV, V, VI, VII) will present the individual

case findings and codes for each participant. In order to protect the identity of the

participants, pseudonyms have been used for their names and the names of the schools

where they teach. Each chapter is divided into three sections: section one provides an

overview of the participant's background, teaching responsibilities, and my observations

of their school and classroom teaching. Section two is organized in two parts (i) personal

context and (ii) aspects of teaching instrumental music. I organized the individual case

findings and codes into these categories to describe the unique experiences of each

participant and the aspects of practice that are consistent across the participants'

instructional practice. Following Stake's (2006) framework, I examined the individual

case findings and organized them according to the sub-research questions to highlight the

prominence of each question within each case: (a) What key experiences do instrumental

music teachers describe as being most meaningful to their development as teachers and

conductors? (b) Which aspects of practice do instrumental music teachers perceive and

describe as being related to the intersection between instrumental music teaching and

their development as conductors, and (c) What dilemmas of practice do instrumental

music teachers perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors?

Describing, understanding, and analyzing the individual cases in relation to the sub-research questions is the first step in understanding the Quintain and conducting the multiple case study analysis (Stake, 2006). I will conclude each chapter with a summary of the individual case findings and codes.

Section One

Background

A Director of Bands from a large institution nominated John as a potential candidate for this study. I contacted John via email, introduced him to the topic of this research project, and asked him if he would be interested in participating. John responded with interest and following the introductory email exchanges, John confirmed his interest and participation in the study and completed the consent forms and a brief introductory survey. Our first and third interviews were conducted using VoIPS (Skype video call). The second interview took place at his school during his planning period. Following our interview, I observed him teach two classes and concluded my visit by walking through the school to get a sense of the school environment. During our second interview, John and I realized that we have a number of mutual friends and colleagues in the music education field.

John has been teaching instrumental music for fourteen years. He is in his fifth year at his current position as the Band Director at Oak Park High School (OPHS). In addition to his role at OPHS, John also assists the middle school band director with the beginning band students. Prior to his position at OPHS, John taught for nine years in two

separate positions: (i) high school and middle school assisting (grade 5-12) for two years, and (ii) high school and middle school assisting for seven years. John took off a year from teaching between his second and third years in order to complete his master's degree. During his master's degree, John was in residency for the academic year and held a one-semester assistantship with the music education and conducting departments. John attended the same institution for his undergraduate music education degree and was a trumpet major. John is an accomplished music educator and was recently invited to have his ensemble to perform at a state music conference.

John recalled that his first experience with conducting occurred during his undergraduate studies. As a music education student, he was required to take an introduction to conducting course. The members of the class formed a lab and each student had an opportunity to conduct the ensemble during the semester. John thoroughly enjoyed the class and in his senior year, he decided to pursue an additional conducting class at the graduate level. Through this opportunity he was able to conduct and rehearse the second level ensemble at the university. John reflected back on his undergraduate studies in music education and recalled that his conducting courses addressed the skills aspect of conducting, and his music education methods courses addressed pedagogical concepts surrounding teaching instrumental music, including rehearsal techniques.

The capstone experience in John's undergraduate degree was his student teaching placement. Although his student teaching placement took place in the winter/spring semester of his senior year, due to scheduling issues at the high school the co-operating teacher asked John to come and teach the second band during the fall semester prior to his official student teaching placement. John described the placement as a top-notch

program and qualified the experience as a being a "sink or swim" situation (interview,

October 6, 2014). He felt this way because he was expected to teach and conduct an

ensemble comprised of sophomores, juniors, and seniors, by himself until January when

the students were divided into three separate ensembles.

Over the course of John's career, he has pursued additional opportunities to learn

more about conducting, including taking private conducting lessons during his master's

degree, attending conducting symposia, and participating in an advanced symposium as

well. During the advanced symposium, John conducted wind chamber repertoire

including *Serenade No. 10* by Wolfgang Amadeus Mozart and the *Petite Symphonie* by

Charles Gounod. John recalled his mentor teachers from his undergraduate and graduate

studies encouraging him to pursue the various symposia.

Teaching Responsibilities

OPHS is an established high school in a suburb of a large midwestern city. The

school district is relatively small, with 3300 students in total. OPHS currently has a

population of 1150 students, and 29% of the student population participates in the free

and reduced lunch program. Despite the suburban location of the school, the student

demographic is diverse: White, 61%; African-American, 20%; Hispanic, 8%; Asian, 6%;

Multiracial, 4% (www.greatschools.org). The school offers a range of Advanced

Placement courses, and many graduates attend Ivy League universities (interview,

October 6, 2014).

John grew up in the same suburb where OPHS is located, and attended OPHS as a

student himself. When he was hired for the director position, he took over from his

former high school band director. Under John's leadership, the current band program at

OPHS consists of 125 students and is comprised of: Concert Band (Freshman and Sophomore students), and Symphonic Band (Junior and Senior students), Marching Band, and Jazz Band. The Marching Band is an extracurricular ensemble for the members of the Concert and Symphonic Bands. In addition, John conducts the pit orchestra and teaches two hours a day at the middle school.

Classroom Observation

I arrived at OPHS at the start of the school day. The school is located in a beautiful suburb that is home to a large university. OPHS is located around the corner from the university campus, and as I drove towards the high school, I noticed that the university flags adorned the streetlamps and flagpoles. My first impressions of OPHS were positive. The performing arts wing of the school is located in the renovated section of the main building. As I entered the music room, I was struck by the sense of tradition and community in the band program. Display cases were filled with student awards and photos dating back to the school's inception. The room was very organized, the chairs and stands were set up ready for the ensemble, and the announcements for the day were projected on a screen. Despite John's laidback manner, it is clear that organization is important to him. I met John first thing in the morning during his planning period. He was friendly and eager to speak with me about his teaching.

Following our interview, students started to arrive for Concert Band. As they entered the room, they were aware of the established routines and expectations. They proceeded to set up and warm up without prompting from John. The students engaged with John as they entered the room. Some students simply greeted him and others shared a short anecdote about their weekend with him. It was clear that John has a strong rapport

with his students. He was interested in talking to them, and they were happy to reciprocate. His demeanor was relaxed and jovial, and his interaction with the students was positive. The students looked happy to be there and were excited to play their instruments.

From what I observed, the atmosphere in John's classroom could be characterized as an environment where students feel supported. There are clear expectations, and students strive to achieve their best (field notes, November 11, 2014). During the Concert and Symphonic band classes, I observed John teach a mini music history unit and conduct various pieces of music. In both classes, John projected the learning outcomes, goals, and objectives on the screen. He indicated that this is a new initiative that was encouraged by the building principal to help facilitate student understanding. John has embraced this initiative and cares deeply about fostering student understanding on both a micro and macro level. The learning objectives and goals reflected John's desire to help students make connections within music and across the curriculum. During the music history lessons, John made a point of explaining to students how history and theory are relevant to and inform performance. Throughout the two rehearsals, John used metaphors and analogies to help students make connections to other contexts and to inform their playing.

Section Two: Personal Context

Identity: Hello…. and what do you do?

Over the course of my conversations with John, the overarching theme of identity was prevalent in his perspectives and recollections. During our first interview, I asked John to talk about his decision to pursue additional work in conducting throughout the

course of his career. I wondered, given the number of topics that pertain to teacher

education and professional development, why he has continued to seek out additional

instruction in conducting. Initially, he was not sure how to respond and commented: "I

guess I have never really thought about it…" (interview, October 6, 2014). He reminisced

and spoke fondly about the performative aspects of being a musician and how he missed

playing his primary instrument, the trumpet. He went on to talk about the teacher-

performer role that instrumental music teachers assume:

> Ultimately, I'm a musician, maybe now that I'm thinking about it, maybe I had
> lost a little bit of the feeling of participating and playing a trumpet in a group and
> I think that being a teacher and a conductor is the most unique job in the school
> because I perform with the kids. My performance, as a teacher, affects the
> students' performance. There really isn't any other job, in our public schools
> where the teacher performs with the kids. I guess, maybe I have more influence
> over that as a conductor. There really is no other feeling to me like that in the
> world. And I feel so lucky that I get to do that with students on a fairly regular
> basis. I think it's what gives me the most satisfaction in a job is enjoying that
> process and feeling. (interview, October 6, 2014)

John spoke at length about his musicianship and his desire to continue honing his

knowledge and skills as a performer, teacher, and conductor. During our conversations,

John used the word 'hobby' interchangeably with conducting and said in passing: "I think

of it just like a hobby. The job is undue because it's a profession but it's also a hobby: it's

my life" (interview, October 6, 2014). I asked John to talk more about his identity as a

teacher, conductor, and musician. How does he identify himself to others? His response

was complex and speaks to the multiple layers and factors involved in teaching music:

> You know you kind of run a fine line, especially when you're teaching public
> school because I do feel like it's part of me, but at the same time like I don't want
> to make it about me. Obviously there's part of me that enjoys what I do from that
> standpoint but I couldn't do it without the kids, it wouldn't work. So it's not about
> just the technique or the craft, it's about the collaboration with students. It's about
> the teaching and it's about the process that really makes it joyful. You know and
> so many band directors fall into the thing where it kind of becomes about them

and it's somewhat ego driven. But I try to make it more about the kids than about me.

When I'm describing what I do to people who have no idea, I've found myself saying, well…. I'm a teacher…. I'm a music teacher….. I'm a conductor, it depends who I am talking to I guess. It is hard to explain to somebody who doesn't do what we do, there's such a different skill set to be a conductor than to be a teacher. And not a different skill set, I guess, maybe just a ...yeah I guess it's a different skill set or an overlapping skill set anyway.

Obviously you have to be a teacher first, to stand up in front of all of those kids. You have to know how to manage people and you have to know how to kind of deliver instruction like an educator. But I think what separates us is our constant use of formative assessment. We're constantly taking in information, assessing what we're hearing and seeing, and making evaluations and assessments basically from the time that we start class to the time that we end. And then even after. I've had other teachers in my building observe me teach and they're just blown away. And I don't think anything of it and you wouldn't think anything of it because this is just what we do, but classroom teachers who come in and watch us kind of do our thing in real time are usually pretty astounded and blown away at what we can do. We're hearing things that they don't hear and we're addressing things in a way that they have no idea how to address them. It kind of seems like magic to a lot of people I think. (interview, October 6, 2014)

The theme of identity and self-identification continued to surface in the subsequent interviews and focus group. During the final interview, John reflected on his past experiences and on the evolution of his career. I asked him if his definition has changed over the course of his career and how his goals impact how he perceives himself:

Ultimately I think of myself, I guess, as a music teacher. My goal is to have students learn how to be musicians. Part of their education is being in an ensemble and learning ensemble skills and that's part of learning to become a musician. And I think as the teacher, I obviously need to have conducting skills to I think achieve that. (interview, November 17, 2014)

Professional Growth

Past experiences. During our first interview, John spoke at great length about the impact his unique student teaching placement had on him at the start of his career. In

addition to this experience, he referenced his experiences from his undergraduate

coursework in music education that were helpful, and had a lasting impact on his early

years as a teacher.

> I think the classes that helped the most were conducting class, and any time you got in front of a group of students and actually kind of had to be a conductor. Even if it was in front of a lab group of twenty peers or in front of, you know, when you're student teaching. I think that was most valuable or even just sitting in a rehearsal but the context changes so much when you go from that side to this side of teaching. When you're playing in an ensemble, you don't necessarily think about what the conductor is doing, I mean I guess you sort of do if you're going to be a teacher, but not certainly as much. And then when you get on the other side [teaching] it's like okay….this is the real deal. (interview, November 10, 2014)

I asked him to think back to his first year of teaching and describe what that looked like.

He told me a story of finding a festival recording from his first year of teaching: "I heard

so many things where I thought: oh my gosh, how did I let that happen? There were

wrong notes, super huge balance issues, just kind of yuck all around" (interview,

November 17, 2014). John described the challenges he faced with being able to hear and

respond to the ensemble, make musical decisions, and connect with his students:

> I think that's where I've taken the biggest step forward. I feel like I finally have some ability to affect change [in the music]. Earlier in my career I was just kind of holding on for dear life, and I wasn't able to take in what I was hearing and make adjustments musically to what I was doing from a conducting standpoint. I am able to do that now, and I have also gotten better at making connections with the students and the music. I was awful making those connections at a young age. I've gotten better at being a better teacher—being able to have that relationship with the kids, the music, and with myself. It has made me much more self aware, which makes me a better teacher. (interview, November 17, 2014).

John described that over the course of his career, his development as a teacher has been

influenced by the different teaching positions he has held, the interactions with different

students, and his expectations of himself and his students. He spoke about the importance

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of observing other teachers in their classrooms and rehearsals and how those experiences impact his actions and interactions with students.

> I think there are so many things to consider in terms of how to run a class. When I was first teaching, I overlooked a lot of those little details… writing an order on the board or having an expectation of what to do when the students come in the room, how they get their instruments out, how they are going to warm up. It's been valuable for me to watch other people's rehearsals, even from something as simple as a management standpoint. (interview, November 10, 2014)

Motivation. Throughout the study, John spoke about what motivates him professionally. He cited the importance of having student teachers and participating in research studies as his motivators. The mentor/mentee relationship and the day-to-day challenge of being observed by someone else are elements that motivate and challenge John. Having student teachers and participating in research are activities that involve forming and maintaining professional relationships, which is important and inspiring to John.

Professional development. John identified that one of the challenges in his teaching is finding the balance between building a relationship with students while at the same time, holding them accountable for their actions. He indicated: "I am always striving, and looking for ways to get the most out of students… how can I get them to achieve their maximum potential?" (interview, November 17, 2014). John actively seeks out opportunities to observe master teachers as it gives him an idea of what students are capable of. These types of role models are people who have a "proven track record as educators" (interview, November 17, 2014). Interestingly, John noted that when it comes to professional development or continued studies in conducting, he prefers a hands-on approach to learning, like a symposium. In addition to symposia, he also spoke of attending conferences and seeking out workshops that focus on repertoire, rehearsals

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skills, and observing rehearsal labs where university professors conduct high school ensembles.

Aspects of Teaching Instrumental Music

Relational work: **It is all about the students**

One of the main themes that surfaced throughout my interactions with John was his commitment to his students. On numerous occasions he referenced the relationship he has with his students and the supportive learning environment he tries to foster. He talked about knowing his students as people, knowing their families, and watching their growth from middle school students to adolescents: "….that is the kind of relationship you bring to the music… there is nothing you can do to replace that" (interview, November 17, 2014). He also spoke of the collaborative nature of the large ensemble and the process of starting a new piece of music and finally, performing it in front of an audience. He talked about how informal and personal relationships contribute to the learning process along with knowing students' ability levels on their instruments. During our final interview, I presented John with an exhibit question (Stake, 2010) and asked him to draw out a recollection or interpretation based on what he had previously said. The quote that I asked him to reflect upon, which I had transcribed from a previous interview, was as follows:

> There really is no other feeling to me like that in the world. And I feel so lucky that I get to do that [making music] with students on a fairly regular basis. I think it's what gives me the most job satisfaction. (interview, October 6, 2014)

His response revealed the value he places on his relationships with students.

> If I didn't have that relationship I don't think it would be quite as satisfying of an experience. Knowing the kids the way that I know them and having previous experiences with them, that's where my job satisfaction comes from. Being able to share in those experiences with people I consider…. I don't want to use the

word friends but I consider them, colleagues who I spend, an hour of my day with is so rewarding. (interview, November 17, 2014)

During the focus group meeting, John talked about the vulnerability that is required when working with students. In particular, he noted that when teachers model vulnerability and a genuine commitment to the moment, it resonates with students and encourages them to be vulnerable and expressive through music.

Conducting

Conducting craft. John distinguished the aspects of conducting into three categories: conducting craft, aural image, and learned communication. For John, conducting craft refers to the "basic general technique" of conducting, which includes the technical and kinesthetic aspects of conducting. John recalled a time when he tried to apply a lesson from his graduate conducting classes to his teaching practice.

> When I was in one of the graduate [conducting] classes, I would videotape myself [conducting] and bring it in and work on it with a conducting grad. He would turn the volume down, we wouldn't even listen to ensemble, he would say just watch….all you're doing is a four pattern. Your face is doing nothing and your left hand is basically, every once in a while, mirroring or queuing. How can that be more artistic? How can that be more motivating and inspiring to students? That is something I think about all the time, trying not to just conduct in a pattern. (interview, October 6, 2014)

His recollection of this experience highlights the various components that are involved in learning how to conduct. Within the domains of technical skills, there are fine grain components that must be learned, understood, and refined including one's ability to know and use appropriate beat patterns and stylistic gestures. Similarly, within the kinesthetic skills, there are fine grain components including one's ability to move free of tension, move through various planes (horizontal and vertical), use two arms/hands simultaneously to communicate time and musical line, and use the face to show musical

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style, color, and phrasing. Teachers and conductors must have a strong mastery of each of

these independent, fine grain components before using them simultaneously. John's

desire to conduct musically and represent the music through his gesture rather than

simply beating time is an ongoing goal with his conducting. Furthermore, his ongoing

development in this area highlights his mastery of several technical aspects of conducting

and his continued pursuit to improve his kinesthetic skills in order to synthesize both

components into a gesture that is expressive and communicative. Within my field notes, I

wrote that John displayed a strong mastery of the technical kinesthetic skills required for

conducting. His gestures were clear and he was able to communicate musical contour,

style, phrase shapes, and dynamic contrast to his ensemble through both verbal and non-

verbal communication.

        Aural image. In order to fully understand what John goes through when he reads

through a score and prepares for class, I asked him to describe his process and what

informs his conducting gesture.

> I can hear it. I look at a score in the beginning, and I know what it's supposed to
> sound like. I think that's one of the things that is really challenging, because, as
> you're conducting, you have that aural image in your brain and then you're
> listening, and you're trying to do all of those things together. That's really the big
> challenge is being able to process all of those things together. (interview, October
> 6, 2014)

John talked about his concept of the piece: what the music will sound like, the nuances,

and the interpretative decisions he makes before working on the piece with students. All

of these decisions constitute his interpretation, the aural image. This knowledge informs

the type of gestures he shows the ensemble, and it informs his in-the-moment assessment

of what the students are playing:

I think one of the most important jobs of a conductor and teacher is your ability to listen to an ensemble, assess what they're playing and then give feedback that will be helpful. And the thing that makes that most challenging is that you have a class of seventy kids—not everybody is playing all the time, and certainly not everybody is playing the same thing. So I think as a conductor you have hyper listening skills and at the same time, know exactly what it's supposed to sound like based on the score and then you give the appropriate feedback that's going to either correct an issue or help them better understand a concept. (interview, October 6, 2014)

Learned communication. During the focus group meeting, the participants talked about what they do on a day-to-day basis in the classroom and how they prepare for classes and rehearsals. I asked the participants if their conducting informs their teaching or vice versa. John addressed the aural image along with the element of teaching students how to respond to non-verbal communication, in short, teaching students a secondary form of communication:

My teaching informs my conducting and I'm actually really glad I'm doing this research. I was thinking about it today and I was actually thinking sometimes it's so easy to conduct a phrase…. and you're trying to show a four measure phrase and the student takes a breath and you stop and you say okay take your pencils out and mark in a breath here. It's so easy to do that but I think as musicians it's so much more effective if we can teach them how to communicate with us as conductors so that we don't even have to stop and talk. Like I said my teaching informs my conducting because I have ideas of what I would like them to do and I would rather show them with a gesture or with my conducting rather than having to stop and say it to them verbally. (focus group interview, October 23, 2014).

John's statement highlights the duality of teaching and conducting. When he is conducting, he is teaching students how to apply stylistic and technical considerations to the music. At the same time, he is teaching his students how to interpret a non-verbal form of communication that is efficient and effective in the context of musical performance. In both cases, John is teaching his students how to interpret and apply feedback to their playing, how to assess what they are doing in-the-moment, and how to make adjustments based on his gestures.

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Instructional Approach

  Decision-Making: What, when, and how. During our second interview and
stimulated recall sessions (interviews two and three), I asked John to systematically
describe the thinking and decision-making process he uses when he responds to the music
and the students in the moment. Essentially, when the music does not match his aural
image (CCK), how does he know how to respond in the moment (SCK)? Is his feedback
guided by his teaching and reflected in his conducting or vice versa?

> I think many people can hear something and say: this is not what it is supposed to
> sound like. What separates an experienced conductor is somebody who is able to
> really fine tune things. So to answer you question, it depends. If it's a counting
> issue, I have a set of tools I draw from. If it's a pitch issue, I have a different set
> of tools that I would use to try and fix it or teach the concept. (interview, October
> 6, 2014)

  During the stimulated recall sessions, it was difficult for John to separate his
teaching and conducting. John indicated that he draws from multiple tools and strategies
simultaneously in the moment. As he watched his tape, he discussed what he was doing
with his gestures, and what influenced his gestures and verbal instruction. John utilizes
Knowledge of Content and Students (KCS) (Ball, et al, 2008) as he anticipates student
needs and delivers his instruction and gestures in a systematic manner:

> There's a question and answer thing going on but then there's the dynamics and
> the lower texture that I'm trying to show them with space. And then there are a lot
> of times where the length of the note is shorter so I'm showing them more of a
> stop gesture with the baton. And then obviously, I am trying to show them the
> dynamics and the style in which to play based on how I'm conducting. (stimulated
> recall, November 17, 2014)

After the final stimulated recall session, John reiterated the complexities of listening and
making decisions in the moment, and indicated that the skills and knowledge he draws
from are ongoing and circular.

Given the number of things that John is thinking about and doing in the moment, I asked him to take a step back and discuss the overarching goals that inform his teaching and conducting. What is the intent of his Knowledge of Content and Teaching (KCT) (Ball, et al., 2008) and how does this impact student learning? He spoke at great length about the importance of fostering student independence and autonomy.

> The ultimate goal for me is having the students develop some type of independence. If you're telling them everything, what are you actually teaching? To some extent it is valuable but I think looking for more of a long term, lasting impression or lasting experience for them is important. It's about helping them become intuitively musically or to work with a conductor to make music together rather than being the conductor who always stops and says: 'Take out your pencils and write a breath here, and write a crescendo here'. (interview, November 17, 2014)

Section Three

Summary

John is an experienced instrumental music teacher who has been teaching for fourteen years. In his current position at OPHS, he oversees the band program and directs ensembles ranging from concert ensembles to marching and jazz bands. In addition to his responsibilities at the high school, John assists at the middle school. OPHS is an established high school in a suburb of a large Midwestern city with a diverse student body. John grew up in the district where he currently teaches and attended OPHS as a student.

John indicated that his past experiences with student teaching and his studies in conducting had a tremendous impact on his development as a teacher and conductor. He enjoys working with student teachers in the capacity of a mentor teacher, and indicated these experiences contribute to his professional growth. He views conducting as an extension of his musicianship and as a hobby. He felt that the skills he uses for teaching

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and conducting are not mutually exclusive; rather, they overlap. John self identified as a teacher and noted that his teaching informs his conducting. He is a thoughtful educator who places importance on the relational aspect of teaching and learning. John revealed he struggles with finding a balance between having a strong relationship with students and being able to hold them accountable for their actions. In his classroom, students come first and he works hard to create a supportive learning environment for all students.

Throughout my interactions with John it was clear that he uses the four domains of knowledge for teaching (CCK, SCK, KCS, and KCT) to inform his instructional strategies. John indicated that his teacher and conductor knowledge and skills (aural image, responding to the music, responding to students, showing gestures that match his intent, anticipating students needs, and making formative assessments) are integrated. It was difficult for John to identify specific aspects of his thought processes and decision-making in detail as his knowledge is highly automatized. His in-the-moment decision-making is guided by the ongoing and circular nature of drawing on knowledge and responding to the students and music. John noted that listening and responding in the moment is challenging work. It demands he draw on his musical, conducting, and teaching knowledge and skills in the moment and respond effectively either verbally or through gesture.

The summary of the codes and findings are organized according to the prominence of each sub-research questions (Figure 4). The figure is intended to highlight the salient findings and codes for John Winchester's case that correspond to the sub-research questions.

Sub-research Question (a): What key experiences do instrumental music teachers describe as being most meaningful to their development as teachers and conductors?

Findings

Identity

Professional Growth

Codes

Past Experiences

Motivation

Professional Development

Sub-research Question (b): Which aspects of practice do instrumental music teachers perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors?

Findings

Relational Work

Conducting

Instructional Approaches

Codes

Aural Image

Learned Communication

Codes

Decision-Making

Sub-research Question (c): What dilemmas of practice do instrumental music teachers perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors?

Findings

Relational Work	Conducting	Decision Making

Codes

Aural Image

Learned Communication

Codes

Instructional Practice
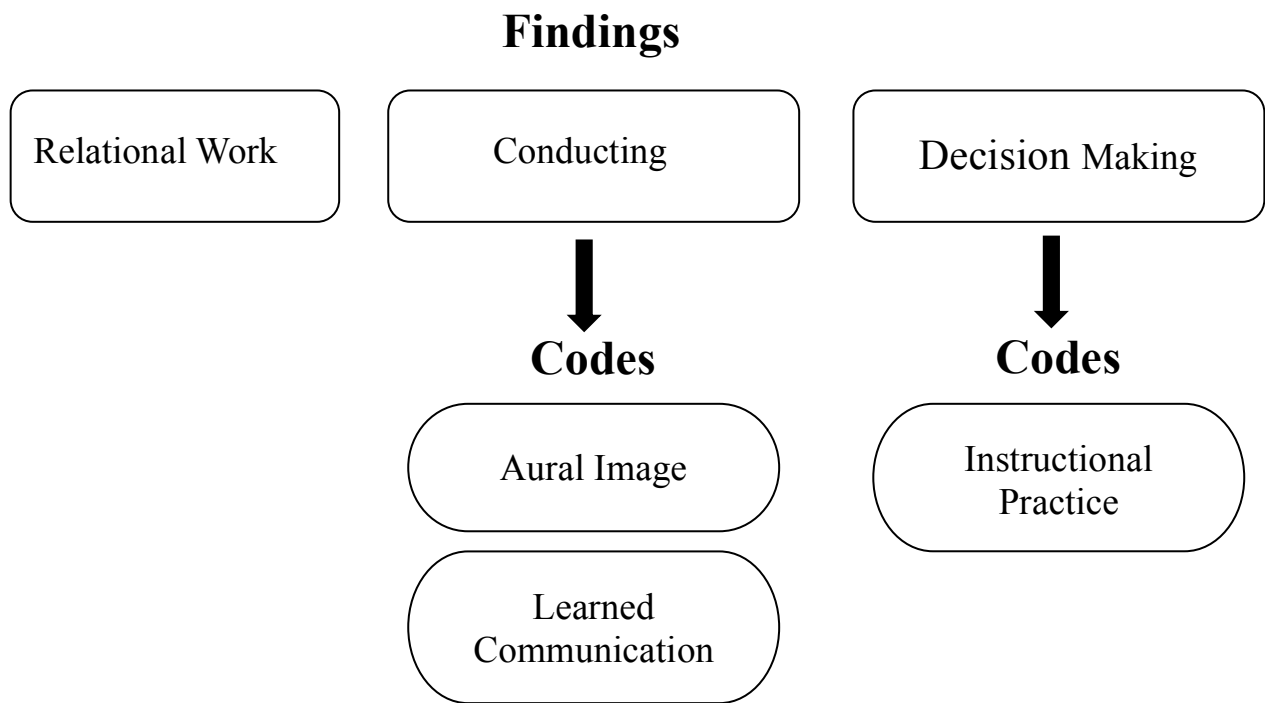
Figure 4. Summary of codes and findings: Case One – John Winchester.

Chapter V

THEO PHILIPS

Section One

Background

Theo was the first participant to respond to my invitation to participate in this research study. He was enthusiastic about the project, and we exchanged several emails about his teaching and conducting background leading up to the formal data collection process. Our first and third interviews were conducted using VoIPs (Skype video call). The second interview took place at his school during his planning period at the end of the day. Prior to our interview, I observed him teach two classes and spent time walking through the school to get a sense of the school environment at Rothchild High School (RHS).

Theo holds a bachelor of music education degree with a minor in psychology, and a master's degree in music education. He completed his master's degree over the course of multiple summer sessions and purposefully sought out a program that focused on delivering course content through a hands-on approach. Theo is in his seventeenth year of teaching and his ninth year at RHS. Prior to his appointment at RHS, he held a seven-year position at another school teaching high school band, music appreciation and jazz band, and his first year of teaching was spent at the middle school level where he taught band and choir.

During our first interview, I asked Theo to reconstruct his early experiences with music, teaching, and conducting. Theo was the drum major in his high school marching band and played the clarinet in concert ensembles and throughout his undergraduate degree. He recalled that being the drum major sparked his interest in conducting. He described how he initially learned how to conduct:

> I initially learned to conduct by just watching, mirroring, and mimicking videos. I also went to drum major camp and got a lot of pointers there. And then years later, I realized how wrong that all was. (interview, October 8, 2014)

I asked him to elaborate more on what he perceived as being 'wrong'. He added:

> When I got to college and I started taking the conducting classes, I found I was breaking a lot of bad habits and really kind of starting all over again. So I think that I was more of that passionate conductor who just loved the aspect of being the person in front of the whole group, as opposed to learning how to be that communicator. (interview, October 8, 2014)

After his undergraduate degree, Theo pursued further studies in conducting by participating in conducting symposia, taking private conducting lessons with conducting faculty, and taking a graduate-level conducting course during his master's degree. For over a decade, Theo has continued to pursue additional experiences with conducting. He currently holds a leadership position with the state music organization as the conducting symposium chairperson. I asked him what led him to pursue additional courses and experiences with conducting and he replied: "I wanted to make it more of a hobby, I guess" (interview, October 8, 2014). He went on to add:

> I think I was probably in my fifth or sixth year of teaching. The state college used to give us tapes from our festival performance and they would have established conducting faculty talk into a microphone and give feedback on your conducting. I remember watching one of my tapes and I did not listen to the comments, I just muted it and I started watching myself, and I thought: 'What I'm doing right now does not reflect the music whatsoever. And I started discovering that I was very good at talking to the kids about the music and explaining to them how I wanted the phrase to go or how the release should be, etc.' That is what led me to think

there's got to be a non-verbal way to communicate all of this and hopefully it will save us time in class. The minute I started focusing on what I was doing and how I was communicating the music I perceived in my head in a non-verbal manner, the more efficient our rehearsals got, and the more music we were able to make. (interview, October 8, 2014)

Theo talked at length about the realities of a being a classroom music teacher and the range of topics teachers are expected to be well versed in: assessment strategies, administrative duties, and working with band boosters (parent groups). Given these diverse roles and expectations, I asked him why he continues to pursue additional instruction in conducting:

Constant. Conducting is the one thing that won't change it is the constant. When I finally got the opportunity to choose the kind of professional development I wanted, I knew it had to be focused on that constant – how to improve my communication through music with the students, the audience, and myself. (interview, October 8, 2014)

I asked Theo to elaborate on his use of the term "constant" in reference to his teaching and conducting. In response, he talked about how conducting lies at the center of his practice, as he uses conducting to communicate and teach concepts to the students throughout the day. Furthermore, he noted that, despite student turnover year-to-year, and changes in the ability level of the ensemble, the primary way he communicates, interacts, and teaches the ensemble is through conducting.

Teaching Responsibilities

RHS is a large suburban high school located on the outskirts of a large city. The school and school district reflect a high income-earning community. Many of the students who attend RHS have parents who hold professional careers including medical doctors, lawyers, and university professors. RHS holds high academic rankings at the state and national levels. The racial demographic of the study body is: White, 73%; Asian, 14%;

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African-American, 7%; Hispanic, 4%; and multiracial, 1%. Of the total student

population, 17% participate in the free or reduced lunch program

(www.greatschools.org).

When Theo was hired for the Director of Bands position at RHS, he replaced his

predecessor who held the position for 32 years. Many of the teachers at RHS remain at

the school until their retirement, as the programs, students, and school climate are very

strong. The music department has nine performing ensembles: four choirs, three bands,

and three orchestras. The school population is 1300 students, and one quarter of the

population are involved in the music department. Theo conducts the three concert bands:

Freshman Band, Concert Band (Sophomore – Senior level students), and the Symphonic

Wind Ensemble (an auditioned ensemble that performs advanced-level repertoire). All

three ensembles combine to form the school marching band during the fall. Theo

conducts one full rehearsal with the marching band once a week after school and

rehearses the individual ensembles during their class period. During football season, the

concert ensembles rehearse marching band music during the class periods and the

evening rehearsal. In addition to his work at RHS, Theo teaches at the middle school for

two hours everyday.

It is clear that Theo holds strong beliefs about the culture of his band program and

the overall student experience:

> The culture that we foster is one of unity, family, and togetherness, because no
> matter what ensemble the students are in, they are part of this incredible program.
> I try to instill in them that what they are a part of is bigger than then just one
> ensemble because no matter what band is performing, that is the group that is
> representing the good will and talent and spirit of Rothchild High School.
> (interview, October 8, 2014)

One unique aspect of the music program is the emphasis Theo places on bringing in contemporary composers to work with the students. The proximity of the school to a large state university, coupled with Theo's work with the state music association, means that he has access to composers and professional musicians. If in-person visits are not possible, Theo has composers work with the class virtually through Skype. During these interactions, the composer and musicians teach the students about the ongoing and active process of being a musician.

Classroom Observation

RHS was built in 1994 and is located on the outskirts of a suburb and large city. The school is situated in a quiet area that is surrounded by open fields and residential homes. As I approached the building, I was struck by the size of the school, the modern buildings, and the care that goes into the upkeep of the school and grounds. As I walked down the halls towards the band room, the wide corridors were spotless and empty. Students were busy working in their classrooms and labs. I arrived in the middle of the Symphonic Wind Ensemble rehearsal. The students were very focused and engaged. Looking around the classroom, I immediately got a sense of the community and family atmosphere that Theo had described. The walls were covered with photographs of students, conference participation plaques, and student awards. Around the room, Theo had affixed posters promoting upcoming concerts encouraging students to attend these events. Educational and musical periodicals were available in the rooms for students to access and browse. Following the Symphonic Wind Ensemble rehearsal, I observed Theo's Concert Band rehearsal.

In both rehearsals, Theo projected the announcements, rehearsal goals, and the time allotment for each piece on the screen using PowerPoint. The atmosphere in the classroom was positive and engaging. Laughter ensued when Theo used a *Star Wars* analogy to help get a point across to students. Theo also used the Socratic method to help students think broadly and make connections to musical, and cross-curricular concepts. Theo's demeanor with his students was kind, empathetic, and sincere. His comments and interactions with the students were thoughtful and lighthearted. He held informal conversations with them as they entered and left the room, and it was clear that the students were happy to be there. The students knew the class routines and expectations, and they were enthusiastic about giving their best. During the rehearsals, Theo used his conducting gestures to show the students how to listen across the ensemble. A large emphasis was placed on getting the students to understand their individual parts in relation to the entire ensemble. In short, Theo made it a priority to instill and reinforce strong musicianship skills with his students.

The following section will describe in detail the findings and codes for this case. The section is organized into two parts: (i) personal context and (ii) aspects of teaching instrumental music. I will conclude the chapter with a summary of the case findings and codes. The summary figure is organized according to the sub-research questions to highlight the prominence of the findings and codes within this case.

<div align="center">**Section Two: Personal Context**</div>

Identity: A lot to live up to…

Throughout the data collection process, I asked the participants to describe how they self-identify and define for me what they do in the classroom. In all three interviews

and the focus group, Theo was consistent with his responses and indicated that he self

identifies as: "….that all around musician who has the ability to reach out to others—

share with them the passion that I have for music and show them how it enriches my life

in almost every aspect" (interview, November 17, 2014). He spoke about the many roles

he holds as a teacher, conductor, musician, advocate for students and the arts, and a

community member.

Public figure. One of the major themes that came out in Theo's descriptions was

the public nature of his job. He spoke at great length about the expectations and

responsibilities that are associated with his position and the complicated nature of being a

public figure. For Theo, the public nature of his position impacted his commitment to

teaching and his dedication to improving his conducting craft. He felt that his identity as

a person and professional were interwoven and inseparable:

> I truly believe that the [conducting] craft is every bit of who I am and my
> existence. Unlike most professions, when you go out into the community you're
> seen as the conductor. And so the craft basically follows you everywhere that you
> go, so it is who you are. And so, it is not only the ability to mold and shape music
> from the podium, but to mold and shape students as leaders and musicians, and to
> keep them engaged. I believe that's an important part of the craft. So continuing
> to work and grow within the craft of being a conductor and music educator really
> revolves around who I am as a person because I just won't be able to escape it,
> wherever I go. (interview, November 17, 2014)

During the focus group meeting, I asked the participants to talk about the things that they

struggle with in terms of their teaching and conducting. Theo's response was honest and

poignant as he spoke about how the visibility of his position affects him:

> My biggest struggle is that I just doubt. I doubt almost every decision I make and
> it kind of goes along with what others have said. 'Did I spend too much time on
> warm-ups? Did I do this? Did I do that? Did I pick the right literature?' I am
> constantly in a state of doubt and question the decisions that I have made because
> there's always that fear of what the performance will sound like, what the kids
> will take from it, what the community will think, what it will look like when I'm

up on stage in front of this group and I'm conducting. It's just a lot, and it really comes crashing down in my head constantly. Going back to what Simon [other participant in the study] mentioned, you have to be confident. You have to go forward and just go for it yourself and not show that doubt. I mean there's no way the students would ever see my self-doubt. Number one, I would never tell them. Number two I don't think that they would believe that every moment I am questioning myself, before I question them. That is a big struggle too, because no other academic discipline in our school, besides music, has such a relationship between the teacher and the students in the final evaluation process, which is the performance. You are right up there with the students, and as much as you can say well the band didn't-or the band did with their performance, it really still comes down to you as the conductor. The moment I step off that podium, I start doubting and questioning: Did I do the right thing? Was this the right piece for them? Did I say the right thing at this moment? So there's always that doubt and that is really my biggest struggle. (focus group, October 23, 2014)

Following Theo's comments, the other participants nodded in agreement and thanked him for articulating his thoughts and feelings in such an honest way. His comments were so powerful and personal that I asked him to revisit them during the third interview in the form of his exhibit question (Stake, 2010). As he read his words, he nodded in agreement and added:

There is not much more that I could add to that. It's funny because I think that my comments draw out some of those bits of the integrity that we have to live up to in the eyes of our community, our students, our parents, and our teachers. Even though I am self-conscious, a lot of the time I just have to be confident because that's what they're looking for and that's what they need from their director. If I was constantly expressing my doubts then after a while I think that they would doubt me being their director. (interview, November 17, 2014)

The underlying doubt, worry, self-consciousness, and desire to be a confident teacher and director revealed Theo's commitment to his job and the students. I asked him if he knows where his doubt and self-consciousness came from and he replied: "The self consciousness goes along with the job because you are just exposed. You might as well be standing out there naked in a field. Every little thing that you do, correct or incorrect is visible to everyone" (interview, October 8, 2014).

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Motivation

Responsibility. It is clear that Theo's identity as a musician, teacher, and conductor play a huge part in his motivation to continue developing the knowledge and skills required for practice. Throughout our discussions, I was struck by the overwhelming sense of motivation and commitment he has to his development as a person, musician, and teacher. Much of his motivation is fueled by the emphasis he places on his responsibility to his students and to school community:

> I'm truly passionate about making music, and as a result I have a responsibility to continue to reach out for that external influence, extra assistance, and critique— all of that while also looking inward to say and be honest with myself, I can do better. I can do better for my students, I can do better to allow the rehearsals to be an engaging and motivating to the kids where they will want to continue to perform and make music and you know, even hope to carry it on throughout the rest of their lives. The more I do it [workshops and symposia], the more that I think I've got to keep doing this. I can't just say: 'Well I did this great conducting symposium with Michael Haithcock and Wes Broadnax and got to spend a little bit of time with them. Or, Tim Reynish gave me the thumbs up, so I must be there'. Instead, those experiences make me think, if I'm getting great feedback from Tim Reynish then what more do I need to do if I get in front of somebody else? I see the positive impact that it's having on the students but then also to hear it from somebody else makes it even much more worthwhile. (interview, November 17, 2014)

Theo understands that his students view him as a role model. This motivates him to continue pushing himself and to continue working on his development as a conductor and teacher. In many ways, Theo likens his responsibility and motivation to pursue additional instruction as practicing:

> We tell our students that they need to go home and practice and that they need to seek out extra help. We shouldn't be void of that. If I'm telling my students there is room for improvement, then I feel that I have to live up to that myself. (interview, October 8, 2014)

During my observations of Theo's rehearsals, I wrote in my field notes that it was clear that he has devoted a great deal of time to his conducting skills and teaching

strategies. His gestures were extremely fluid and he was able to communicate his musical

intention to the ensemble effectively through his conducting.

Past Experiences

      Wisdom of experience. During our interactions, Theo indicated that he gleans a

lot from reflecting on his past experiences. Over the course of his career, the lessons,

mistakes, interactions with students, and challenges he has experienced inform his

motivation for continued self-improvement. Throughout his journey, Theo has come to

realize the importance of looking inward and knowing himself, his personality, his

strengths, and his tendencies. He spoke about why this process is crucial and how his

experiences have informed and motivated his growth and change, and the need to find his

own personal voice in the classroom and on the podium:

> In my first year of teaching, I was trying to be everybody else as opposed to being
> myself. It was very difficult for me to think for myself and come up with
> strategies on and off the podium. I just didn't know anything other than what I
> had seen from others. So, I was trying to be somebody else: my mentor teacher,
> my high school director, and/or my college directors. Fast forward five years and
> I started to get a better idea of whom I am and how I relate to the students through
> the music…and so with that, what I figured out was I have to use my own
> techniques and my own ways. I borrow some of the ideas from others and have
> my students work towards the same objective, just in a different way. How can I
> get my students there without actually trying to be someone else? (interview,
> November 17, 2014)

      I asked Theo to reflect on his career and experiences and to describe what he

knows now that he did not know at the start of his career. He spoke about the

intersections of teaching and conducting:

> I wish I had known that the two could co-exist because I really truly thought at the
> beginning of my career I was going to be a great conductor, and that just being on
> the podium puts you into role. It took some humbling experiences, both in
> rehearsal and in performances, to really understand that you have got to co-exist
> as a conductor and as a teacher on the podium. (interview, November 17, 2014)

During our second interview, Theo talked about the impact his undergraduate experience had on his development. He gave one specific example that had a lasting impression on him. It happened during "skunk band," a term he gives to a university lab ensemble that was comprised of music education students on secondary instruments. Students were given a card with instructions on how to distract the person on the podium. Theo recalled the lesson he learned in this skunk band when he assumed the role as the teacher. He thought he accomplished all of the stated objectives but little did he know, one of the students snuck out during his class. Theo recalled the lesson he learned from the experience:

> It was that right there, in that moment, that I realized this job is more than just getting on the podium and making music. You are going to encounter, and have to understand how to deal with so many different things that are so far away from music. (interview, October 8, 2014)

Professional Development

Theo has devoted a great deal of his professional development time to topics and experiences that are related to conducting. I asked Theo to describe the types of conference workshops he attends and which sessions inspire him. He spoke about the importance of observing concerts and rehearsals so he can hear new music and ensembles. He also expressed great interest in sessions that focus on curricular innovations ranging from technology to new approaches towards practicing and leading warm-ups. In addition to attending conferences, Theo talked about observing professional groups and how those experiences impact his teaching:

> One of the groups that just always impresses me the most is the President's Own and if I was to be able to shadow them, even get inside the inner workings of the director, and how they're structuring all of these performances with all of these different groups. And not to mention their touring schedule, it is just awe-inspiring. The musicians in that ensemble come in and are able to play everything

without a doubt because they have done all of that work ahead of time. That is something I share with my students—the high level of musicianship that is there and that they [the President's Own] are expected to perform at the finest level at every moment. (interview, November 17, 2014)

Aspects of Teaching Instrumental Music

Relational Work

Students and environment. Theo's thoughtful nature was visible from the moment we started communicating about his participation in the study. He brings this thoughtfulness and his strong interpersonal skills to the classroom and recognizes that they are an important aspect of his practice. He attributes his ability to be nurturing and empathetic with students with his experiences of being a parent himself. Moreover, he stressed the importance of being himself and being vulnerable in front of the students:

> ….being vulnerable [in front of] the kids and letting them know that this is who I am and this is what I do. If I see them out in public, I want them to recognize me as a person and not just their teacher. (interview, November 17, 2014)

Theo talked about the importance of balancing the demands of the job with having high expectations of students, and building a lasting connection with students:

> You have to focus on their needs as a student, as a musician, and as a person too, because we all know that there's a lot going on in the lives of all of those students. And I want to make sure that I can address their needs musically so that if they have a personal thing, that at the appropriate time, those things can come forward —maybe it is in a one on one conversation or that they can use their experiences from band class to help get them through that personal dilemma. (interview, November 17, 2014)

The connection Theo has with his students is carefully crafted through the supportive environment that he creates. I witnessed this environment and felt the openness and sense of community that he values and aspires to impart on his students.

> …whether I'm in front of the youngest or the oldest students, I want them to understand that they're free to be who they are because that's who we are as an

ensemble. So that we can make the best music possible. (focus group, October 23, 2014)

Communication beyond words. During our final interview, I asked Theo to revisit his previous statements surrounding his identity as a musician and his relationship with his students. I asked him if there were any other components or aspects of teaching and conducting that impact his teaching and how he interacts with his students. He talked about his relationship with the music, the composer, and the capacity of music. Theo views these relationships as interconnected and powerful:

> It's really incredible to me, and I feel that [capacity of music] through teaching. When you actually see kids and audience members losing themselves in the music and losing themselves in a performance or a rehearsal—or coming away with the feeling 'Man that piece really spoke to me,' whether it's something as lyrical as Lux Aurumque by Eric Whittaker or something as powerful and dynamic as a David Maslanka piece. Something to that effect where it changes people, and I think that it changes their outlook not only on themselves of what they can accomplish, but it gives them a little bit of hope in humanity. (interview, November 17, 2014)

Theo talked a lot about the symbiotic nature of his relationship with the students, and the non-verbal exchange that is communicated through the instinctive response to the gesture and music. Theo invests a great deal of time and energy fostering relationships in all aspects of his teaching. He is empathic to students' needs, values the composer's voice and intent, and creates a supportive environment where students can experience the power of music.

Instructional Approach

Decision-making. In order to understand how Theo approaches his day-to-day decisions for practice, I asked him to break down his process into its simplest form. He spoke about having a clear idea of what he wants the music to sound like (the aural

image), knowing what his ensembles are capable of based on their ability level, and based on what he hears, his ability to assess, diagnose, and plan strategies in the moment.

> I'm able to think back on a rehearsal and my mind automatically goes to what did I hear? What do I need to address? What are those things that I feel are going to correct themselves? And what are those things that I'm going to need to make sure that I bring to their mind? And it's this constant thought process. (interview, November 10, 2014)

Assessing in the moment requires him to draw on different sources of knowledge simultaneously measure what he is hearing Common Content Knowledge (CCK) against his aural image. Diagnosing what he hears and understanding the nature of the mistake or what led to a particular conclusion utilizes Specialized Content Knowledge (SCK). Planning strategies and mediating challenges utilizes Knowledge of Content and Students (KCS).

I asked Theo to 'zoom out' and think beyond his in-the-moment decisions. He spoke about the variables he considers when choosing repertoire for his ensembles: range, technical challenges, finding the right fit for the ensemble, and how he chooses repertoire for his ensembles:

> …looking at those factors leads me to an idea of where and what the benchmarks will be leading up to the concert and what I should accomplish with the students each rehearsal. I think ahead, even before the students read it [the piece] what will be challenging? Where is my focusing going to be? …. I try and think of at least three different ways to solve a problem. (interview, November 10, 2014)

Within this process, Theo draws on the four forms of knowledge simultaneously. His ability to anticipate concepts that will be challenging (KCS), sequence instruction and strategies to assist students in the moment and in future contexts (Knowledge of Content and Teaching - KCT) are informed by his knowledge of the score (CCK) and his understanding of how students progress throughout the learning process.

Although Theo was able to describe his process during our interviews, it was difficult for him to think out loud and respond to questions during the stimulated recall sessions. Like most experienced teachers, his tacit knowledge of his process, teaching, and conducting have become so routine and systematized that they are second nature. I asked him to pretend that I was not a fellow music educator and describe for me in detail his reasons for using different conducting gestures, space ratio, and weight. He likened his kinesthetic and verbal response to the music to an instinctive reaction: "…it's similar to driving down the road and being aware of the other drivers and being able to react to their actions. You know what to do more as a driver just by driving" (interview, November 17, 2014).

Teaching and conducting. Throughout our discussions, and particularly during the stimulated recall sessions, I asked Theo if he is able to distinguish between the application of his teaching and conducting knowledge. Are they distinct or merged? He spoke about how the process for him, and he does not think his students would be able to distinguish how his mind "bounces back and forth" between his teacher and conductor knowledge.

> …it's so organic because it comes and goes at different times. I'm constantly trying to pull myself back into being the teacher who is the conductor, you know, let the gesture inform them just as much as the verbal instruction. (interview, November 10, 2014)

I purposefully asked Theo to try and make a distinction between his teaching and conducting knowledge because I did not want to assume that the two were connected. Throughout the final stimulated recall session, Theo indicated his ability to respond to students in a certain way (through gesture), make decisions to proceed with the piece even if there was a problem, and know when to show students musical concepts such as

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nuance and phrasing rather than give verbal instruction, is guided by both his teaching

and conducting knowledge. He viewed these two sources of knowledge as combined.

> [Responding to video] So here is where the teacher and the conductor are together as one. There was just a mess of wrong notes and it's still going and just... as a teacher that's conducting, I was making the conscious decision at that time to just keep going, even though I could easily have stopped. I was thinking there are just so many incorrect pitches but if I stop right now, I'm going to be pointing out a lot of obvious things to them. I'm making this decision as a conductor to keep going and as the teacher to simplify what I'm doing [gesturally] so that we can stay together. (interview, November 17, 2014)

I asked Theo to review a portion of the video where he was conducting an

exposed passage in a lyrical piece. As he reviewed the footage, I asked him: "How does

your gesture support their learning and understanding of this delicate music?" His

description of this process reinforced how the interconnected layers of teaching,

conducting, and his relationship with the students all inform his actions. He spoke of how

his knowledge of the music (CCK) informs his decision to show a gesture that matches

the intent of the music. He believes that students are able to respond to his non-verbal

actions because they have an understanding of this secondary form of communication.

They know what to expect and are able to interpret his gestures because of the non-verbal

communication and rapport that has been established. In turn, Theo believes he is able to

adjust his gesture to show the students concrete aspects of the music, such as beat or

rhythm, because he is able to assess and respond in

the moment (SCK, KCS).

<div align="center">

Section Three

</div>

Summary

Theo is an experienced teacher who has taught for seventeen years. He currently

teaches at Rothchild High School—a large, established high school that is located on the

outskirts of a large city. Theo oversees the band program and directs three concert bands, marching band, and assists at the middle school. Theo was enthusiastic about teaching and conducting from a very young age. Over the course of his career, he has actively sought out hands-on-learning opportunities through graduate work and additional coursework in conducting. Theo holds a leadership position with the state music organization as the conducting symposium chairperson. When asked why he continues to pursue additional work in conducting, he replied: "[It is] [c]onstant, conducting is the one thing that won't change" (interview, October 8, 2014).

Theo spoke openly about his identity as a teacher and conductor. He self identifies as a musician but acknowledged the many roles he holds as a teacher, conductor, arts advocate, and community member. In all of these capacities, Theo noted the public nature of his position. He views his identity as a person and public figure as intertwined, and approaches the demands and expectations of the job with commitment, sincerity, and integrity. Theo spoke candidly about the challenges that come along with being a public figure. He is self-critical and self-conscious because he wants to ensure he is meeting all of the expectations of the position.

Over the course of his career, Theo has developed a strong sense of self in the classroom and on the podium. At the start of his career, he felt like he was going through the motions of being someone else. His personal growth and development have been informed by his self-reflection and past experiences. His demeanor with students is kind and empathetic. He values the relational aspect of teaching and believes very strongly in showing vulnerability to students. He views his relationship with students, the music, and

the non-verbal exchange through gesture as symbiotic in nature. He strives to create a supportive environment where students can experience the power of music.

Theo's approach to instruction and conducting is thoughtful and systematic. He uses the four aspects of the knowledge for teaching domains (CCK, SCK, KCS, KCT) to inform his preparation, delivery, and assessment for teaching and learning. During our interviews and stimulated recall sessions, Theo was unable to distinguish his teaching and conducting knowledge and skills as separate entities. Rather, he referred to them as being merged and part of an organic exchange.

The summary of the codes and findings are organized according to the prominence of each sub-research question (Figure 5). The figure is intended to highlight the salient findings and codes for Theo Philips' that correspond to the sub-research questions.

Sub-research Question (a): What key experiences do instrumental music teachers describe as being most meaningful to their development as teachers and conductors?

Findings

Identity	Motivation

↓ ↓

Codes   ## Codes

Public Figure	Responsibility

Past Experience	Professional Development

↓

Codes

Wisdom of Experience

Sub-research Question (b): Which aspects of practice do instrumental music teachers perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors?

Findings

Relational Work	Instructional Approach

Codes

Students and Environment

Communication Beyond Words

Codes

Decision-Making

Teaching and Conducting

Sub-research Question (c): What dilemmas of practice (Ball, 1993; Lampert, 1981, 1985) do instrumental music teachers perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors?

Findings

Identity

Codes

Public Figure

Figure 5. Summary of codes and findings: Case Two – Theo Philips.

Chapter VI

SIMON WAYNE

Section One

Background

Simon is a violinist, clarinetist, teacher, and conductor. In addition to teaching instrumental music, Simon is active in his community and conducts two community youth orchestras. We connected via VoIPs (FaceTime video call) for our first and third interviews. Our second interview took place in person at his school during his planning period. Prior to our interview, I took some time to get a sense of the school environment at Birch Creek High School (BCHS), and after our interview I had the opportunity to observe Simon teach.

Simon has been teaching instrumental music for twelve years. He has taught at BCHS for eleven years and ,prior to this position, he taught instrumental music for one year at the school where he completed his student teaching placement. Simon holds a bachelor of music and a master's degree in music education. He began his undergraduate degree as a violin performance major and switched to a double major (violin performance and music education) in his third year. During the summer, he worked with high school students at the Interlochen Center for the Arts, a prestigious summer arts camp specializing in music, theatre, visual arts, creative writing, motion picture arts, and dance. At Interlochen, Simon had access to powerful role models, including an esteemed

conductor and music educator who became, and remains, Simon's mentor. These experiences left a lasting impression on Simon and motivated him to pursue music education as a career. Although Simon began his degree as a string major and orchestral player, he had a number of significant experiences that prepared him for teaching wind players. Simon began playing the clarinet at age five and continued playing during his undergraduate degree. During high school, Simon was a drum major, and as an undergraduate, he worked closely with the university bands and his student teaching placement was in a band program. Simon credits his undergraduate, student teaching, summer work, and his mentor teacher as having a significant impact on his exposure to teaching and wind conducting.

Simon's experiences in band and strings challenged him to be versatile and informed his philosophy about teaching and conducting. Currently, Simon conducts the bands at BCHS and directs two ensembles in the community outside of the school day: Community Youth Symphony (CYS) and Metro Winds, a youth orchestra that is affiliated with a major symphony orchestra. He accepted the position with CYS during his fifth year of teaching because he wanted an opportunity to work with string players. According to Simon, the CYS program needed to be rebuilt and, over the past six years, under Simon's leadership as the director and conductor, the program has grown from 90 to 250 students. Metro Winds is an entirely different organization than CYS. Simon has the opportunity to conduct large-scale, standard orchestral works with select high school students, and he has access to professional musicians and conductors who are affiliated with the parent orchestra. Simon indicated his various experiences with teaching and

conducting at BCHS and his outside work with CYS and Metro Winds challenge him to

reflect on his interaction with music, students, and his role as a teacher and conductor:

> I never want my gestures to get in the way of the music. And in a bigger sense I never want my ego to get in the way of the composer. I never want to look cool so the composer is secondary. I always want the composer to be primary and I want my gestures to reflect what the composer wants. All of my thoughts surrounding teaching and conducting are derive from these principles. (interview, October 7, 2014)

Teaching Responsibilities

BCHS is a located in an affluent suburb that is twenty-miles away from a major

US city. The population of the school is 1400 students and the racial demographic of the

study body is: White, 88%; African-American 5%; Asian, 3%; Hispanic, 2%; Multiracial,

1%. Only 6% of students participate in the free or reduced lunch program; this figure is

low compared to the state average of 48% (www.greatschools.org). The school is

considered to be a strong academic institution (interview, October 7, 2014). Two hundred

students participate in the music program, and these students have access to the following

course options: band, choral, orchestra, and a piano program (group and individual

instruction). Within the band program, Simon conducts all of the ensembles: Freshman

Band, Concert Band, Symphony Band, Marching Band, two Jazz ensembles, Percussion

ensemble, and he teaches Advanced Placement Music Theory. The Symphony Band is

the only ensemble that is auditioned. Students in the Symphony Band are typically

Juniors and Seniors, and they play repertoire at a grade 5/6 level. The Concert Band is

comprised of Sophomore through Senior level students. Simon co-teaches the Concert

Band with his assistant director. His assistant is the lead director for the Concert Band

and assists in the other rehearsals.

Classroom Observation

BCHS is located in a quiet, scenic neighborhood. Picturesque houses, well-maintained properties, and tall trees adorn the streets in and around BCHS. The high school was built in 1952, and the music department is located in a renovated section of the school. As I entered the school, I went through a number of security measures and waited for Simon to retrieve me from the office and escort me to the music wing of the building. When we arrived downstairs, the music area was "a buzz" with students practicing in small groups in the stairwells and practice rooms, students socializing, and large ensemble classes in the midst of rehearsing. It is clear that the students want to be in the music department and consider it a place to unwind, gather, and work.

During my observation of Simon's classes, his energy, humor, and level of engagement struck me. For example, Simon had music playing over the sound system as students entered the room. The music was upbeat and lively and reflected different genres. His class sizes were large, and even though the students were chatting as they entered the room, they knew what to do and where to go. Simon's teaching style is laid back and fun. He uses relevant analogies from pop culture sources to engage students. At the same time, Simon has high expectations of his students; he challenged them throughout the rehearsal to think deeply about their connection to the music, the composer, and to apply their skills and knowledge to their performance. He used the Socratic method to ask students questions about music fundamentals and encouraged them to make connections between their knowledge to theory to their practice as performers. Overall, the culture of the music department at BCHS in Simon's classes was lively and rigorous. Students appeared to be happy and engaged within the classroom.

The following section will describe in detail the findings and codes for this case. The section is organized into two parts: (i) personal context and (ii) aspects of teaching instrumental music. I will conclude the chapter with a summary of the case findings and codes. The summary figure is organized according to the sub-research questions in order to highlight the prominence of the findings and codes within this case.

<div align="center">Section Two: Personal Context</div>

Identity: **Bach—philosophy—and being a father**

Over the course the three interviews and the focus group meeting, Simon made several references to his identity as a teacher, conductor, and father. He spoke passionately about his experiences with music as a young performer and how these impressions shaped who is today. He explained that these experiences and impressions are a part of his identity and personality and have a direct impact on his teaching and conducting:

> My strength as a teacher is my identity and personality on the podium. I feel like when it comes to the sincerity of expressing what the composer wants—that's one of my fortes. In my experience, students will go with me the extra mile because they know it's not an ego thing. I'm not on the podium to look cool, I'm on the podium cause I love Bach and I want Bach to be represented the right way. They might not agree with my interpretation, but they can't say that it's insincere. I find that students are very receptive to that. They know it comes from a place of just passion. (interview, October 7, 2014).

During our second interview, Simon recounted a story from his undergraduate experience when his violin teacher asked him to work on a piece by J. S. Bach. Simon recalled initially hating the experience because the piece wasn't "flashy" (interview, November 11, 2014). He reminisced about his teacher's response, and how it impacted his relationship with music, and his role as a performer, teacher, and conductor:

I don't remember exactly what he said, but I remember the way he looked at me when he said it. He said, [Simon], you're going to go through all of these different stages in your life where you like certain music and not others and I guarantee at the very end, you will realize the simple truth that Bach is the greatest. He had such a peaceful like demeanor when he said—it had a huge impact on me. Having my own life experiences, Bach has brought me back from the depths. It's made me feel hope again and I talk about those experiences in class and I say to the students: 'These are not your experiences, they're mine. I don't want you to grasp onto my experiences but I'm trying to show you that music can offer you this kind of power to heal, to move on and to have hope. And for me it's Bach.' (interview, November 11, 2014)

For Simon, his passion for music and for honoring the composer go beyond an interest or hobby. His musical experiences have become a deeply rooted aspect of his identity that informs his philosophy of teaching and learning, and guides decisions and interactions with the students, music, and pedagogy. He referenced the broader profession of music education and his belief that each teacher approaches their work with a unique perspective that is informed by their identity. Despite the fact that each teacher has their own personalized approach, Simon believes there are universal truths and philosophies that all teachers and conductors share:

Commitment to students and commitment to the realization that it's not all about us, it's about them. We want our students to be lifelong learners of music, I think we want lifelong appreciators of music. We all are tremendously committed and passionate to teaching because there is sacredness to what we do. (interview, November 11, 2014)

Fatherhood. Throughout our interactions, Simon talked about the single biggest factor that has changed his identity as a teacher and conductor: becoming a father. He spoke at great length about parenthood and how it has taught him how to shift his focus away from himself and onto the students. When I asked Simon to describe what he does in the classroom and how he self-identifies, he responded: "For me it's Dad. Dad is the most important thing. When someone asks me, 'what do you do?' I say I am a teacher,

but mentally on the podium, I primarily identify with being a dad. " (focus group interview, October 23, 2014). In the final interview, I asked Simon to revisit his thoughts on fatherhood and how this part of his identity impacts his interactions, he replied:

> When you have your own kids, you realize that every single student is someone's boy and someone's girl. Each student is someone else's universe and they each had a parent, a guardian, or someone who went in at night when they were a baby and made sure they were still breathing, just like I did, just like you do. That changes my demeanor on the podium and with my student interaction. I still hold students' feet to the fire, but now I'll throw in an encouraging remark here and there, or I'll throw in a protective comment if someone else snickers or laughs. I do little things like that more intentionally now than I did before being a father. (interview, November 11, 2014)

Professional Role Models

Over the course of his education, Simon had two powerful role models who influenced his outlook on teaching and conducting: his high school band director and a conducting mentor. He recalled that his high school band director taught him the importance of loving the job and having fun on the podium. His conducting mentor modeled the "power of teaching high school students and the joy of conducting challenging repertoire" (interview, October 7, 2014). He talked about the challenges he faced early in his career when he tried to replicate their analogies, stories, and strategies verbatim:

> It failed miserably! I tried pathetic things like trying to alter their stories and make them mine. It was stuff I'm embarrassed to say, but it is true. It taught me valuable life lessons: I just have to be myself. I know that sounds simple. The quote I always use with my student teachers is: 'Don't try and be anything but what you are and be that perfectly.' When you teach music, you have to find your artistic voice, your gestural range, and try to not copy conductors that you've had in the past or mentor teachers that you've had in the past. Take little snippets of what they do that works with you and incorporate it into a more complete picture of you. Personality and identity is so important on a podium. It's just as important as the gestures. Earlier on in my career I would have a miserable time—I was devastated, because I tried to recreate the stories and the techniques that were so sacred to me. I realized when I tried to carbon copy them in rehearsal it was a

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failure because it was me doing them…I wasn't being myself. (interview, October 7, 2014)

Making it your own. It was surprising to hear Simon's "failure story" because he has such a strong sense of self and identity in the classroom and on the podium. How did this transformation happen? What impacted this growth from his first year of teaching to current day? His recollection of his growth over the past decade revealed his ability to be introspective and honest about his development both as a teacher and conductor:

> In my first year of teaching, I wanted to be Leonard Bernstein on the podium, and I thought I was Leonard Bernstein on the podium and that's scary to think about. I wish I could bring back that unbridled enthusiasm that I felt about everything. Through the years, with parents, administrators, and bad experiences, you get kind of…. you don't get jaded but you curb your enthusiasm a little bit. My fifth year of teaching, I still thought I was Leonard Bernstein on the podium, but I didn't conduct everything as big. By my tenth year of teaching I realized I didn't know anything, and I really need to look at myself better. (interview, November 11, 2014)

Simon talked about how, over the course of his career, he has arrived at a place where he knows his strengths and weakness, and is finally able to make things his own. He attributes his ability to be honest, candid, and vulnerable on the podium with his strong sense of self:

> In my rehearsals there is always going to be athletic metaphors, there is always going to be metaphors with cheesy, 1980s and 1990s movies, because that is part of my identity and my background. I know that these things only touch a handful of students, so I constantly think about metaphors, anecdotes, comparisons with other little weird pockets of pop culture so that it brings in other students and makes them either: A) engaged, B) critically thinking, or C) just not falling asleep and or on their cell phones. (interview, November 11, 2014)

Simon used the word "magic" to describe the feeling he had as a student when he watched his mentor teacher and conductor work. He feels he has arrived at a place where he is able to connect with students because he knows himself. He is able to embody the

music, and has "enough personality on the podium to have the students take a leap of faith" (interview, October 7, 2014).

Professional Growth: ".... the more I realize how much I don't know"

Tension in the body. During our second interview, I asked Simon to think back to his early years as a teacher and think about what would have prepared him more for practice? Initially, he felt overwhelmed by the question: "there are so many different directions I could go with my response" (interview, November 11, 2014). He talked about the physical challenges with conducting and the problems he has with tension in his body. As a result, he has deeply engrained habits that are difficult for him to self diagnose and correct. During his master's degree, Simon worked with a conducting professor who brought these engrained habits and issues of tension to his attention:

> Every time I see him, I tell him he taught me more about body awareness with conducting than anyone I ever worked with. And I don't say that to flatter him. I say it because I really mean it because if I step on the podium and start to feel pain, I think about a few key points he made about releasing tension in the body. It is difficult, because conducting is a powerful experience. When you have a very rich, grandiose passage in music, it's easy to feel tension because you feel it so deeply. The reality is, when you're tense, you're really limiting what you can do with your gestures. (interview, October 7, 2014)

Simon had a difficult time responding to the prompts and video during the stimulated recall sessions because when he watched his videos he could see evidence of tension in his body. He was critical about his gestures and commented on how the tension in his body impacted his communication with the ensemble.

> I'm not happy with how I looked at the trumpets. I wanted to get their attention to come in but I had a real tense face when I looked at them…. almost like biting my lip. I have excitement that they're going to come in but I'm not showing it the right way. If I was a player and I saw that I would immediately tense up. (interview, November 17, 2014)

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I wrote in my field notes that, although Simon's gestures were clear and communicated his musical intention, there were several times when I noticed the tension he holds in his body. This tension seemed to affect his range of motion and limit his capacity to use space effectively when he conducts.

Observing others. Our conversation about seeking out additional work and the physical aspects of conducting led to a discussion about professional development and what motivates Simon to pursue additional opportunities for instruction:

> I want to raise my curiosity, I want to minimize my apathy and my burnout, I want to be enthusiastic about taking the podium everyday, even if it's just with freshman band—even more so with freshman band! I want to know strategies and repertoire that will help me get there. I want to hear stories about how people teach and conduct new music. (interview, November 17, 2014)

Simon talked about the value of watching his colleagues teach and how meaningful it is to spend time with them talking about music education and conducting. Given that Simon interacts and observes professional musicians, conductors, and colleagues on a regular basis, I asked him why he seeks out additional professional development opportunities over and above what is at his disposal. He replied, "A very humbling part of this profession is that the longer I work, the more I realize how much I don't know. It makes me realize I still have so much to learn, it's very humbling…..very humbling" (interview, November 11, 2014).

Throughout our interviews and casual conversations, it was clear that Simon thinks deeply about his development as a conductor and the impact he has on his students. He gleans a lot from observing his colleagues and values the relationships he has cultivated with them over the years. Simon talked about his overarching goals and philosophy as a teacher and conductor and how they impact his decisions in the

classroom and on the podium. Moreover, he talked about how his ongoing interactions with colleagues challenges him to keep his goals and philosophy at the forefront of his practice.

Aspects of Teaching Instrumental Music

Relational Work

During the focus group meeting, Simon talked about the relational aspect of teaching and conducting, the lessons he has learned over the course of his career, and how his comfort and confidence with students has evolved. Through this growth, he has learned the importance of not being afraid to show students when music moves or excites him, revealing his sincerity about teaching and conducting, and exposing his vulnerabilities. In addition, he talked about the persona of the conductor and how teaching influences his conducting:

> Whether you're teaching the youngest band or you are Gustavo Dudamel conducting the Los Angeles Philharmonic, the conductor has to be an educator to succeed. You cannot just get up there and wave your hands. It's not 1940; it doesn't work like that anymore. You have to keep in mind that you're dealing with, in our case, teenagers in 2014. You have to consider who they are as people, their context, and the environment. (focus group, October 23, 2014)

He talked about how he has to be flexible, spontaneous, and responsive to the students in the moment:

> Are they rambunctious today? Did they all have too much sugar? Are they exhausted because they are all in AP calculus before they come to band? My student teachers always come in guns blazing for Symphony Band. But I have to remind them, these are the top achieving kids in the school and imagine if you had AP government, AP Chinese, AP calculus, AP bio and then you get to go to band. Let's do Lincolnshire Posey a million miles an hour? You can't do that. The reality is these kids are pulled in a million directions, and they're tired. Sometimes I have to pull the enthusiasm out of them, by the time they're in Symphony band, I know how to get them excited even though they're really tired. (interview, November 11, 2014)

I witnessed Simon's sincerity and commitment to building a strong relationship with students during my observation at BCHS. Students gravitated towards him and genuinely looked happy to be in class. Although Simon is laid back and gives the impression of being spontaneous, he is thoughtful about his rapport with students and purposefully works to create a supportive learning environment for them:

> I have a sincere interest in my students' wellbeing, not just musical and artistic but, but in their emotional health. I feel that is really important to be aware of in today's high school. That's my primary concern. I want music to enhance their emotional health. And then I want them to treat each other the right way. I want to create an environment where they do treat each other the right way. (interview, October 7, 2014)

During the second interview, our conversations about the relational aspects of teaching transitioned into a discussion about the non-verbal exchange between the conductor and students. Simon attributes his ability to engage students in a collective artistic process with the strong connection he has established with each individual in the room.

Conducting

Aural image. Over the course of our interactions, Simon talked on a macro level about his experiences and philosophy surrounding teaching and conducting. I wanted to learn more about the fine grain aspects of Simon's practice: how he prepares for rehearsals, how he plans for instruction, and what informs his decisions. Given that he is spontaneous, I asked him if there is a strategy, or plan that guides his decisions:

> There's always a strategy and I really feel that for the students to have a heightened experience there has to be a delicate balance between the academic, the intellectual, and the emotional. If I'm not bringing the three aspects to the table, then I'm not providing them with a full well rounded music education. If you're too academic then it's just science and if you're too emotional it's a sloppy mess, you know what I mean? There has to be a balance of both. (interview, November 11, 2014)

His tacit knowledge of how he plans and how he approaches his practice was difficult to unpack. After subsequent follow up questions, Simon began talking about the aural image and his ability to: "have an idea of what you want the music to sound like, or an idea of what you want the ensemble to sound like" (interview, November 11, 2014). For Simon, the process of being able to look at a score and hear the music and to respond in the moment, are skills that he learned and developed over time. His listening and score study skills have improved along with his ability to mentally recall something that happened in a previous rehearsal:

> …in the first couple years of my career, I would literally write my thoughts down on the napkin I used at lunch. Now, the process is more refined and fluid. I have a mental recording, and I can mentally highlight measures and picture them in my mind's eye in the score, so when I come back to rehearsal the next day, I know what to touch on. (interview, November 11, 2014)

Teaching and conducting: A messy mix of both? I wanted Simon to keep talking about how he responds to the ensemble in the moment, the sources of knowledge he draws on, and if he makes a distinction between teaching and conducting. It was difficult for Simon to articulate his thoughts and actions on these topics. Moreover, he found it challenging to think of teaching and conducting as separate entities:

> The easy answer is to say that it is a messy mix, but I think there truly are moments when I am just giving information as a teacher and then not as much giving information as a conductor. When I'm just doing basic exercises where they have to count my beat pattern, that's just conductor but then again you could consider it education because you're teaching them the correspondence between the ictus and the sagittal plane and all of that good stuff. So I don't know…maybe a messy mix of both? (interview, November 11, 2014)

Simon's frustration with his response revealed that he has a difficult time thinking about his knowledge, decision, and actions in separate categories, and sees them as being more intertwined.

Instructional Approach

Although Simon found it difficult to draw distinction between teaching and conducting, he talked about how his instructional approaches are informed by his Knowledge of Content and Students (KCS). For example, Simon described knowing the ability level of his students and his ability to anticipate challenges and formulate strategies to help students:

> If a piece has a key change that adds a flat or takes away a sharp, I know I'm going to have to make sure that students understand that you are now in this key. I might a do a thorough warm-up to make sure that they play these things correctly. It is preparing them to not waste time on that key change because they have done some technical exercises in the warm-up. If I know there are some rhythmic issues, I'm not just going to butcher through it the first time. I might say: 'Hey, take a look at that measure, it repeats, let's clap it out, let's count it out, let's clap and count it out. Let's do it with the metronome.' I do all of those things to be proactive. One of my mentors taught me how to predict mistakes and prevent them before they even happen. Over the course of a year that saves hours of rehearsal time – instead, we can devote that time to talking about the emotional content or the emotional aspect of a piece. (interview, November 11, 2014)

Simon's tone during this discussion suggested that he feels that his KCS is standard practice or "something everyone does" (field notes, November 11, 2014). His nonchalant demeanor suggested his KCS comes naturally. It was only when he began talking about student teachers that he started to realize that his decisions and actions are heavily impacted by his KCS.

Student autonomy: Stop conducting and let them play! During our final interview, Simon spoke about his overarching goals for his students and his role in their learning (Knowledge of Content and Teaching - KCT). He indicated his overarching goal of developing student autonomy permeates every aspect of his thought processes with students:

It comes back to my teaching because I am always striving for autonomy and independent, critical thinking. I used to feel flattered when I would have guest conductors come in and it would just fall apart. Now, I feel self-conscious because I'm not creating independent and autonomous players, I'm creating players that are dependent upon me and that's bad. I want them to think critically and not just mindlessly accept what I say. It just comes down to independent critical thinking and instilling that. (interview, November 19, 2014)

Simon acknowledged that his actions play a large role in helping students develop autonomy, and that sometimes the best thing he can do is to conduct less and let the students play:

I'm a believer that sometimes you don't have to dictate everything. If the ensemble is proficient enough, you can let them figure out the pulse and just show them style. It is a delicate thing because you don't want to be irresponsible and let them rush or let the piece fall apart. You want to give them a chance to have ownership, and be independent, which means they have to be more aware to what's going around and around them. I am trying to create lifelong musicians, not just people who play well in my ensembles. (interview, November 19, 2014)

Section Three

Summary

. Simon is active in his community, where he conducts a community youth orchestra and a youth symphony that is affiliated with a major symphony orchestra. Simon's experiences with band and string ensembles have impacted his philosophy about teaching and conducting. He values versatility and seeks out opportunities to conduct various types of ensembles.

During my interactions and observations, I was struck by Simon's level of engagement with his students, his laid back disposition, and his sense of humor. During our interviews, he talked at great length about his identity as a teacher and conductor. His powerful experiences as a young performer had a lasting impact on his approach to music and honoring the composer. His commitment to the composer is a deeply engrained

aspect of his identity, and it informs his practice as a teacher and conductor. Simon self identifies as a father. He has two young children and he noted that this experience has had a profound impact on how he views himself and how he interacts with students.

Simon has two professional role models who have made a lasting impression on his development as a teacher and conductor. He values the opportunity to observe his mentors and indicated that their mentorship has profoundly impacted, and continues to impact how he approaches all aspects of teaching and conducting. At the beginning of his career, Simon struggled to find his personal voice as a teacher and conductor. He tried to recreate his mentor's anecdotes in the hopes that they would resonate with his students just as they had when he was a student. When they did not have a lasting impact, he realized he needed to look inward and find his own personal approach and style. In addition to this challenge, Simon struggles with overcoming engrained habits in his conducting. He indicated that he holds a lot of tension in his body and this has a direct impact on the sound.

Simon has an engaging and energetic personality. He believes that in order to succeed with students, conductors must be teachers first. He works hard to build strong relationships with students and attributes his success with his ability to be responsive to students needs. His KCS informs his instructional strategies and his conducting knowledge (aural image) informs his concept of what he wants the music to sound like. It was difficult for Simon to unpack his tacit knowledge. He views his roles as teacher and conductor as merged rather than separate. Moreover, the teaching and conducting skills and knowledge he draws from to prepare and respond in the moment are not separate, but rather integrated.

The summary of the codes and findings are organized according to the prominence of each sub-research question (Figure 6). The figures are intended to highlight the salient case findings and codes for Simon Wayne's case that correspond to the sub-research questions.

Sub-research Question (a): What key experiences do instrumental music teachers describe as being most meaningful to their development as teachers and conductors?

Findings

| Identity | Professional Role Models | Professional Growth |

Codes   **Codes**   **Codes**

Fatherhood   Making it Your Own   Tension

Observing Others

Sub-research Question (b): Which aspects of practice do instrumental music teachers perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors?

Findings

Relational Work   Conducting   Instructional Approach

Codes   **Codes**

Aural Image   Student Autonomy

Teaching and
Conducting

Sub-research Question (c): What dilemmas of practice (Ball, 1993; Lampert, 1981, 1985) do instrumental music teachers perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors?

Findings

Professional Role Models	Professional Growth	Instructional Approach

Codes   **Codes**   **Codes**

Making it Your Own	Tension	Student Autonomy
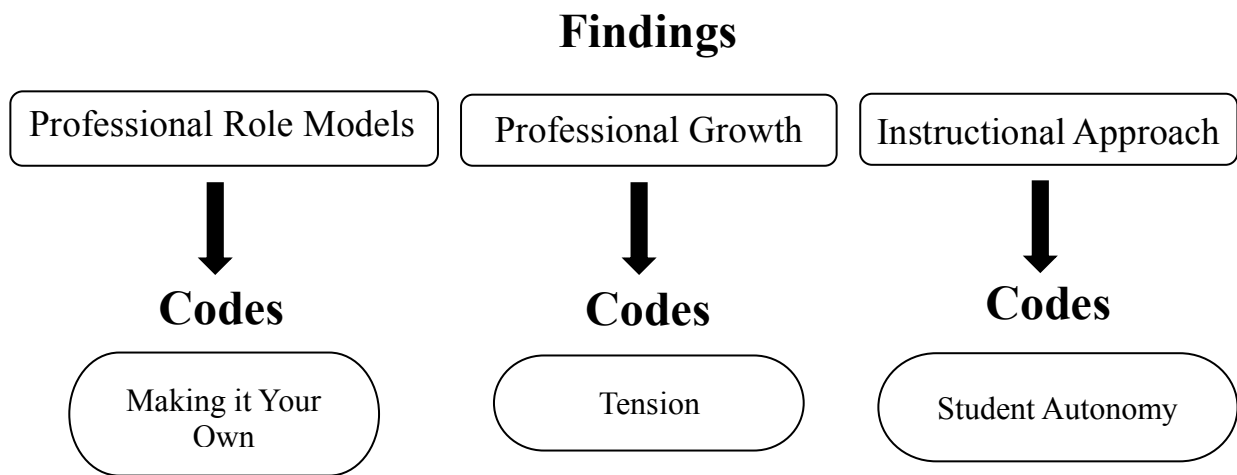
Figure 6. Summary of codes and findings: Case Three – Simon Wayne.

Chapter VII

SHERRY REITER

Section One

Background

In 2012, I observed a seminar on technology in the music classroom with Sherry Reiter as the instructor. I was impressed by her commitment to student learning and her innovative approaches to instructional techniques. When Sherry's name appeared on the list of nominees from a Director of Bands at a mid-sized institution, I knew I wanted her to participate in the study. I approached Sherry via email about participating in the study, and she responded immediately with great interest. Our first and third interviews were conducted using VoIPs (Face Time video call). The second interview took place at her school during her planning period, mid morning. I observed Sherry teach before and after our interview, and I spent time walking through the school to get a sense of the culture at Spearing High School (SHS).

Sherry has taught instrumental music in various capacities for 21 years. She spent fourteen years teaching instrumental music at the middle school level and has been in her current position at SHS for seven years. Sherry attended SHS as a high school student and played the flute in the band program. Following high school, she pursued a music education degree. Initially, she was interested in the performance track, but changed her mind once she started the program. During her undergraduate degree, Sherry recalled that her mentors were her flute professor and the Director of Bands. Both professors played a

large role in Sherry's development as a music educator (interview, November 12, 2014). In addition to her undergraduate degree, Sherry holds two master's degrees: Master of Educational Leadership and Master of Music Education. Her motivation for pursing the Educational Leadership degree was linked to how her compensation was structured. This credential opened the door for career advancement. The university she attended was close to her home and school, and her many of colleagues were already in the program. Sherry described her motivation for pursing the Master in Music Education in the summer as follows: "Ultimately, I wanted an advanced conducting degree in conducting but I wasn't willing to leave my job to do it" (interview, October 7, 2014).

I asked Sherry to reconstruct how she became interested in conducting. Sherry recalled that her initial introduction to conducting was during her undergraduate studies. She described the focus of the class as being beat and pattern orientated. Students conducted along with recordings exclusively and were encouraged to focus on their beat patterns. The second conducting class that she took was geared towards addressing rehearsal techniques. Sherry had the opportunity to conduct a live ensemble three times during the second semester. Sherry self-identifies as a systematic and mathematical minded person, and feels that this impacted her initial thoughts and approaches to conducting: "…when I first started conducting it was all about the how you get the beat out to the people and that kind of stuff. And it wasn't necessarily about creating music" (interview, October 7, 2014).

Sherry sought out additional instruction in conducting after her eighth year of teaching: "[When I first started teaching] I wasn't used to having a live ensemble so when they started responding to me and not responding the way I expected them to, I

decided I needed to get some help" (interview, October 7, 2014). She attended three

conducting symposia and took conducting workshops and classes during the summer

master's program. Sherry talked about her motivation for pursing additional conducting

courses:

> I think a lot of the motivation [to attend symposia] was being at the middle
> school. I felt like something was missing from my musical life. I wasn't playing
> my instrument anymore, the baton was my instrument, and after eight years I had
> repeated several pieces of music and I didn't feel that I was getting out of my
> conducting experience what I needed musically and I thought that maybe being
> with other musicians and finding out how to tap into that a little bit more, that
> through conducting symposiums that that would maybe give me that thing that
> was missing. (interview, October 7, 2014).

Through these experiences, Sherry observed her college professors and conductors work

with a variety of ensembles and musicians. She began to formulate a new perspective

about conducting and her interactions from the podium with students. She described this

change in her perspective:

> I started to realize that rather than putting everything into words, our conducting
> can show a lot. That's when I started thinking that maybe that was the way to go.
> I had plenty of resources that I was already tapping into for brass technique and
> other instruments and those kinds of things. What I didn't have was that influence
> in the conducting and I had such a great experience with my college professor that
> that really inspired me to pursue this further. He was a friendly person but you
> would never ever want to disappoint him. And that personality and the way he
> loved music and the way he shared that with people, I think really was a huge
> impact on me wanting to do more with conducting. I'm kind of talking around in
> circles but there's so many life experiences that we can bring to our kids while
> we're teaching them and I think through conducting it's a more human, personal,
> emotional, connection way of communication - more than words can ever be.
> (interview, October 7, 2014)

Teaching Responsibilities

The music program at SHS consists of 230 students (100 students in band, 40

students in strings, 90 students in choir). Sherry is one of two music teachers in the

department. Her teaching and conducting responsibilities include: 3 ensembles (Freshman

Band, Symphony Band, Wind Ensemble), Orchestra, Marching Band, Jazz Band, and the Pit Orchestra, which plays during musical theatre productions. The focus of the Freshman Band is on developing fundamental skills. The Symphony Band is comprised of Sophomore, Junior, and Senior students and is designed for students who are interested in playing but who do not perform at an advanced level. The Wind Ensemble is an auditioned ensemble that plays advanced repertoire. The Symphony Band and Wind Ensemble participate in large group Band and Orchestra Adjudication festivals. In addition to teaching the ensembles, Sherry teaches music theory.

Classroom Observation

SHS is located in a suburb that is connected to a large metropolitan area. The school is located on a major street that is in close proximity to several freeways. SHS was built in 1965 and the current population is 2000 students. The demographic of the school is predominantly White and approximately 5% of the student population is African American (www.greatschools.org). The socio-economic status of the school population is middle class as many parents hold white-collar jobs. The racial demographic of the student body is: White, 88%; Multiracial, 3%; African-American, 3%; Asian, 3%; Hispanic, 2%. Of the total student population, 14% participate in the free or reduced lunch program (www.greatschools.org).

I arrived at SHS at the start of the school day, and the surrounding streets were busy with commuters travelling to work. The building did not appear to have any new additions to the original structure, and it reminded me of a quintessential, traditional American high school: a two story building with a brick exterior. The security guards greeted me as I entered the building and gladly escorted me to the band room. The walls

of the classroom were filled with inspirational quotes, posters supporting local concerts, student awards, and photos of the ensembles and graduates of the program. It seemed that Sherry valued the development of a strong sense of community.

I arrived during the middle of Sherry's music theory class and was immediately struck by her efficiency and effectiveness of instructional approaches (field notes, November 12, 2014). The students were engaged, she used technology to support her verbal instructions, and she asked questions throughout the class to draw out students responses. During the second hour class, I observed Sherry's Freshman band rehearsal. The students entered the room and immediately knew where to go and what to do. The class began with warm-ups. During this time, Sherry walked around the room and made adjustments while the students played. Sherry has a systematic way of addressing concepts and breaking things down so students can develop and apply their understanding to their playing. She gave students concrete examples of how to break down concepts when they practice at home and how to approach challenges in a way that is efficient and effective. Sherry encourages students to make mistakes and take risks in her class, and she works hard to create a space where students feel comfortable and supported (field notes, November 12, 2014).

The following section will describe in detail the findings and codes for this case. The section is organized into two parts: (i) personal context and (ii) aspects of teaching instrumental music. I will conclude the chapter with a summary of the case findings and codes. The summary figure is organized according to the sub-research questions in order to highlight the prominence of the findings and codes within this case.

Section Two: Personal Context

Identity: You can't judge a book by its cover

During our first interview, Sherry spoke openly about her personality and how it impacts her teaching and her relationship with students. She described herself as an introvert and indicated that it is very difficult for her to verbalize what she is thinking because she keeps a lot of it in her head. She described her thought process as detailed and thorough: "…I have to think through things almost to a fault" (interview, October 7, 2014). Sherry indicated that her introspective nature often gives people the impression that she is disconnected or cold. She talked about how she thinks students perceive her:

> As a teacher, they would tell you that on the outside I look like I'm very scary and I'm unapproachable but nothing could be more opposite. Often students will come back and say: 'You know so and so thinks that you're really mean. I tell them they just don't know her'. So I think that's probably what they would say about me as a teacher, that I'm caring but on the outside it doesn't look that way. (interview, October 7, 2014)

During our first interview, Sherry spoke openly about a major life event that had a lasting impression on her identity and her interactions with the world.

> I lost my father when I was 32 and it was a very shocking, it was a very sudden loss. I'm a lot like my dad, being scientific, mathematically minded. Since losing my dad, I look at how I teach, how I interact with kids, and what music brings to people-I think it was a turning point in my teaching. (interview, October 7, 2014)

She described how this major life event impacted how she interacted with her students, particularly with regard to efforts to show empathy and build strong relationships with her students. Sherry's connection with her students is an important part of her identity as a teacher. During the focus group interview, Sherry talked about the complex nature of her identity as an educator:

I would refer to myself as an educator because that encompasses all of it. It encompasses being a teacher; it encompasses being the psychologist that I have to be on a daily basis. It encompasses the planner, the conductor, and educator in my mind, just wraps all of that together. Not everyone can be an educator. (focus group, October 23, 2014)

Professional Growth

Career cycle. Sherry spoke vividly about her evolution as a teacher and conductor. She recalled the initial challenges she faced during the early stages of her career as a middle school teacher and how this informed her understanding of student development and instructional practice:

My first year of teaching was basically get through the day, the week, the year. I had a really hard time when I first started because I didn't know enough middle school literature. I didn't know enough middle school composers, I didn't know the ranges of what the students could play, so I spent a lot of time (to the detriment of the students), trying to figure out middle school band. It was sink or swim, and I'm surprised I made it past the first couple of years. As I taught a little bit longer, I had an idea of where I wanted to go, and I spent a lot of time in the summers planning and preparing lessons based on what it was that I thought a middle school student should be able to accomplish. And I did a lot of curriculum development and that, and that's when I started to really understand what a middle school student could do. (interview, October 7, 2014)

Sherry talked about how she found it challenging to choose repertoire for her ensembles because she did not have a concept of her students' ability levels. She described knowing how to identify right and wrong notes and rhythms, but she struggled with how to teach concepts like balance, blend, and intonation. Moreover, she had difficultly anticipating student challenges (KCS) and understanding their developmental needs as musicians (KCS and KCT).

Sherry wanted to know more about student understanding, and she wanted to find ways to communicate more effectively with her students through gesture. She talked

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about her early experiences with learning how students process concepts and develop understanding:

> I had to start to peel away the layers to teach the kids how to understand the music before I could teach them anything. So I found that I needed to step back and reassess how I was learning things and, if it came easy to me, I needed to figure out why it came easy to me and why it wasn't coming easy to students—what was it that they were missing? Because I think mathematically, I like to take things apart and see how they work—so, why isn't a student understanding something? What can I do to help them get there? (interview, October 7, 2014)

> Over the course of Sherry's career, she has worked hard to understand the connection between student thinking and instructional practices. Through her additional work with conducting symposia and graduate work, she has also redefined her conception of conducting and her role as a conductor.

> Over time, I've developed a greater understanding that my conducting can convey a conversation instead of beat time. I'm trying to remember you have to let the students be responsible for something. I talk to them about the fact that my job is to make myself obsolete and so they can come to the table and bring their side so that we can have a conversation. (interview, October 7, 2014)

Through her ongoing work with teaching and conducting, Sherry strives to empower students with the tools they need to be autonomous musicians. Moreover, she continues to develop her ability to communicate nonverbally with her ensembles through her conducting gesture.

Challenges. Sherry spoke candidly about the challenges and complexities associated with teaching instrumental music. During the focus group interview, the participants started talking about working with student teachers and how this experience reminds them of the many aspects involved in classroom teaching. Sherry revealed the ongoing questions and challenges she encounters in her day-to-day teaching and conducting:

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I think a lot of it is all of the different levels that are in a class and trying to make sure that you are meeting all of those students' needs and still producing a musical product; teaching them not only music but life skills. There is just so much involved in what we do every day that it can be overwhelming, but it can also be so rewarding to watch these kids succeed maybe in music, maybe in academics, maybe in something else. We have a really special bond, because we spend so much more time with them-we have a different connection with kids than their other teachers do. In terms of the job, there are a lot of different things that come up on a daily basis and every day is different. Today it was did I spend too much time on the warm up? Tomorrow it might be am I working enough on articulation? Am I spending enough time working on the actual literature? The longer we're in the job, the more we know we don't know.
(focus group, October 23, 2014)

Role models. During the second and third interviews, I asked Sherry if she had any professional role models or mentors. She spoke fondly of her high school band director, college band director, and a conducting professor from her master's degree in music education. In all three cases, she talked about how her mentors modeled how to be empathetic and caring with students. These experiences had, and continue to have, a lasting impact on how Sherry interacts with students. She recalled an interaction with her college band director and the lesson she learned:

There are individuals in here and every individual brings something to the ensemble that is important. You could tell that he cared about how the music affected everyone. It was about the people in the room, not just the music.
(interview, November 12, 2014)

Sherry offered that she continues to learn a great deal from observing her mentors interact with students. She referenced her conducting professor from her master's degree and indicated: "In the past ten years, he has probably had the biggest impact on my teaching" (interview, November 12, 2014). She went on to say:

Watching him with kids is amazing. Not only are his conducting skills amazing, but also his ability to connect with students is inspiring. He doesn't even work with these students on a regular basis and yet he is able to walk into the room and know that one student who nobody talks to. He will walk up to that student and start a conversation. There's just something really special about that kind of a

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personality that. I like to watch them work to see how they interact with people, to see what, how do they make those connections? How do they see those things? I wish that we could use our professional development time to observe.... to just get out of our classroom and watch other people teach. (interview, November 12, 2014)

Colleagues. Sherry attends the state conference on an annual basis and looks

forward to connecting with her colleagues at these events. She values the connections and

conversations she has with them as they rejuvenate and inspire her.

There are three of us that graduated together and the only time we see each other is at a conference. Last year at the Midwest conference, I was kind of at a low point, and I sat and talked with one of my friends for over two hours. Some of the ideas that he gave me and some of the resources that he pointed me towards re-ignited my desire to be teaching and to be working with kids and making music. For me, it's those connections with people, and the clinics that you go to where you have an *aha!* moment.... where you think I've done that but I haven't looked at it quite that way. (interview, November 22, 2014)

Aspects of Teaching Instrumental Music

Relational Work: Inexplicable Connection

Throughout our interviews, Sherry spoke openly about the loss of her father and

the impact it had on her teaching and on her relationships with students. She cares deeply

about her students and her connection with them is a cornerstone of her practice. During

our final interview, I asked Sherry to revisit an exhibition quote from the first interview

where she talked about her rapport with students and the loss of her father. She

responded:

A lot of that has come from the loss of my dad, and I think that was such a major impact on me, that I know that that relationships are really important. And I think that as we get older and we start experiencing those kinds of losses, you realize that you will never have that moment to have that eye contact moment with that person again. And so living in the moment is really important, and I find with music I do that more than with anything else. (interview, November 22, 2014)

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Without question, Sherry's life experiences have impacted her growth as an educator and her commitment to building a strong rapport with students. She views them as individuals and believes she has a responsibility to create a safe environment where they are supported and valued. Moreover, Sherry attributes her growth as an educator to the bond she has with her students:

> I think a lot of my growth has come from having experiences with the students in the classroom and seeing them grow and seeing the, how the experiences they've had with music have an impact on their learning and wellbeing. For a lot of students, music is their safe place. It is where they can be goofy; they can experiment with sound, and be an individual. I learn just as much from them as they learn from me. You can't teach unless you're willing to learn yourself and everyday is a learning experience for me, whether it's a good rehearsal or bad rehearsal. (interview, November 22, 2014)

Sherry spoke about how her relationship with students is impacted by the non-verbal exchange that happens through the music making process. She talked about the powerful bond that exists between her and students during this process and the uniqueness of engaging with them through music.

> I've had so many moments on stage with students - just one moment of eye contact can means so much. It's something that no other area does. It's an experience nobody else has. It's really, powerful. I think for me, sometimes the words get in the way. (interview, November 22, 2014)

Conducting

Aural image. I wanted to learn more about how Sherry conceptualizes music and what informs her conducting gestures. Similar to the other participants, Sherry spoke about the aural image and how this informs her concept of sound and music. She made a clear distinction between her concept of sound versus her interpretation of the music. Her experience as a listener, educator, and musician informs her concept of sound:

> I am able to hear what an unarticulated note sounds like because I've gone back and listened to recordings. I've watched other people teach classes and addressed

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similar issues that I have in my classroom. I learn from those moments and take those lessons back to my classroom so I can determine what my students are doing, why they are doing it, and why things sound the way they do. (interview, November 12, 2014)

Sherry described her interpretation of music by saying it is informed by several components: score study, listening to recordings, and her personal experiences. She talked about how recordings help her develop a concept of the sound and how her experiences shape how she formulates a concept of her interpretation of the piece:

> If you listen to professional musicians you have a concept to work toward. You have that mental image, aural sound, of what it's supposed to sound like. As much as I don't use recordings to determine what my interpretation is of the music I use recordings to help me develop an idea of the sound I want to come out of my ensemble. For me, music isn't a… there isn't just one interpretation of the piece. Music is living, breathing, and that's one of the problems with recordings, you don't have that in-the-moment response. We talk about experiences and how those effect the interpretation of the music. If I can get the kids to connect to it in a personal way, the performance almost always is a more musical performance (interview, November 12, 2014)

Score study. I wanted to learn more about Sherry's approach to score study. How does she study? When does she do it and how does it impact her aural image, teaching, and conducting? Sherry responded as follows:

> We don't want to talk about that! Unfortunately, that is probably my biggest weakness because of the number of ensembles that I teach and so that does not get done the way I would like it to be done. I finger through everyone's part and I've gotten to a point to where if I cannot identify what the issue is in rehearsal, I go back to the score and work through the part [fingering]. For example, I'll take the trumpet part, and I'll go through and make sure that I know what all of the different fingerings are for the notes. Is that something that maybe they've missed? I've found with clarinets that if we're going to a throat tone and they're not thinking about keeping their right hand down, maybe if I finger through and go oh, well that would help them, trill fingerings. That would help! (interview, November 12, 2014)

Responding in the moment. During our final interview and stimulated recall session, Sherry talked a lot about responding to the sound and the students in the

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moment. Initially, the topic came up when she viewed her conducting footage. She noted the challenge of having her head buried in the score and being disconnected from students:

> When we're looking at the score or we're primarily listening to the music in our head [aural image] we're really disconnected from the players. That is why it is so important to have that eye contact with the kids and the ability to connect. That's not happening in this recording, I am buried in the score. And we can hear it in the playing. (interview, November 22, 2014)

I asked Sherry to continue describing how she responds to the sound in the moment and what guides her decisions and gestures. Does she pre-plan her gestures? Does her knowledge of students and their ability guide her expectation of how they will play a piece? She responded to my questions while she watched her conducting footage:

> I can't say that this is all planned, it's not choreographed. It's reacting to the sound, for example, this reacting to what I'm hearing and making in the moment decisions. Knowing that I want the music to be smooth and my gestures are going to be smooth to shape the line. I think the important thing when you're talking to somebody who is not necessarily a musician, is to explain we're trying to look like the music. We want the music to sound like the representation in your head and that automatically makes your body respond. A lot of it is responding to what you're hearing—not reacting to what you're hearing because I feel like a reaction is not necessarily thought out. Responding to it implies having a conversation. You're giving me sound and I'm showing you what I want you to do with that sound. It is planned to the point of where we know what the picture's going to be at the end, but it's not "color-by-numbers." The colors, the hues, can change each time we play it depending on my mood, depending on where the kids are that day, and the performance on stage will never be the same as what it was in the classroom which is what's really pretty cool. So everyday it's a different performance. But there's a concept, not a plan, if that makes sense. (interview, November 22, 2014)

Sherry's descriptions of how she thinks and responds in the moment reveal how her knowledge of teaching, conducting, and students culminates in important decisions that inform her gesture. Her description is a poignant one that brings clarity to an otherwise abstract experience.

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Ongoing development. The stimulated recall portion of our second and third interviews prompted Sherry to closely examine her conducting and describe her ongoing development. As she watched her video, she was critical of herself, especially when she was not making eye contact with students, or when she had tension in her body: "…watching it, I see a lot of tension that I'm hearing in the sound that...so the gesture is not necessarily speaking to the music the way it needs to and it's coming out in the sound" (interview, November 22, 2014). She went on to say that she could hear "tepidness" in the sound. She equated this with the impact her gesture had on the students and in turn, the music.

Sherry talked about her desire to continue improving her gestural vocabulary so she is able to better communicate non-verbally with students. She mentioned that attending symposia gives her the opportunity to focus on these key aspects of her development and work on specific goals that pertain to her conducting craft:

> I am still looking for how to be a good conductor and educator. I want to be able to show the kids what it is that the music should sound like without having to use words to do it. I've found that when I do the conducting symposiums it often reminds me of that. (interview, November 22, 2014)

During my observations of Sherry's rehearsal, I wrote in my field notes that it was clear she had a strong command of the technical skills required for conducting. Her students responded to her gesture effectively, and she was able to effectively communicate musical intention non-verbally. Although Sherry's gesture was confident and communicative, I also noted that she seems to hold tension in her back, which appeared to limit her ability to use a full range of motion with the ensemble.

Instructional Approach

Decision-making. One of the very first observations I made about Sherry's

teaching was her careful and deliberate approach to breaking down concepts for students

(field notes, November 12, 2014). Her approach is very systematic and geared towards

helping students understand the principle behind a concept and apply it to their playing.

Sherry's use of the four domains of knowledge for teaching (Ball, et al., 2008) was

evident throughout her lessons. I asked her to describe her process and how she learned

how to approach teaching this way. She talked about how she has developed this

systematic approach through trial and error:

> I found that in the lesson if they just weren't grasping a concept, I would go back
> and say to myself, what was it that was missing? What was the step that I missed?
> I would go back and I would re-write those lessons so the next time I did it, the
> following year or the next day or the next week I would try another approach.
> (interview, November 22, 2014)

Sherry revealed that her approach to instruction has developed over time. She recounted

that early in her career she spent a great deal of time thinking about concepts that align

rather well with the ideas of Specialized Content Knowledge (SCK) and Knowledge of

Content and Students (KCS):

> Fifteen years ago, I may not have known that was the root cause of the issue, but
> watching other people now I can see where my experiences have allowed me to
> look at what the kids are doing and hopefully analyze that to a point to where I
> can find the spot and something that's going to work for that student. For
> example, when I'm thinking about technical aspects of their playing, like rhythm,
> I have to think like them. How do I get down to their level and peel away the
> layers of my knowledge so that I can teach to where they are? When I first started
> teaching, a lot of times I taught above their ability level. For the first three or four
> years of my teaching, I spent my summers just trying to figure out what they
> know and don't know. I think we make a lot of assumptions when we start
> teaching that because we have so much knowledge from our playing that we
> forget where we were, in middle school and elementary school. Those things just
> come naturally to us, and it takes work to go back and think about where they are
> in their learning. (interview, November 12, 2014)

Not only does Sherry think carefully about how to isolate, deconstruct, and reconstruct

concepts for students, she is thoughtful about varying her instruction for different

learners:

> A lot of my planning is looking at the same issue and trying to figure out a new way to address it, because all of the kids learn differently, and what works best for me doesn't necessarily work best for them. I've learned over time that you have to dress things differently and then the light bulb will go on for someone. (interview, November 12, 2014)

Sherry talked about her experiences with students (KCS) and how it informs her

practice. She talked about her experiences over the course of her career with different

types of learners and the various ability and grade levels she has taught. In addition, she

talked about the knowledge she gleans over the course of the year and how this impacts

her approach to instruction:

> Experience has something to do with it, but also watching the kids and the experiences that you have from the beginning of the year until now. For instance, the concert band kids—I've only had them for two months, but I'm already starting to see patterns with them as far as where they struggle. What issues they might have when I'm score studying and preparing for a rehearsal, going through the score and fingering through passages to see what kind of challenges there might be with fingerings. (interview, November 22, 2014)

I asked Sherry if there is an overarching goal that motivates her to approach

teaching, learning, and instruction. She talked at length about her philosophy of giving

the students tools so that they can be autonomous (KCT). Her philosophy is consistent

across the various grades she teaches, and she talked about the challenges of reinforcing

this philosophy with younger students:

> At the beginning of the year when they come into high school, I tell my students my job is to teach you to be independent and not need me. I can help you shape the music but they need to apply their executive skills (fingering, interpreting dynamics, tempo markings) so we can make music together. That's really hard to do with young kids because all they want to do is the black and white: there's a

note, I push this button down and sound comes out. Getting them to that next level of understanding that the ink on the page means something and they need to think about *how* they play the note is hard. So that I don't have to tell you okay this is how that note should be shaped, you need to make that decision. With the wind ensemble, I can ask them if they are happy with what they are hearing musically. Even though everybody brings a slightly different interpretation, they have to listen to each other and make those decisions. That's where teaching music goes beyond just making the music, it's teaching them how to learn those skills to where they can make decisions, they can work with other people to come to a common goal. Everybody will have a different background but the product that they are creating uses everyone's input. Nobody gets to sit on the bench. Nobody gets to take a time out. Everyone has to be there. I think those are the skills that will make our society better, but it is very challenging for people who are not musicians or music educators to understand this. (interview, November 12, 2014)

Teaching and conducting. I wanted to hear from Sherry if she consciously

makes a distinction between her teacher and conductor knowledge. Does one type of

knowledge guide her instructional strategies, approach to breaking down a score, or

formulating her aural image more than the other? She had a difficult time separating the

two, and replied:

My gut instinct is teacher but I think as a conductor that's something that we have to be able to do. I think I often tell kids that to be a music educator, number one they always think that they don't have to be performers, but if you don't have that musical knowledge background, you can't teach it. So they kind of, they merge, I don't think you can separate the two. I see myself as a teacher first and conducting is something I do to help the kids get there. It's a very interesting question…. (interview, November 12, 2014)

Section Three

Summary

Sherry is an experienced instrumental teacher who taught for twenty-one years.

She spent fourteen years teaching middle school instrumental music and has held her

current position at Spearing High School for seven years. SHS is located in a suburb that

is connected to a large metropolitan area. Sherry conducts various concert ensembles,

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Marching and Jazz bands, and teaches music theory. Sherry came to teaching somewhat later than others. During her undergraduate studies, she was on a career trajectory to become a performer, but changed her mind midway through her degree. She became interested in conducting during her early-years as a classroom teacher, and began to pursue additional work in conducting during her eighth year of teaching.

Sherry is an introvert, and indicated she is a mathematically-minded individual. She noted that her quiet personality sometimes gives the impression that she is cold or disconnected. Despite her outward appearance, she is deeply connected to her school, the well being of her students, and her chosen profession. Sherry spoke candidly about how the loss of her father had a strong impact on her identity. As a result of this traumatic event, she interacts with the world differently. She reported that she cares deeply about her students and attributes the strong bond she has with them to the power of the music making process. Sherry self-identifies as an educator, as the term encompasses the various roles she holds in the classroom and on the podium.

Over the course of her development and career as an educator, three professional role models have inspired Sherry, particularly in the areas of conducting and the relational aspects of teaching. At the start of her career, Sherry felt underprepared and overwhelmed with teaching middle school students. She set out to learn more about how students learn, how to structure and deliver instruction, and how to foster student autonomy. Sherry noted the challenges of teaching instrumental music are the complexities of the job, meeting all of the needs of students, producing a product, and helping students develop life skills.

Sherry's instructional approaches and strategies are carefully crafted. She described using all four forms of the Knowledge for Teaching (SCK, CCK, KCS, KCT) framework and is extremely thoughtful about how she breaks down concepts for students and facilitates understanding. Her teaching philosophy has developed as an outgrowth of her deliberate and systematic approach to instruction. During the stimulated recall, Sherry struggled to identify what informs her decisions and gestures on the podium. She described her process and in-the-moment decision making as interconnected and a fluid exchange between multiple forms of knowledge and skills.

The summary of the codes and findings are organized according to the prominence of each sub-research question (Figure 7). The figures are intended to highlight the salient findings and codes for Sherry Reiter's case, that correspond to the sub-research questions.

Sub-research Question (a): What key experiences do instrumental music teachers describe as being most meaningful to their development as teachers and conductors?

Findings

Identity

Professional Growth

Codes

Career Cycle

Challenges

Role Models

Colleagues

Sub-research Question (b): Which aspects of practice do instrumental music teachers perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors?

Findings

| Relational Work | Conducting | Instructional Approach |

Codes   **Codes**

Aural Image

Score Study

Responding in the Moment

Ongoing Development

Decision-Making

Teaching and Conducting

Sub-research Question (c): What dilemmas of practice (Ball, 1993; Lampert, 1981, 1985) do instrumental music teachers perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors?

Findings

Professional Growth	Conducting	Instructional Approach

Codes   **Codes**   **Codes**

Career Cycle	Aural Image	Decision-Making
Challenges	Score Study	Teaching and Conducting
Role Models	Responding in the Moment	
Colleagues	Ongoing Development	

Figure 7. Summary of codes and findings: Case Four – Sherry Reiter.

Chapter VIII

CROSS CASE ANALYSIS AND ASSERTIONS

Chapter Overview

The first section of this chapter will describe the cross case analysis procedure

used to determine the common and unique findings across all cases. I will begin the first

section with an overview of the analysis procedures, a review of Stake's terminology, and

a detailed description of each cross case finding. This section will conclude with a

summary of the cross case findings and a review of the procedure used in determining the

Assertions. In section two, I will present the Assertions and answer the research and sub-

research questions.

Review of Analysis Procedures

Quintain and Sub-Research Questions

Stake (2006) indicated that the purpose of multiple case study analysis is to

understand the "Quintain". Stake defined the Quintain as: "a theme or research question

running through multiple cases" (2010, p. 220). For the purpose of this study, the

Quintain is the key research question: How do high school instrumental music teachers

describe the intersections between instrumental music teaching and conducting? Stake

indicated that the sub-research questions: "preserve the main research questions for the

overall study" (p. 40). The sub-research questions are: (a) What key experiences do

instrumental music teachers describe as being most meaningful to their development as

teachers and conductors? (b) Which aspects of practice do instrumental music teachers

perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors, and (c) What dilemmas of practice do instrumental music teachers perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors?
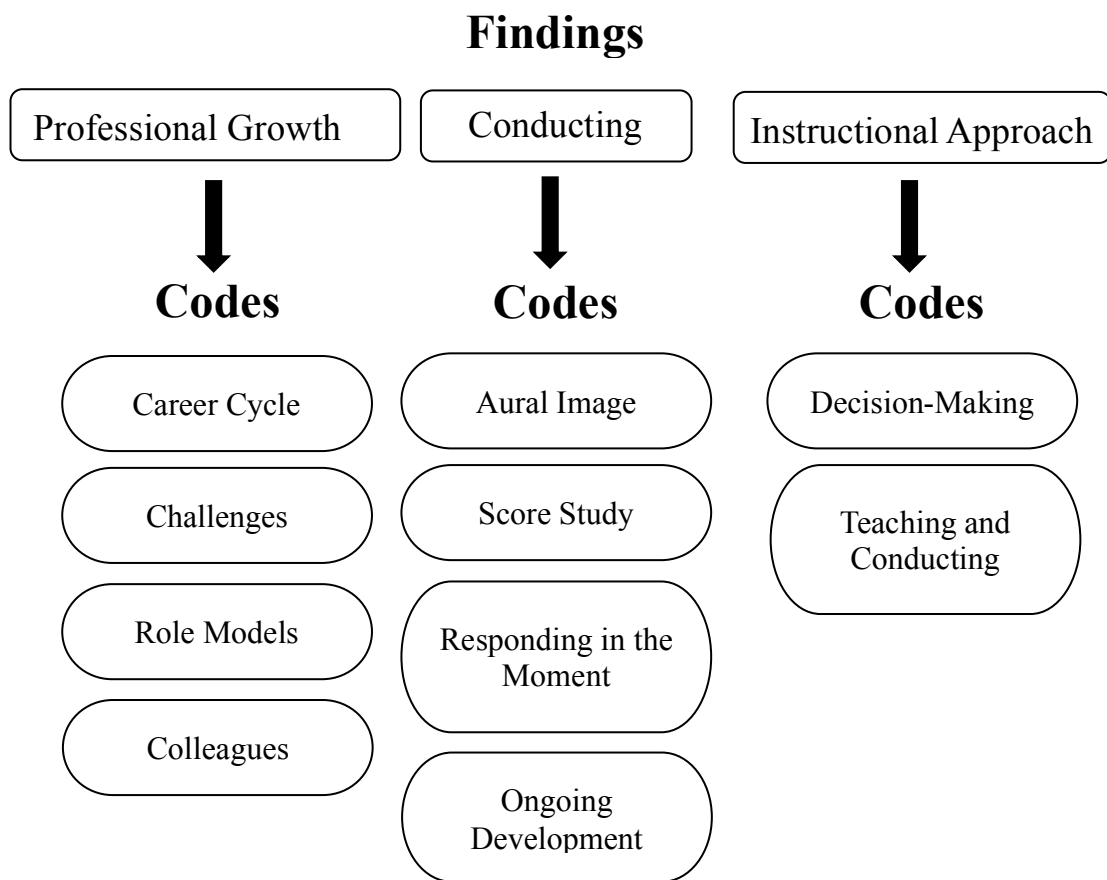
Cross Case Analysis

In the last four chapters, each individual case was analyzed and described in detail to understand the "unique vitality of each case, noting its particular situation and how the context influences the experience of the program or phenomenon" (Stake, 2006, p. 39). Individual case findings were coded and analyzed in terms of their relevance to each sub-research question using Stake's "Worksheet 5A. A Matrix for Generating Theme-Based Assertions from Case Findings Rated Important" (p. 51) (see Appendix G). Using this worksheet, I ranked each finding for the individual cases using a High (H), Medium (M), or Low (L) utility ranking. This ranking was used to indicate the prevalence of the finding within each sub-research question and case. I used single parentheses around sub-research questions that had a high rating in each individual case. For example, based on the data, in Case A - John Winchester, sub-research questions (a) and (c) have single parentheses, which signifies one or more finding(s) within this sub-research question received a High utility rating (see Appendix G). Double parentheses were used to indicate the overall prominence of the sub-research question for each case. For example, based on the data, in Case A - John Winchester, Finding III was rated (H), Finding IV was rated (M), and Finding V was rated (H). Based on the utility rating and number of findings that pertained to the sub-research question (b) , I determined that, overall, sub-research question (b) was most prominent in Case A – John Winchester (see Appendix G). Based

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on this level of analysis, I determined which sub-research question was most prominent

in each case (Table 2). Following the analysis of the individual cases, I analyzed the

rankings across the cases, and based on the utility rating (H), I determined which findings

were common and/or unique across the four cases (see Table 3). For the purpose of the

cross case analysis, unique findings signify experiences that pertained to only one

participant or experiences that were especially prominent for one participant compared to

the others. In the following section, I will discuss the cross case findings. This section is

organized according to the sub-research questions.

Table 2

Overall Prominence of Sub-research Questions in Individual Cases

Sub-research questions	Participants			
	John	Theo	Simon	Sherry
Sub-research question (a)				
What key experiences do instrumental music teachers describe as being most meaningful to their development as teachers and conductors?		X	X	
Sub-research question (b)				
What aspects of practice do instrumental music teachers perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors?	X		X	X
Sub-research question (c)				
What dilemmas of practice do instrumental music teachers perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors?				X

 Note. X - indicates high prominence of this sub-research question for this participant

Table 3

Cross Case Findings Matrix: Common and Unique Findings

	Finding	Common	Unique
<u>Sub-research Question (a)</u>			
	Identity	Theo, Simon, Sherry	
	Professional Growth	John, Simon, Sherry	
	Past Experience		Theo
	Professional Development		Theo
	Motivation		Theo
	Professional Role Models		Simon
<u>Sub-research Question (b)</u>			
	Relational Work	John, Theo, Simon, Sherry	
	Instructional Approach	John, Theo, Sherry	
	Conducting	John, Simon, Sherry	
<u>Sub-research Question (c)</u>			
	Instructional Approach	John, Simon, Sherry	
	Professional Growth and Conducting	Simon, Sherry	
	Identity		Theo
	Professional Role Models – Making it Your Own		Simon

Discussion of Cross Case Findings

Sub-research question (a) - Common Findings

Sub-research question (a): What key experiences do instrumental music teachers describe as being most meaningful to their development as teachers and conductors?

Identity. Each participant touched on aspects of their identity and described how it impacts their approach to teaching, conducting, and interacting with students. They self-identified their professional role in different ways: John as a music teacher, Theo as an all-around musician, Simon as a father, and Sherry as an educator. Identity was a prominent finding for Theo, Simon, and Sherry, as they each described how it plays a major role in their overall approach to their teaching and conducting. For example, Theo spoke candidly about his struggles with self-doubt. He indicated that this self-doubt stems from the public nature of his instrumental music teaching position and the expectations and responsibilities that come with being a public figure in his community. The other three participants echoed similar feelings during the focus group meeting, but Theo's self-doubt surfaced throughout the various points of data collection and appears to impact how he views himself as musician, teacher, and conductor:

> I am constantly in a state of doubt and question the decisions that I have made, because there's always that fear of what the performance will sound like, what the kids will take from it, what the community will think, what it will look like when I'm up on stage in front of this group and I'm conducting. It's just a lot, and it really comes crashing down in my head constantly. (Theo, focus group, October 23, 2014)

Simon described his commitment to honoring the composer is an integral part of his personal identity as a musician, and it guides his philosophical approach in all aspects of his teaching and conducting. Sherry described her introverted nature and the loss of her father as major aspects of her identity. The loss of her father impacts her approach

with students and how she interacts with the world. All four participants displayed knowledge of themselves, their personality, and the aspects of their identity that inform their teaching and conducting.

Professional growth. The participants attributed their professional growth to a number of different factors including past experiences, being a mentor, professional development, career cycle, and role models. John's past experiences with student teaching had a tremendous impact on his development as a teacher and conductor at the start of his career. In his current position as an experienced teacher, he values working with student teachers in the capacity of a mentor teacher. He indicated that working with pre-service teachers contributes to his professional growth, as it requires him to break down the components of his teaching and conducting, and think critically about his practice. Simon actively seeks out opportunities to observe his colleagues and mentors on the podium. He uses these experiences to think deeply about his practice, and attributes his professional growth to the lessons he gleans from these opportunities, as well as the relationships he has with professional musicians and colleagues.

Sherry spoke about the evolution of her career and her desire to learn more about student understanding. Over the course of her career, she has worked hard to understand the connection between student thinking and instructional practices and how to structure and deliver instruction to support student understanding:

> I had to start to peel away the layers to teach the kids how to understand the music before I could teach them anything. So I found that I needed to step back and reassess how I was learning things and, if it came easy to me I needed to figure out why it came easy to me and why it wasn't coming easy to students—what was it that they were missing? Because I think mathematically, I like to take things apart and see how they work—so, why isn't a student understanding something? What can I do to help them get there? (Sherry, interview, October 7, 2014)

Sherry values the mentorship she received from three professional role models and actively maintains friendships with her colleagues. She learns a great deal from watching her mentors and colleagues conduct and interact with students.

Sub-research question (a) - Unique Findings

Although each participant referenced their past experience, professional development, motivation, and professional role models as aspects of their professional growth, these aspects were coded as unique case findings for Theo (past experience, professional development, motivation) and Simon (professional role models) because of the self-described impact they had on their pedagogical development. Furthermore, these findings were coded as unique case findings because of the frequency and prominence throughout the various data sets.

Theo revealed he values self-reflection, and frequently looks back on his past experience to revisit powerful lessons, interactions, challenges, and mistakes that have happened over the course of his career. His past experiences have informed his professional and pedagogical growth. Throughout the three interviews, Theo spent a great deal of time reflecting on his past experiences and relaying how these experiences have impacted his growth as a teacher and conductor, and his ability to find his own personal voice in the classroom and on the podium:

> In my first year of teaching, I was trying to be everybody else as opposed to being myself. It was very difficult for me to think for myself and come up with strategies on and off the podium. I just didn't know anything other than what I had seen from others. So, I was trying to be somebody else: my mentor teacher, my high school director, and/or my college directors. Fast forward five years and I started to get a better idea of who I am and how I relate to the students through the music…and so with that, what I figured out was I have to use my own techniques and my own ways. I borrow some of the ideas from others and have my students work towards the same objective, just in a different way. How can I

get my students there without actually trying to be someone else? (interview, November 17, 2014)

Although the other participants referenced their past experiences in some capacity, the emphasis Theo placed on these experiences suggests that these experiences have and continue to play a major role in his development as a teacher and conductor (field notes, November 10, 2014).

Over the course of his career, Theo has engaged in a number of different kinds of professional development experiences that are related to conducting. He devotes a great deal of his professional development time to workshops, symposia, and conference sessions that pertain to conducting. In addition, he is heavily involved in the state music organization as the conducting symposium chairperson. He actively seeks out opportunities to observe concerts and rehearsals and applies the lessons he learns to his practice. Theo indicated that his motivation to continue pursuing these types of professional development experiences is the importance of conducting to his practice: "[It is] [c]onstant, conducting is the one thing that won't change" (interview, October 8, 2014).

Based on my interactions with Theo, it was clear that his overwhelming sense of motivation drives his professional growth and pedagogical development (field notes, November 10, 2014). He described, his motivation stems from his commitment to his students and the school community. He views himself as a public figure and role model to his students. These roles, coupled with his commitment to the profession, motivate him to continue working on his development as a teacher and conductor. Theo discussed his sources of motivation throughout the three interviews and focus group meeting. The

sincerity in his tone was notable, and left a strong impression on me as I read and re-read

his interview transcripts (field notes, December 1, 2014):

> I'm truly passionate about making music, and as a result I have a responsibility to continue to reach out for that external influence, extra assistance, and critique— all of that while also looking inward to say, and be honest with myself, I can do better. I can do better for my students, I can do better to allow the rehearsals to be an engaging and motivating to the kids where they will want to continue to perform and make music and you know, even hope to carry it on throughout the rest of their lives. (interview, November 17, 2014)

Simon has two professional role models who have played a major role in his

development as a teacher and conductor. His mentors imparted lessons and philosophies

about teaching and music that he continues to draw on today. Early in his career, Simon

tried to replicate his mentors' analogies and stories verbatim, but indicated by his

estimation that he "failed miserably" (interview, October 7, 2014). These strategies did

not seem to translate easily to his own ensemble. Over the course of his career, he has

worked to find his own voice on the podium through carefully examining his strengths,

weaknesses, and tendencies. His self evaluation of when "it works" versus when he

considers it a "failure" is determined by the response he receives from the ensemble, the

connection he has with the ensemble and the music, and his ability to communicate

intention with confidence through verbal and non-verbal communication:

> When you teach music, you have to find your artistic voice, your gestural range, and try to not copy conductors that you've had in the past or mentor teachers that you've had in the past. Take little snippets of what they do that works with you and incorporate it into a more complete picture of you. Personality and identity is so important on a podium. It's just as important as the gestures. Earlier on in my career I would have a miserable time—I was devastated, because I tried to recreate the stories and the techniques that were so sacred to me. I realized when I tried to carbon copy them in rehearsal it was a failure because it was me doing them…I wasn't being myself. (interview, October 7, 2014)

He continues to actively seek out opportunities to observe his role models and gleans a great deal of inspiration from their teachings and mentorship.

Simon referenced his two professional role models throughout the three interviews and focus group. I designated his professional role models as a unique finding because of the emphasis Simon placed on these experiences. He spoke with great enthusiasm and passion about how these experiences have impacted his growth as a musician, teacher, and conductor. Based on Simon's recollections, it is clear that his professional role models have left a lasting impression on his personal and pedagogical development (field notes, November 11, 2014).

Sub-research question (b) – Common Findings

Sub-research question (b): What aspects of practice do instrumental music teachers perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors?

Relational work. The four participants in this study are deeply committed to their students and strive to create supportive learning environments where their students can learn, grow, and develop as musicians. Relational work is the only case finding that was prominent across all four cases. Each participant described the relational aspect of their practice in different ways. John spoke about the importance of knowing his students as people, knowing their families, and watching their growth from middle school students to adolescents. He described the power and uniqueness of this relationship, and indicated that the connection he has with his students impacts the music making process. In addition, he talked about the collaborative nature of teaching music and conducting a large ensemble. Theo strives to build lasting connections with his students and fosters this

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connection through a supportive learning environment. He talked about the importance of being empathic and balancing expectations of students with their needs as people. Theo attributes his ability to be nurturing and empathetic with his experience of being a father. Similarly, Simon brings a level of sincerity and commitment to his interactions with students. Simon talked about the importance of being sensitive to students' needs, context, and environment. In addition, he talked about the value of being flexible, and responding to students in the moment. Simon expressed his philosophical belief that in order to succeed, conductors need to be educators and build connections with their students. Sherry's connection and commitment to students is a cornerstone of her practice. Her life experiences have impacted her commitment to building a strong rapport with students such that she believes she has a responsibility to create an environment where students feel supported and valued. Sherry described the powerful bond that exists between her and the students, and she associates this with the non-verbal exchange that takes place during the music making process. Notably, the participants stressed the importance of showing vulnerability to the students. John noted when teacher's model vulnerability it resonates with students and encourages them to be vulnerable and expressive through music. Theo and Simon likened being vulnerable with showing students who he is as a person and not just in the role as a teacher or conductor.

Instructional approach. The participants in this study described their approach to instruction as a key aspect of their practice that reflects the intersection between instrumental music teaching and conducting. It was difficult for John, Theo, and Sherry to categorize their thinking and decision-making into separate "teaching" or "conducting" silos. Rather, they described how their decisions (the knowledge that informs them, and

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the knowledge and skills required to execute them) are influenced by the merged understanding of content, students, teaching, and pedagogy. Through data analysis, I interpreted this merged understanding of content, students, teaching, and pedagogy in relation to the Knowledge for Teaching framework (Ball, et al., 2008). The participants' descriptions and my observations were consistent with domains of knowledge that are outlined in the Knowledge of Teaching framework (Ball, et al., 2008): the participants' knowledge of content (Common Content Knowledge, or CCK), their knowledge of students (Knowledge of Content and Students, or KCS), and their teaching and pedagogy knowledge (Knowledge of Content and Teaching, or KCT).

John indicated his belief that his ability to formulate an aural image of the sound, respond to the music in the moment, give gestures that match his intent, anticipate student needs, and make formative assessments in the moment, reflect his integrated knowledge of teaching and conducting. Theo's description of his day-to-day decisions and actions revealed his simultaneous use of the four forms of knowledge. Through my observations and analysis, I interpreted John and Theo's ability to anticipate concepts that will be challenging for the students as using KCS. Their ability to sequence instruction and assist students in the moment was informed by their knowledge of music, thus demonstrating their use of KCT, CCK, and SCK. Theo's ability to anticipate and understand how students interpret concepts guides his approach to instruction and conducting.

Sherry described her approach to instruction as careful and systematic. Her use of the four domains of knowledge for teaching was evident throughout her lessons. Over the course of her career, Sherry has spent a great deal of time thinking about SCK and KCS, or, specifically, how to isolate, deconstruct, and reconstruct concepts for students:

Fifteen years ago, I may not have known that was the root cause of the issue, but watching other people now I can see where my experiences have allowed me to look at what the kids are doing and hopefully analyze that to a point to where I can find the spot and something that's going to work for that student. For example, when I'm thinking about technical aspect of their playing, like rhythm… I have to be able to think like them. How do I get down to their level and peel away the layers of my knowledge so that I can teach to where they are? When I first started teaching, a lot of times I taught above their ability level. For the first three or four years of my teaching, I spent my summers just trying to figure out what they know and don't know. I think we make a lot of assumptions when we start teaching that because we have so much knowledge from our playing that we forget where we were, in middle school and elementary school. Those things just come naturally to us, and it takes work to go back and think about where they are in their learning. (Sherry, interview, November 12, 2014)

Conducting. The participants had a difficult time separating their teaching knowledge from their conducting knowledge and skills, which implies that they do not perceive them as being separate entities. They described the interconnected nature of the practice, and indicated that teaching, conducting, and their relationship with students all affect their decisions and actions on the podium:

…it's so organic because it comes and goes at different times. I'm constantly trying to pull myself back into being the teacher who is the conductor, you know, let the gesture inform them just as much as the verbal instruction. (Theo, interview, November 10, 2014)

John divided the aspects of conducting into two categories: conducting craft (technical and kinesthetic aspects of conducting) and the aural image. Each participant used the term "aural image" to reference their concept of the music that they hear in they hear in their head. The aural image informs how the participants approach a piece of music and the type of gesture they use to communicate (non-verbally) their concept of the piece. In addition, the aural image guides their in-the-moment assessment of what the ensemble plays, which triggers a gestural response. The participants indicated that their aural image is influenced by score study (music theory and history knowledge), knowledge of

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repertoire (musical style, difficultly level), knowledge of instrumentation (pedagogical

considerations including range), and knowledge of students (ability level). The

participants noted that their ability to formulate an aural image, listen in the moment,

diagnose problems, and respond non-verbally has developed over time:

> …in the first couple years of my career, I would literally write my thoughts down on the napkin I used at lunch. Now, the process is more refined and fluid. I have a mental recording, and I can mentally highlight measures and picture them in my mind's eye in the score, so when I come back to rehearsal the next day, I know what to touch on. (Simon, interview, November 11, 2014)

> I can hear it. I look at a score in the beginning, and I know what it's supposed to sound like. I think that's one of the things that is really challenging, because, as you're conducting, you have that aural image in your brain and then you're listening, and you're trying to do all of those things together. That's really the big challenge is being able to process all of those things together. (John, interview, October 6, 2014)

> During the focus group meeting, Sherry and John addressed the additional aspects

of teaching students how to respond to conducting, and referred to conducting as a

second form of communication:

> A lot of that with the conducting is the communication. And that's what I really enjoy about conducting with my ensembles is that it's a conversation that I'm having with kids that nobody else has had that conversation with them. It is a really different form of communication that is powerful, it's [a] really important part of what we do. (Sherry, focus group, October 23, 2014)

Theo remarked that students are able to respond to gestures because they have an

understanding of this secondary form of communication and because a rapport has been

established between him and the ensemble:

> We [Theo and his students] have a symbiotic relationship and a bond. I know that I can use gestures to show what I want musically and that it will elicit a response out of the students without it being pre-determined. (Theo, interview, November 10, 2014)

Sub-research question (b) – Unique Findings

Although there was a degree of variance in how the participants described and
perceived aspects of their practice, no one participant expressed a finding that was unique
from the others within this sub-research question.

Sub-research question (c) – Common Findings

Sub-research question (c): What dilemmas of practice do instrumental music
teachers perceive and describe as being related to the intersection between instrumental
music teaching and their development as conductors?

Instructional approach. All four participants had difficulty thinking out loud and
responding to questions during the stimulated recall sessions. Based on my interactions
with the participants and analysis of the data, it is unclear if the participants struggled
with this because their teaching and conducting has become automatized and their
knowledge is tacitly held, or if it is because they are not accustomed to deconstructing
and naming the components of their teaching and conducting. After the final stimulated
recall session, John addressed the complexities surrounding listening and making
decisions in the moment:

> I have to be able to assess what the students are doing and then give meaningful
> feedback—some type of formative assessment in the moment. I have to be able to
> listen to what's happening in rehearsal and then make some kind of evaluation
> that is informed by my knowledge of the music, what I hear from the ensemble,
> and what I know about students. It is so hard to explain it to people that don't
> really understand it—but you know, I guess that's all I can say is, I am constantly
> listening and assessing. From there I decide whether or not it's something that we
> can work on, or if it is a situation where were need to move on and revisit. It is
> tough…. I am still working on it. (John, interview, November 17, 2014)

He described that his knowledge and skills in this area have improved over time and that
he continues to work on this aspect of his practice.

Sherry addressed the challenges associated with teaching younger students and helping them develop a deeper sense of understanding and autonomy in music:

> At the beginning of the year when they come into high school, I tell my students my job is to teach you to be independent and not need me. I can help you shape the music but they need to apply their executive skills (fingering, interpreting dynamics, tempo markings) so we can make music together. That's really hard to do with young kids because all they want to do is the black and white: there's a note, I push this button down and sound comes out. Getting them to that next level of understanding that the ink on the page means something and they need to think about *how* they play the note is hard. So that I don't have to tell you okay this is how that note should be shaped, you need to make that decision. (Sherry, interview, November 12, 2014)

Sherry described her ongoing commitment to finding instructional approaches that support the development student autonomy, particularly with younger students.

Professional growth and conducting. The participants described a range of topics that pertain to the dilemmas of practice of teaching instrumental music and their development as conductors. Sherry, for example, spoke candidly about the challenges and complexities with teaching instrumental music. She addressed the scope of expectations that are involved with teaching instrumental music and highlighted challenges she faces in her day-to-day teaching, including: meeting the needs of all students, choosing age and ability appropriate repertoire, and helping students develop life skills:

> I think a lot of it is all of the different levels that are in a class and trying to make sure that you are meeting all of those students' needs and still producing a musical product; teaching them not only music but life skills. There is just so much involved in what we do every day that it can be overwhelming, but it can also be so rewarding to watch these kids succeed maybe in music, maybe in academics, maybe in something else. We have a really special bond because we spend so much more time with them-we have a different connection with kids than their other teachers do. In terms of the job, there are a lot of different things that come up on a daily basis and every day is different. Today it was did I spend too much time on the warm up? Tomorrow it might be am I working enough on articulation? Am I spending enough time working on the actual literature? The

longer we're in the job, the more we know we don't know. (Sherry, focus group, October 23, 2014)

Sherry and Simon talked about the physical challenges associated with conducting and the problem they have with holding tension in the body. They pointed out that their physical tension is painful, impacting both their communication with the ensemble and the subsequent sound. Simon described the tension he feels is a result of engrained conducting and physical habits that are difficult to self-identify and correct. He continues to work on this aspect of his practice, and noted he wished it had been addressed during the formative years of his development as a conductor:

> It is difficult, because conducting is a powerful experience. When you have a very rich, grandiose passage in music, it's easy to feel tension because you feel it so deeply. The reality is, when you're tense, you're really limiting what you can do with your gestures. (Simon, interview, October 7, 2014)

Sub-research question (c) – Unique Findings

The findings of identity and professional role models are cross-listed under sub-research question (a) (What key experiences do instrumental music teachers describe as being most meaningful to their development as teachers and conductors?) and sub-research question (c) (What dilemmas of practice do instrumental music teachers perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors?) as the participants' (Theo and Simon) descriptions pertained to both sub-research questions.

Identity. Theo's underlying doubt and self-consciousness was a powerful aspect of his self-described professional identity. His desire to be a confident teacher and conductor revealed his commitment to his job and students. Theo's struggle with his visible presence in the community also highlights the public nature of teaching

instrumental music and the scope of responsibilities that come with the position. Although the other participants agreed and echoed similar sentiments, this was a powerful and pervasive finding in Theo's case.

Professional role models. Although Simon has a strong sense of self and identity both in the classroom and on the podium, he talked about the challenges he faced at the beginning of his career with finding his own voice. Simon had powerful role models who left a lasting impression on him as a student, teacher, and conductor. At the start of his career, he tried to replicate their stories and analogies because they meant a great deal to him as a student. After failed attempts at recreating moments from his mentors, he realized he needed to find his own voice and deliver the essence of these powerful lessons in a voice that was authentically his. According to Simon, it has taken him a decade to arrive at a place where he knows his strengths and weaknesses and has the confidence to bring his personality and personal stories to the podium.

Summary of Cross Case Analysis

The purpose of multiple cross case analysis is to understand the Quintain. Cross case analysis was used to understand the uniqueness of each case and address the similarities and differences across cases. Based on the data and cross case analysis procedures, sub-research question (b) was the most prominent across the cases (John, Simon, Sherry), followed by sub-research question (a) (Theo, Simon), and sub-research question (c) (Sherry). The most common findings within sub-research question (a) were Identity and Professional Growth. The participants' descriptions of individual identity revealed the role it plays in their approach to teaching, conducting, and their interactions with students. Similarly, although the participants attributed a range of factors to their

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professional growth, overall they described their past experiences and professional development as being key experiences that are meaningful to their pedagogical development. The unique findings within sub-research question (a) were Motivation (Theo) and Professional Role Models (Simon).

Based on the analysis of the data, it is clear that the relational aspects of teaching and conducting are an integral component of the participants' practice. Relational work is the only case finding that was common and prominent across all four cases. The participants described knowing their students, forging lasting connections, building safe and supportive learning environments, and showing vulnerability as being imperative for teaching and learning in the large ensemble context. The participants also indicated that their approach to instruction is a key aspect of their practice. It was difficult for the participants to distinguish their teaching knowledge and skills from their conducting knowledge and skills. Their integrated knowledge of students and pedagogy, alongside their knowledge and skills as teachers, musicians, and conductors appears to inform their decisions and actions. Although there were differences in how the participants described their practice, no unique finding emerged from the data.

The participants had difficulty deconstructing and describing the fine grain aspects of their practice and their tacit knowledge. They described dilemmas of practice as: instructional practices, particularly listening and responding in the moment, the scope of expectations involved with teaching instrumental music, and the day-to-day aspects of teaching including meeting the needs of all students, choosing repertoire, and helping students develop life skills. Two participants described the physical challenges associated with conducting including holding tension in the body. All four participants indicated

self-doubt and the challenges they face with finding their own voice on the podium are dilemmas of practice; however, these dilemmas of practice were only pervasive across all data sets in two cases. The unique findings within sub-research question (c) were doubt and self-consciousness (Theo) and finding one's voice on the podium (Simon).

The following section will discuss the Assertions for the research question and sub-research questions. Stake (2006) indicated that Assertions are formulated after the cross-case analysis is completed, and the Assertions should have a "single or common focus, a contribution toward understanding the Quintain" (p. 56). The process of synthesizing the cross-case findings into single-orientated Assertions is required to bring clarity and understanding to the Quintain (Stake, 2006).

Assertions

Purpose and Research Questions

The purpose of this study was to examine the complexities of instrumental music teacher knowledge and explore how participants describe the intersections between instrumental music teaching and conducting. As such, the key research question guiding this study was: How do high school instrumental music teachers describe the intersections between instrumental music teaching and conducting? Sub questions included (a) What key experiences do instrumental music teachers describe as being most meaningful to their development as teachers and conductors? (b) Which aspects of practice do instrumental music teachers perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors, and (c) What dilemmas of practice do instrumental music teachers perceive and describe as being related to the intersection between instrumental music teaching and their

development as conductors? The Assertions for this study are based on the individual and the cross case analysis. Moreover, they are based on the experiences and perceptions of four participants and are intended to support the ongoing research surrounding teacher knowledge in music education.

Response to the key Research Question (Quintain) – Assertion 1

The central Assertion suggests that the practice of instrumental music teaching demands a specialized form of knowledge that reflects the integration, rather than the intersection, of both teaching and conducting. The data suggest a rejection of the notion of there being an intersection between teaching and conducting within instrumental music teaching practice, as the term "intersection" suggests that they are separate entities (see Figure 8). Rather, the participants indicated that teaching and conducting are integrated and that they draw upon each of these areas simultaneously during their practice (see Figure 9). This specialized knowledge informs the participants' in-the-moment decision-making, judgments, decisions, and communication with students and the ensemble as a whole. The participants noted that, at times, their in-the-moment decisions and responses to the students and the ensemble may require them to draw more heavily on one aspect of their knowledge rather than the other (teaching or conducting); however, the two are never completely divorced within their thinking.

Instrumental music teaching and conducting are inextricably linked. This specialized knowledge is complex and deeply engrained in the participants' teaching practice. It informs the participants' in-the-moment decision-making, judgments, decisions, and communication with students and the ensemble as a whole. (Ball, 2000;

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Ball & Bass, 2000; Grossman, 1990; Grossman et al., 2009; Shulman, 1986; Shulman,
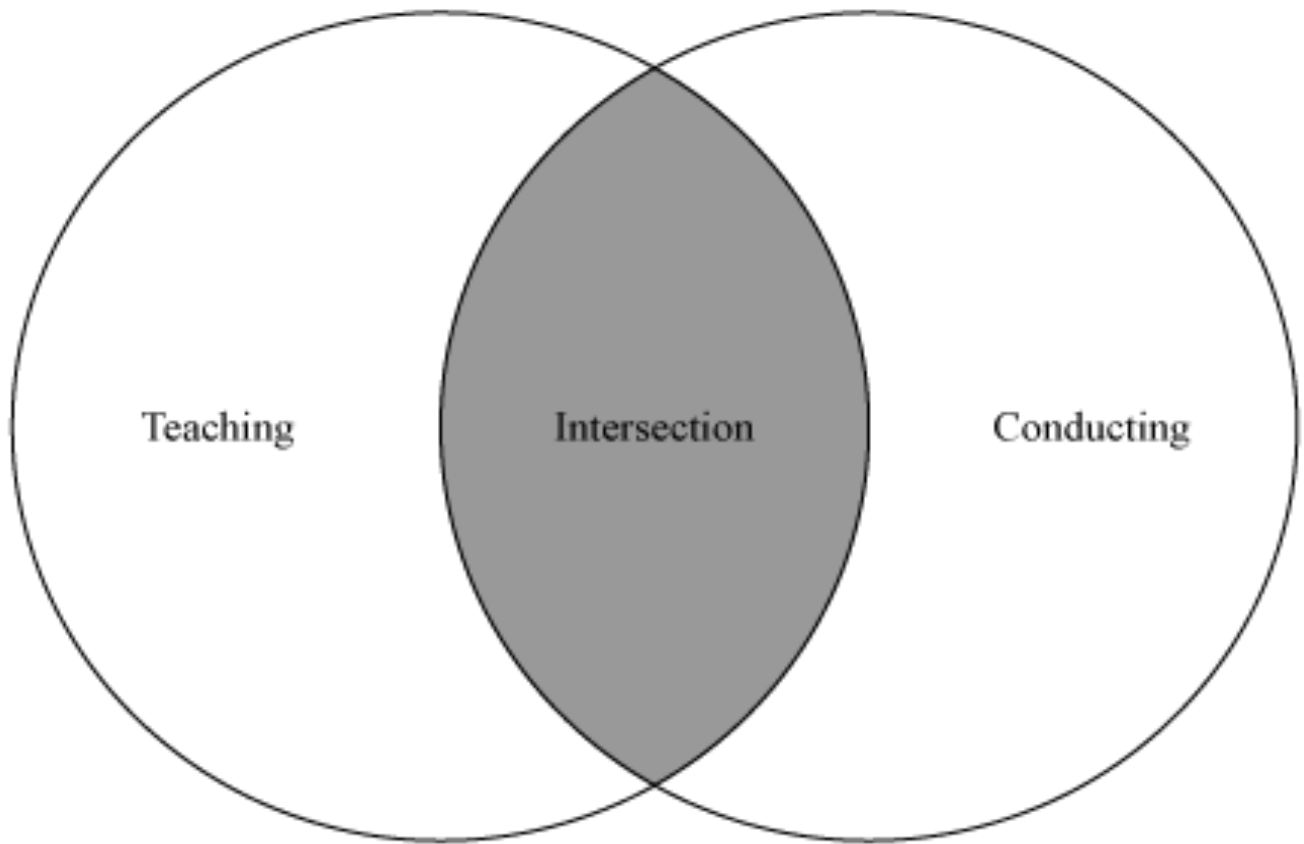
1987).

Figure 8. Specialized Knowledge for Instrumental Music Teaching: Visual
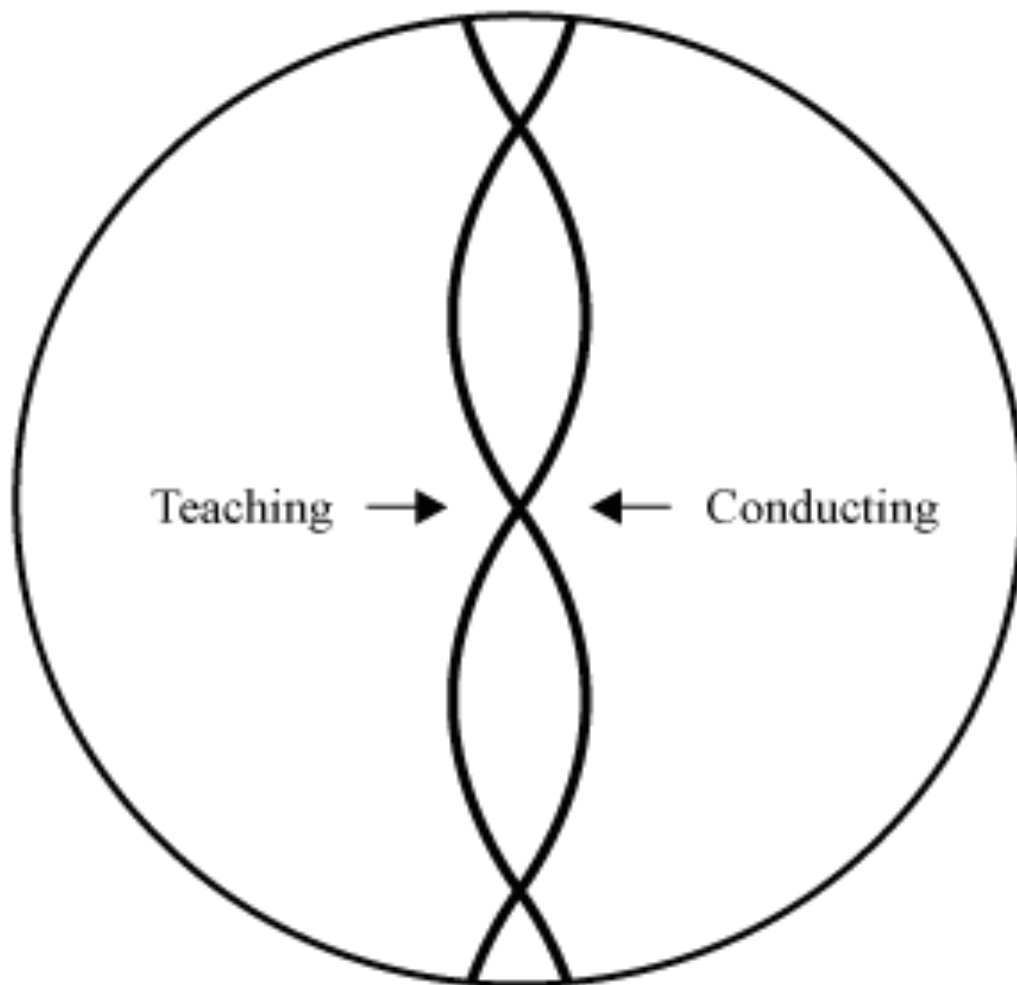
representation of Intersection Model

Figure 9. Specialized Knowledge for Instrumental Music Teaching: Visual

representation of Integration Model

It is actively created by the participants, and it is influenced by their past experiences, identity, knowledge of students, context, and worldview (Cochran et al., 1993; Fenstermacher, 1994; Shulman, 1986; Shulman, 1987). Although this specialized knowledge is central to the participants' practice, it was difficult for them to name, unpack, and describe how their knowledge is used in practice (Clark & Lampert, 1986; Ericsson & Simon, 1980; Fenstermacher, 1994; Taylor & Dionne, 2000; Westerman, 1991).

The participants demonstrated their application of this specialized knowledge in the description of their day-to-day practice. This ranged from how they approach repertoire selection, rehearsal strategies, to their gestural representations that embody their knowledge of the music, and pedagogical knowledge of students and teaching. For example, when considering the process involved with rehearsing a piece of music, the participants indicated that they choose repertoire based on their knowledge of their students' ability level, progression and development as musicians, and the appropriateness for the context of the concert and/or festival. The participants' ability to interpret the score draws on their performance and music history knowledge. Their ability to formulate an aural image requires them to use their performance, music history and theory knowledge. When they develop strategies for rehearsal techniques and sequencing, they draw on their knowledge of performance, music history, music theory, and their knowledge of students, teaching, and pedagogy. Finally, their ability to express themselves physically, verbally, and emotionally through gesture is an amalgamation of the aforementioned knowledge and skills coupled with the kinesthetic knowledge and skills required for conducting (Baker, 1992; Ball, 2000; Ball & Bass, 2002; Grossman,

1990; Grossman & McDonald, 2008; Grossman et al., 2009; Shulman, 1986; Shulman, 1987; Spencer, 2000).

During the in-person observations, the participants described their thought process and the decisions they make before the class/rehearsal begins. Before the students enter the room, the participants make pedagogical decisions about how the room is set up, the atmosphere of the room, and the learning objectives for the class. For example, John described this aspect of his process:

> I'm really a stickler about the set up, so I go through and make sure that every chair is in the right spot and everybody has a stand so that when they come into the room they have like a place to go and they're not, like, rummaging around. I think that's just something that's really important to me, I feel like if the students walk in and the chairs are all messed up then it just makes for a rougher start to the class. I always do a PowerPoint presentation that takes about five or ten minutes to prepare. It has what we're doing for the day: the warm up, the lesson plan, and just recently I started putting learning targets up, kind of like objectives for what they're supposed to get for the day. (John, interview, October 6, 2014)

Theo described a similar process:

> To get prepared for today's rehearsal, I've again started out coming in this morning and getting all of the chairs and [music] stands set up. I also get the overhead announcements set. And then I'm always thinking through what I'm looking to rehearse that day. But for all three groups, I start out with our warm-up sets which is from the foundations for superior performance books and so they, you know, start out with the lip slurs and the technical exercises for the woodwinds and then we do scale studies and then we'll do a coral after tuning and getting that all together. But I always start each rehearsal with music. When I start with talking or announcement or anything like that that affords the students the time to continue to shuffle, continue to end their conversation or continue their conversation, not as important to have their instruments out and ready as opposed to when they know that I step on the podium, arms come up the first thing that's going to happen is music, then that brings their focus in. So, those are the things that before the rehearsal that I'm thinking about and that I'm actually gathering together. (Theo, interview October 8, 2014)

In order to devise appropriate rehearsal strategies, the participants recalled and reflected on what they heard in the previous class. Based on this, they planned strategies that

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would further the learning and understanding process, and they considered how their

gestures would reflect their intention and communicate instructions to the students. This

process revealed the four domains of knowledge (Common Content Knowledge – CCK;

Specialized Content Knowledge – SCK; Knowledge of Content and Students – KCS; and

Knowledge of Content and Teaching - KCT) (Ball, Thames, et al., 2008): recalling and

reflecting on the previous class (SCK, KCS, KCT), planning strategies (CCK, SCK,

KCS, and KCT), gestural communication (SCK, KCT, KCT). For example, Theo

described this aspect of his planning:

> Theo: So then as far as the music that I'm conducting each day, from the previous rehearsal I already have mental notes in my mind, and I know that this doesn't help out somebody that is walking in fresh to rehearsal, because I believe that we are notorious as music educators for having lesson plans in our heads and just knowing. We know that it's going to change at any point, based on what the needs of the ensemble are.
>
> Sommer: How do you make those mental notes? What do you base them on? Can you break this down further?
>
> Theo: Based on what I had heard in that rehearsal, sometimes I'll come down and jot down notes, things sometimes I'll just circle something in my score. Anytime I've got a free moment, any time that I'm able to think back on a rehearsal my mind automatically goes to what did I hear? What do I need to address? What are those things that I feel are going to correct themselves? And what are those things that I'm going to need to make sure that I bring to their mind? It is a constant thought process. Even now I'm already thinking of things in the Bach piece, that I can go back to tomorrow and address. That piece is so engrained in my mind in terms of what I want to hear versus what I heard. (Theo, interview, October 8, 2014)

The participants indicated that their rehearsal plans are more of a "skeletal" plan,

because they need to be flexible and consider the social climate of the class as the

students enter the room. Once the class began, the participants engaged in the ongoing

and simultaneous exchange of showing instruction and intent, listening and assessing in

the moment, measuring what they heard against their aural image, and responding to the

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stimulus in an appropriate way that reflected artistic style and intent. All of these judgments and actions required cognitive reasoning, content knowledge, specialized content knowledge, knowledge of students, teaching, pedagogy, and the application of kinesthetic skills. As Spencer (2000) indicated, the complexities of this specialized knowledge is further complicated by the temporal nature of sound and the subjective element of the artistic process.

Durrant (1994) grouped the skills needed for effective conducting into three broad categories: (i) Philosophical underpinnings and aesthetic sensitivity: preparation (knowledge of the voice/instrument, score study, performance practices, aural skills), rehearsal strategies, performance skills (refined gestural vocabulary); (ii) Technical and musical skills: mastery of technical skills, application of musical knowledge to guide physical gesture; (iii) Personality behavior and communication skills: ability to communicate and work with others (p. 61). The participants' identity, past experiences, professional growth, and context have contributed to their philosophical underpinnings and aesthetic sensitivity. These components, coupled with the subjective nature of the artistic process, highlight the unique and complex nature of teaching music. The participants did not address the finer grain aspects of their technical conducting skills (baton technique, beat patterns, cuing); however, Simon and Sherry addressed the physical aspect of their conducting. They described the impact tension has on them as individuals and how it impacts the quality of their gesture, communication, and the sound.

The most prominent finding across all cases was the relational aspect of the participants' practice. Durrant identified this as the third skill necessary for effective

conductors: (iii) Personality behavior and communication skills: ability to communicate and work with others (p. 61). Rudolf (1994) echoed Durrant and highlighted the relational aspect required of conductors: "…musicianship and thorough study of scores are of little help unless a conductor knows how to talk to people, work with them, and get results in a quick and direct manner." Relational work is implicit in the teacher knowledge literature as the philosophical and psychological frameworks are contingent upon the relationship and exchange between teachers and students (Durrant, 1994; Grossman, Compton, Igra, Ronfeldt, Shahan, & Williamson, 2009; Grossman & McDonald, 2009; Lampert, 2009, 2010; Rudolf, 1994; Verloop et al., 2001). The participants in this study did not denote the relational aspect of their practice as being exclusively related to teaching or conducting. Rather, they indicated the relational aspect as being a cornerstone of their practice that is integrated in every aspect of their judgment, action, and reasoning as teachers, musicians, and conductors.

Discussion. The central Assertion from this study suggests instrumental music teaching and conducting are fully integrated. The participants indicated this specialize and integrated knowledge informs their day-to-day practice and guides decisions, judgment, and action. This Assertion supports previous studies in music education that found music teacher knowledge and skills are multifaceted, interconnected and inform practice, decisions, judgment, and action (Ballantyne, 2006; Ballantyne & Packer, 2004; Bauer & Berg, 2001; Burnard, 2013; Duling, 1993; Gohkle, 1994); however, the Assertion from this investigation specifies and describes how the participants use this specialized knowledge in practice. A function of the participants' specialized knowledge is their ability to respond to sound stimuli and express themselves physically, verbally,

and emotionally through gesture. The ongoing action of hearing, moving, and responding is informed by the aural image, kinesthetic awareness, knowledge of students, and teaching (Haithcock, 2008). The participants indicated that they respond kinesthetically to the sound stimulus, which they measure against their aural image. The aural image is developed through the score study process, which draws on musical knowledge, including: theory, history, and performance practices. The participants cited the challenge with being able to move freely without tension and their range of gestural vocabulary. They described how these challenges impact their ability to communicate effectively with their students and it impacts the quality of the sound. The aural image and kinesthetic awareness represent knowledge and skills that are typically associated with learning how to conduct, whereas the ability to respond to an ensemble draws on teaching and conducting knowledge. The participants made this distinction when they talked about the technical skill versus the knowledge for conducting. The latter encompasses their identity and role as a teacher and conductor, their interaction with students, and their ability to make informed and artistic decisions based on their aural image, musical knowledge, and knowledge of students.

The participants indicated that their ability to anticipate, assess, and respond in the moment also draws on their knowledge of students and teaching. They have an understanding of their students' abilities based on their development level and can anticipate what will be challenging for the students, which challenges will require teacher support, and which challenges can be resolved by the students. The participants' ability to anticipate these challenges and offer appropriate suggestions, tools, and strategies highlights their knowledge of content, students, and teaching. The participants'

perception and description of the intersection between instrumental music teaching and conducting supports previous research in conducting teaching and learning which indicates there is a gap or in-balance in how the various components of conducting are taught and learned (Baker, 1992; Boardman, 2000; Lindahl, 2010; Manfredo, 2008; Romines, 2004; Runnels, 1992; Silvey, 2010; Spencer, 2000). Furthermore, this Assertion reveals the relationship between knowledge and skill development and the application to practice (Ballantyne, 2006; Ballantyne & Packer, 2004; Bauer & Berg, 2001; Burnard, 2013; Duling, 1993; Gohkle, 1994).

Response to Sub-research Question (a) – Assertion 2

What key experiences do instrumental music teachers describe as being most meaningful to their development as teachers and conductors?

No single experience emerged as being the most meaningful to the participants' development as teachers and conductors; however, identity and professional growth (past experiences, role models, and professional development) were the two common findings that played a substantial role in each participant's development as teachers and conductors. This Assertion is consistent with Haston and Leon-Guerrero (2008), who examined the factors that influence the acquisition of Pedagogical Content Knowledge (PCK) with preservice instrumental teachers. Similarly, the data in their study did not reveal a single, predominant factor that influenced their acquisition of PCK. Although Haston and Leon-Guerrero examined a different population than the present study, findings from the two studies suggest that instrumental music teachers' (preservice and in-service) pedagogical development is influenced by multiple sources. Furthermore, Haston and Leon-Guerrero indicated the importance of context as a variable that

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influences the acquisition of PCK. This finding is consistent with the present study, as the participants' identity and professional growth are connected to their personal and professional contexts.

Identity. The cross case analysis of the inter-case findings revealed that identity was a prevalent and emergent Assertion in this study. The participants' description of their identity revealed the complexities surrounding how they self-identify as professionals. This inter-case finding and cross case Assertion is consistent with the empirical research on identity in music education that suggests music educators balance multiple identities and roles (Austin, Isbell, & Russell, 2010; Bernard, 2005; Campbell, 1999; Conkling, 2003; Dolloff, 1999, 2006, 2007; Isbell, 2008; Thompson & Campbell, 2010; Woodford, 2002). Dolloff (2007) cited Bouij (2006) and indicated there is a distinction between the nature of role versus identity:

> "Role" is what a teacher *does* while "identity" is who a teacher *is*: how and individual integrates his or her evergrowing/everchanging skills, beliefs, emotional response to the teaching/learning act and to students, and subject-specific knowledge…placing identities in an either-or dyad assumes the role that we fulfill as a music educator can be narrowly and indisputably defined. In fact we must bring all that we are to our role as music educators. (p. 3)

The participants' varied self-identification: as music teacher, all-around musician, father, and educator, highlights the range of identities and roles they negotiate. Their self-described identity and role is a lens through which they perceive, interpret, and understand the tasks and complexities of their practice. Moreover, it forms the basis of their philosophical and sociological approach to their pedagogy and practice as teachers and conductors.

The participants' perceptions and understanding of themselves reveals the interconnected epistemological and sociological character of teacher knowledge

(Fenstermacher, 1994; Green, 1997; Woodford, 2002). Citing Green (1997), Woodford (2002) stated: "…our perceptions and understandings of the world and everyday reality are socially mediated and constructed, meaning that they are built up through social experience" (p. 675). The findings from the data indicate past experience and role models are a major factor that influenced the participants' identity and professional growth. This is consistent with Woodford (2002) who stated:

> Identity, too, is socially constructed in the sense that knowledge of self and others and of appropriate behavior within particular social roles is acquired through prior experience. (p. 675)

Professional growth – past experience. All four participants recounted powerful experiences from their education, of former teachers and mentors who had a major impact on their pedagogical development as teachers and conductors. The prominence of these experiences supports the empirical research that indicates teachers' beliefs and pedagogical approaches are informed by their past experiences (Bauer & Berg, 2001; Duling, 1992; Gohlke, 1994; Haston & Russell, 2012; Lortie, 1975; Woodford, 2002). Lortie (1975) indicated that teachers develop a concept of what it means to be a teacher through the "apprenticeship of observation" they experience as students (p. 61). Unlike other professions, teachers spend hundreds of hours observing their teachers and mentors as students themselves. These experiences contribute to teachers' identity development as professionals and their pedagogical development as practitioners. Further, during their preservice teacher education, instrumental music educators spend hundreds of hours participating in ensembles where they have the opportunity to observe conductors. Researchers in music education make the distinction between primary socialization (parents, peers, and school music teachers) and secondary

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socialization (university music teachers and peers) (Dolloff, 1999; Haston & Russell, 2012; Isbell, 2008; Woodford, 2002). The participants in this study cited sources from secondary socialization (university music teachers and peers) as playing a major role in their professional growth and pedagogical development.

Professional development. Data analysis revealed that the participants favored the opportunity to observe colleagues, peers, mentors, and professional musicians and conductors as the primary source of professional development. The participants described that observing others teach, rehearse, and conduct, gave them insights into a range of pedagogical and practical aspects of teaching instrumental music including: exposure to new repertoire, rehearsal techniques, insights into interpretive decisions, a concept of age and ability appropriate, and conducting techniques. John spoke about the importance of observing others and how these forms of professional development impact his pedagogical development ranging from smaller aspects of his practice (practical considerations), to broader philosophical aspects of his practice including his approach to rehearsal techniques. Theo, for example, expressed his preference for a hands-on approach to professional development. He actively sought out this form of instruction in his master's degree program and continues to attend workshops and symposia that are interactive. Sherry indicated that observing her mentors gives her the opportunity to see how they interact and make connections with students. Simon talked about the value of watching his colleagues teach and how meaningful it is to spend time with them talking about teaching and conducting.

Discussion. The professional development Assertion from this study supports past literature that reported that music teachers value furthering their musical skills and favor

opportunities to interact, observe, and network with colleagues and mentors (Bauer, 2007; Bowles, 2002; Bush, 2007; Conkling, 2007; Conway, Albert, Hibbard, & Hourigan, 2005; Conway, 2008; Friedrichs, 2001; Johnston, 1993; Lindahl, 2010). This Assertion also supports past literature that indicates that professional development for music teachers needs to be situated in the subject matter and grounded in the context of practice (Bauer, 2007; Bowles, 2002; Bush, 2007; Conkling, 2007; Conway, Albert, Hibbard, & Hourigan, 2005; Conway, 2008; Friedrichs, 2001). Based on this Assertion from the data, it is clear that the participants in this study learn and develop knowledge and derive meaning through their learning as contributing members of a community of practice (Barrett, 2006; Stanley, 2009; Wenger, 1998, 2003, 2011).

In order to understand the complexities of instrumental teacher knowledge and the intersection between teaching and conducting, it was important to understand how key experiences have been meaningful to the participants' development. Understanding what teachers need to know and how they need to know are but two pieces of the puzzle. Understanding what types of learning experiences are meaningful to teachers' pedagogical development is an important step in structuring professional development that is meaningful and has a direct impact on practice. Although no single experience emerged as being the most relevant to the participants' professional development, identity and professional growth (past experience, role models, and professional development) were two common findings that played a significant role in the participants' development as teachers and conductors. This Assertion is consistent with the research in music education identity formation and development as it points to the multiple identities and roles music educators balance throughout the various tasks of their practice, and how

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teachers navigate the interconnected nature of their self-knowledge with the sociological aspect of knowing and responding to others within a socially constructed context (Austin, Isbell, & Russell, 2010; Bernard, 2005; Campbell, 1999; Conkling, 2003; Dolloff, 1999, 2006, 2007; Isbell, 2008; Thompson & Campbell, 2010; Woodford, 2002).

The professional development Assertion from this study supports past literature that reported that music teachers value furthering their musical skills and favor opportunities to interact, observe, and network with colleagues and mentors (Bauer, 2007; Bowles, 2002; Bush, 2007; Conkling, 2007; Conway, Albert, Hibbard, & Hourigan, 2005; Conway, 2008; Friedrichs, 2001; Johnston, 1993; Lindahl, 2010). This Assertion also supports past literature that indicates that professional development for music teachers needs to be situated in the subject matter and grounded in the context of practice (Bauer, 2007; Bowles, 2002; Bush, 2007; Conkling, 2007; Conway, Albert, Hibbard, & Hourigan, 2005; Conway, 2008; Friedrichs, 2001). Based on this Assertion from the data, it is clear that the participants in this study learn and develop knowledge and derive meaning through their learning as contributing members of a community of practice (Barrett, 2006; Conway & Eros, 2013; Stanley, 2009; Wenger, 1998, 2003, 2011). Moreover, this Assertion supports the initiatives in general education that suggest teachers' professional development initiatives must be situated and informed by practice (Barrett, 2006; Conway & Eros, 2013; Stanley, 2009; Wenger, 1998, 2003, 2011).

Response to Sub-research Question (b) – Assertion 3

Which aspects of practice do instrumental music teachers perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors?

Relational work. The cross case analysis revealed that relational work was the

only inter-case finding that was common across all cases. The prevalence of this finding

across the cases suggests that relational work is a key aspect of the participants' practice.

This emergent Assertion is consistent with the educational literature that indicates

teaching is relational work (Grossman et al., 2009; Grossman & McDonald, 2009;

Lampert, 2009, 2010; Verloop et al., 2001) and with conducting literature that highlights

the relational aspect required for conducting (Durrant, 1994; Rudolf, 1994). Lampert

(2010) stated:

> Classroom teaching is relational work: Working on learning in the classroom
> involves concerted action by at least two people, the teacher and a student.
> Although student learning can be accomplished without actions taken by teachers,
> simply by a relationship between the student and that which is to be learned, the
> work we attend to here – teaching in school – necessarily involves intellectual and
> social collaboration…Classroom teachers need to act deliberately to maintain
> productive relationships with particular individual students in ways that result in
> those students learning….Besides working with students, teachers need to work in
> relation to the particular subject matter that students are responsible for learning.
> (p. 22)

By Lampert's account, teachers' relational work is deliberate and occurs on two levels:

the relationship they maintain with students and with their subject matter. The Assertions

from this study support Lampert's findings as the participants indicated the quality of

their relationships with the students impacts their teaching and the music-making process.

The participants value their relationships with the students and strive to be empathetic

and supportive. The level of commitment they show to their students is similar to the

commitment they devote to their craft as educators, musicians, and conductors. Music

and conducting is more than the subject matter they teach, it is a part of their identity, a

hobby, and a deeply engrained aspect of their lives.

Grossman et al., (2009) contend that teaching is a "relational practice" that shares a common goal with other "professions of human improvement" (Cohen, 2005) such as clinical psychology, social work, and clergy. In all four professions, "practice depends heavily on the quality of human relationships between practitioners and their clients" (p. 2057). The participants in this study strive to create positive learning environments where students are supported and valued. Participating in a creative endeavor with other people requires trust and involves taking risks and showing vulnerability. The participants stressed the importance of showing vulnerability to the students as it encourages them to be open to taking risks, it builds trust within the ensemble, and it encourages the ensemble to experience an emotional connection with the music.

Instructional approach and conducting. Based on the analysis of the data, the participants' instructional approaches and conducting (gesture and aural image) appeared to be inextricably linked. The participants' instructional approaches were grounded in their subject matter knowledge (music and conducting) and their knowledge of students and teaching. Pedagogical approaches and considerations were guided by the participants' ability to anticipate, perceive, and respond to their students' thinking and action. The participants used their insights, knowledge and skills to formulate concepts of sound (aural image), rehearsal strategies, instruction, and assess and respond to students and sound stimulus in the moment through gesture. Their conducting knowledge and skills are a combination of their technical skills (baton technique, beat patterns), aural image (concept of sound that is informed by their musical knowledge: theory, history, performance practice, and aesthetic awareness), and kinesthetic awareness and ability (using the body to communicate intent). The participants' thinking, decision-making

processes, and actions were highly automated, and it was difficult for them to deconstruct, describe, and name the fine grain aspects of what they were thinking, how they arrived at conclusions, and how they applied their knowledge and skills in action (Ball, Thames, et al., 2008; Berliner 1986)

Based on my observations of the participants' practice and the analysis of the data, the aspects of practice that reflected the intersection between instrumental music teaching and conducting included the participants ability to: have an aural image (SCK), know the ability level of the students (SCK, KCS), anticipate, assess, diagnose, and plan strategies in the moment (CCK, SCK, KCS, and KCT). Assessing in the moment required the participants to measure what they heard against their aural image (CCK, SCK). Anticipating and diagnosing what they heard and understanding the nature of the mistake used SCK, and KCS. Formulating strategies and communicating them to students verbally and through gestures used SCK, KCS, and KCT. The nature of the participants' feedback suggests that the high-leverage practices (Grossman et al., 2009) in this study were the participants' abilities to assess and diagnose in-the-moment the following variables: tone development and production (intonation, balance, and blend), rhythm, note accuracy, meter changes, musical phrasing, and musical nuance. Each one of these variables was a subject matter question or concern that required the participants to consider the ability level of the student, the nature of the question or problem, and plan and execute a strategy in the moment. These variables occurred simultaneously and were further complicated by the transient nature of sound. The participants' ability to recall their aural image and use it as a measurement tool, while showing a non-verbal

representation of their knowledge, highlights the complex and interconnected nature of teaching and conducting instrumental music.

Discussion. A prominent and emergent finding across all cases was the relational aspect of the participants' practice. They indicated that this is a cornerstone of their practice that is integrated in every aspect of their interactions, decisions, and actions with students. This Assertion is consistent with the general education and conducting research that indicates teaching is relational work (Grossman et al., 2009; Grossman & McDonald, 2009; Lampert, 2009, 2010; Verloop et al, 2001) and that conducting requires a relational component (Durrant, 1994; Rudolf, 1994). The relational aspect of teaching music is currently an under-studied area of research music education. The participants in this study indicated that the degree to which they are able to communicate nonverbally with students and collaborate in the music making process is dependent on the relational aspect of their practice. Given that the music performance is one of the only subject areas where teachers and students interact and collaborate during formal assessments, this topic represents a ripe area for further inquiry.

The central finding suggests that the practice of instrumental music teaching demands a specialized form of knowledge that reflects the integration, rather than the intersection, of both teaching and conducting. Analyzing the aspects of the participants' practice through the lens of the MKT framework allowed me to name the specific demands and tasks associated with teaching instrumental music that reflect the intersection between teaching and conducting, and understand how skill, habits of mind, and insight factor into these aspects of practice. Tables 4a and 4b outline the specific

aspects of practice for instrumental music teaching that align with the domains of the MKT framework.

Response to Sub-research Question (c) – Assertion 4

What dilemmas of practice (Ball, 1993; Lampert, 1981, 1985) do instrumental music teachers perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors?

The participants described the dilemmas of practice that are related to instrumental music and conducting as: listening, assessing, and responding in the moment and "making it your own".

Listening, assessing, and responding in the moment. Using the four domains of knowledge (SCK, CCK, KCS, KCT) simultaneously was challenging for the participants. They indicated that their ability to listen, assess, and respond in the moment has evolved over the course of their careers and continues to be an area of development. The participants described the evolution of this process as having ranged from initially being overwhelmed by the sound to their current ability to recall, anticipate, and respond to the sound stimulus. This growth and progression has occurred over time and has become more automatized through dedicated practice (professional development). Overall, the participants indicated they continue to refine and develop this dilemma of practice by attending workshops, symposia, and observing others teach and conduct. This continued exposure helps refine their concept of sound, aesthetic interpretation, understanding of student knowledge and ability, rehearsal techniques, and expand their gestural vocabulary.

Table 4a

Aspects of Participants' Instrumental Music Teaching Practice that Align with the Mathematical Knowledge for Teaching Framework

Domains of the Mathematical Knowledge for Teaching (MKT) Framework (Ball et al., 2008)	Aspects of Practice: Instrumental Music Teaching (Teaching and Conducting Integrated)
Common Content Knowledge (CCK) Broad subject matter knowledge that is not unique to teaching and/or conducting (musical knowledge and skills that are common to music performers, theorists, historians, and educators)	• Identifying intonation, balance, blend, rhythmic issues and inconsistencies • Performing an instrument and/or sing • Reading and interpreting, musical notation • Synthesizing music history and theory knowledge to make decisions that are stylistically appropriate • Differentiating between correct and incorrect balance, blend, intonation, rhythm, stylistic execution • Kinesthetic skill: moving freely without tension • Kinesthetic knowledge: understanding how the body moves • Using appropriate baton technique: beat patterns, gestural vocabulary • Developing a detailed mental image of the music (aural image) • Formulating personal interpretation of the music • Communicating non-verbally through gesture: intent and interpretation • Listening to multiple musical lines sounding simultaneously and having the ability to distinguish correct and incorrect balance, blend, intonation, rhythm, stylistic execution • Responding to the sound stimulus in-the-moment through non-verbal communication
Specialized Content Knowledge (SCK) Knowledge that is "not typically needed for purposes other than teaching" (Ball, et. al., 2008)	• Understanding the nature of student mistakes and how they arrive at conclusions • Knowing the level of the ensemble: what sounds are appropriate/possible for age and ability levels? • Anticipating, assessing, student/sound stimulus in-the-moment • Interpreting and applying professional models of conducting • Transferring and applying these understandings to practice with amateur level students

Table 4b

Aspects of Participants' Instrumental Music Teaching Practice that Align with the Mathematical Knowledge for Teaching Framework

Domains of the Mathematical Knowledge for Teaching (MKT) Framework (Ball et al., 2008)	Aspects of Practice: Instrumental Music Teaching (Teaching and Conducting Integrated)
Knowledge of Content and Students (KCS) Knowing what students find challenging and understanding how to mediate these challenges	• Anticipating, assessing, student/sound stimulus in-the-moment and formulating strategies to support student learning • Knowing student's ability to interpret non-verbal communication (gesture) • Relational work
Knowledge of Content and Teaching (KCT) Merger of content knowledge and pedagogical issues that impact student learning	• Sequencing strategies and in-the-moment responses based on student/sound stimulus • Knowing what examples (verbal and non-verbal forms of instruction) to use to further understanding • Choosing repertoire that is age and ability level appropriate • Deconstructing the components of a piece of music • Sequencing representations of practice to foster student learning, understanding, and autonomy

"Making it your own". Teaching is complex work that appears simple, and teaching music is further complicated by the subjective nature of the art form (Ball, 2000; Clark & Lampert, 1986; Dewey, 1904/1964; Freeman, 2002; Grossman, 1990; Grossman, Hammerness, & McDonald, 2009; Shulman, 1986; Shulman, 1987). The participants discussed the challenges they face with navigating aspects of their practice. Knowing themselves as individuals (personal and professional identity) requires an understanding of how their past experience, role models, and context influence their worldview, bias,

and assumptions about teaching, learning, and the creative process. The participants'
evolution in finding their own voice and "making it their own" requires identifying the
powerful representations of practice that had a lasting impression on their development
and reimagining them in ways that are authentic and representative of their own
experiences, and reflect their knowledge of their students and context. Based on the
analysis of the data, one of the dilemmas of practice related to the intersection of
instrumental teaching and conducting is the teacher's ability to communicate verbally and
non-verbally in a way that is authentic to the individual, flexible and responsive to the
students and context, pedagogically sound, and aesthetically relevant.

      Discussion. Teachers, like other professionals such as physicians, problem-solve
and make decisions in dynamic and changing environments (Leinhardt & Greeno, 1996;
Shavelson & Stern, 1981). The fluency of these actions becomes automated through
practice, making it difficult for an observer (or researcher) to identify the cognitive
processes that guide and inform the action (Berliner 1986). The dilemmas of practice
related to the intersection of instrumental music teaching and conducting suggest that the
the participants' grapple with their ability to listen, assess, and respond to sound in the
moment. The Assertions from this study reinforce the need for continued examination in
determining how teacher education can provide opportunities for teachers across all
levels to notice, observe, and break down aspects of their practice, and offer support as
teachers develop the discrete knowledge and skills for practice (Cochran et al., 1993;
Fenstermacher, 1994; Rohwer & Henry, 2004; Shulman, 1986, 1987). In addition,
participants in this study struggled with their ability to apply powerful lessons and
experiences from mentor teachers and/or professional role models to their specific

teaching context in ways that are authentic, flexible, pedagogically sound, and aesthetically relevant.

Summary of Assertions

The central Assertion suggests that the practice of instrumental music teaching demands a specialized form of knowledge that reflects the integration, rather than the intersection, of both teaching and conducting. The data suggest a rejection of the notion of there being an intersection between teaching and conducting within instrumental music teaching practice, as the term "intersection" suggests that they are separate entities. Rather, the participants indicated that teaching and conducting are integrated and that they draw upon each of these areas simultaneously during their practice. This specialized knowledge informs the participants' in-the-moment decision-making, judgments, decisions, and communication with students and the ensemble as a whole. The participants noted that, at times, their in-the-moment decisions and responses to the students and the ensemble may require them to draw more heavily on one aspect of their knowledge rather than the other (teaching or conducting); however, the two are never completely divorced within their thinking.

Instrumental music teaching and conducting are inextricably linked. The intersection between instrumental music teaching and conducting is a specialized form of knowledge that informs the participants' day-to-day practice, decisions, judgment, and actions. This specialized knowledge is complex and deeply engrained in the participants' teaching practice (Ball, 2000; Ball & Bass, 2000; Grossman, 1990; Grossman et al., 2009; Shulman, 1986; Shulman, 1987). Such knowledge is actively created by the participants, and it is informed by their past experiences, identity, knowledge of students,

context, and worldview (Cochran et al., 1993; Fenstermacher, 1994; Shulman, 1986; Shulman, 1987). This specialized knowledge is difficult to name, unpack, and describe (Clark & Lampert, 1986; Ericsson & Simon, 1980; Fenstermacher, 1994; Taylor & Dionne, 2000; Westerman, 1991). No single experience emerged as being the most meaningful to the participants' development as teachers and conductors; however, identity (how the participant's self-identify as professionals) and professional growth (past experiences, role models, and professional development) were the two common findings that played a substantial role in each participant's pedagogical development.

Data analysis revealed two aspects of practice that the participants perceived and described as being related to the intersection between music teaching and conducting: relational work and instructional approaches. Relational work was an emergent Assertion that is consistent with educational and conducting literature that suggests teaching is a relational practice and that conducting requires a relational component (Durrant, 1994; Grossman et al., 2009; Grossman & McDonald, 2009; Lampert, 2009, 2010; Rudolf, 1994; Verloop et al., 2001). Similarly, the participants' instructional approaches and conducting (gesture and aural image) were integrated, and their pedagogical approaches and considerations were guided by their ability to anticipate, perceive, and respond to their students' thinking and action. The dilemmas of practice (Ball, 1993; Lampert, 1981, 1985) related to instrumental music teaching and conducting included the participants' ability to listen, assess, and respond to sound in the moment and their ability to apply powerful lessons and experiences from mentor teachers and/or professional role models to their teaching context in ways that are authentic, flexible, pedagogically sound, and aesthetically relevant.

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Chapter IX

CONCLUSION

Chapter Overview

The first section of this chapter will review the purpose, research questions, and methodology utilized in this study. Following this section, I will review and discuss the Assertions from Chapter VIII. Next, I will discuss implications for music teacher education and conducting education. Finally, I will offer suggestions for future research related to this study.

Review of Purpose and Research Questions

The purpose of this study was to examine the complexities of instrumental music teacher knowledge and explore how participants describe the intersections between instrumental music teaching and conducting. The key research question guiding this study was: How do high school instrumental music teachers describe the intersections between instrumental music teaching and conducting? Sub questions include (a) What key experiences do instrumental music teachers describe as being most meaningful to their development as teachers and conductors? (b) Which aspects of practice do instrumental music teachers perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors, and (c) What dilemmas of practice do instrumental music teachers perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors?

Review of Methodology

A multiple case study design (Stake, 2006) was used to investigate the experiences and perceptions of instrumental music teachers' ($N = 4$) and their knowledge for conducting a large ensemble. In order to examine and understand the complexities of teacher knowledge, I examined four participants who teach in different contexts. I explored the commonalities and uniqueness across the four cases and how each participant's context and experience influenced the phenomenon. Criterion-sampling was used to purposefully choose participants whose experiences illuminated the topic at hand. These criteria included: (a) instrumental (band) music educators who have been teaching for five or more years; (b) each participant had experience teaching a range of ability and grade levels; (c) each participant had attended one, or more of the following: graduate work in conducting, conducting symposia, conference presentations/seminar/workshops on conducting, private lessons with a professional conductor and/or conducting faculty member in higher education; and (d) the participants' educational backgrounds represented different institutions.

Data sources included: participant interviews (three per participant), 1 participant focus group, 1 observation of each of the participants conducting and teaching their high school ensembles, and 2 stimulated recall events with each participant using previously recorded conducting footage. One of the three interviews (interview two) took place in-person at each of the participants' schools. The remaining two interviews (interviews one and three) and the focus group occurred remotely using computer-mediated communication (VoIPs). The Seidman (2006) three-stage phenomenological interview

model was the interview protocol for this study. The stimulated recall event occurred during the second (in person) and third interviews (using VoIPs).

The analysis procedures used Stake's (2006) multiple case study analysis framework. The interview and focus group data were transcribed and coded using open coding. Subsequent codes and categories were emergent, based on the data. I used the Ball, Thames, et al. (2008) Mathematical Knowledge for Teaching framework to code the data that pertained to instructional approaches (planning, teacher knowledge, and decision-making). Each case was examined, analyzed, and coded individually. Following this, I proceeded with the cross-case analysis. I ranked each finding for the individual cases to signify the prevalence of the finding within each case. From there, I analyzed the rankings across the cases and ranked the findings based on their commonality and uniqueness across the four cases. Assertions were formulated based on the theme-based findings and their relationship to the Quintain (Stake, 2006). Trustworthiness was achieved through the use of multiple data sets, member checks, and reflexivity.

Review of Assertions

The data and Assertions from this study align with past research that indicated teaching is multifaceted and complex work (Ball, 2000; Clark & Lampert, 1986; Dewey, 1904/1964; Freeman, 2002; Grossman, 1990; Grossman, Hammerness, & McDonald, 2009; Shulman, 1986; Shulman, 1987). The knowledge required for teaching any subject demands that teachers have an understanding of themselves, students, content, teaching, and pedagogy. These aspects of knowledge impact how teachers interact with students, approach and engage in the tasks of teaching, and how they interpret and understand the subject matter (Ball, 2000; Clark & Lampert, 1986; Grossman, 1990; Grossman,

Hammerness, & McDonald, 2009). The participants in this study indicated that their past experiences influenced their decisions and knowledge of students; however, often the degree of this influence was not fully realized and was tacitly held. Similar to previous research (Cochran et al., 1993; Fenstermacher, 1994; Shulman, 1986, 1987), the participants had a difficult time naming and describing their knowledge because it is automatized, contextually held, and draws from multiple sources, knowledge, and skills simultaneously and in-the-moment.

Table 5 summarizes the Assertions of this study. The central Assertion suggests that the practice of instrumental music teaching demands a specialized form of knowledge that reflects the integration, rather than the intersection, of both teaching and conducting. The data suggest a rejection of the notion of there being an intersection between teaching and conducting within instrumental music teaching practice, as the term "intersection" suggests that they are separate entities. Rather, the participants indicated that teaching and conducting are integrated and that they draw upon each of these areas simultaneously during their practice. This specialized knowledge informs the participants' in-the-moment decision-making, judgments, decisions, and communication with students and the ensemble as a whole. The participants noted that, at times, their in-the-moment decisions and responses to the students and the ensemble may require them to draw more heavily on one aspect of their knowledge rather than the other (teaching or conducting); however, the two are never completely divorced within their thinking.

No single experience emerged as being the most meaningful to the participants' development as teachers and conductors. Identity and professional growth (past experiences, role models, and professional development) were the two common findings

that played a substantial role in each participants' development as teachers and conductors. Two findings emerged as being central aspects of the participants' practice related to the intersection between instrumental music teaching and conducting: relational work and instructional approaches. Relational work was the only inter-case finding that was common across all cases, and the prevalence of this finding across the cases suggests that relational work is a key aspect of the participants' practice. The participants' instructional approaches and conducting (gesture and aural image) appeared to be inextricably linked. The participants' instructional approaches were grounded in their subject matter knowledge (music and conducting) and their knowledge of students and teaching. The participants used their insights, knowledge and skills to formulate concepts of sound (aural image), develop rehearsal strategies, modify instruction, and assess and respond to students and sound stimulus in the moment through gesture. Their conducting knowledge and skills represented combination of their technical skills (baton technique, beat patterns), aural image (concept of sound that is informed by their musical knowledge: theory, history, performance practice, and aesthetic awareness), and kinesthetic awareness and ability (using the body to communicate intent). The dilemmas of practice (Ball, 1993; Lampert, 1981, 1985) related to instrumental music teaching and conducting included the participants' ability to listen, assess, and respond to sound in the moment and their ability to apply powerful lessons and experiences from mentor teachers and/or professional role models to their teaching context in ways that are authentic, flexible, pedagogically sound, and aesthetically relevant.

Table 5

Summary of Research Question, Sub-research Questions, and Assertions

Research and Sub-research Questions	Assertions
Key Research Question How do high school instrumental music teachers describe the intersections between instrumental music teaching and conducting?	1. Specialized form of knowledge: Integration of both teaching and conducting 2. This knowledge informs in-the-moment decision-making, judgments, decisions, and communication with students and the ensemble as a whole
Sub-research Question (a) What key experiences do instrumental music teachers describe as being most meaningful to their development as teachers and conductors?	1. Identity: the participants' description surrounding how they self-identify as professionals 2. Professional growth: past experiences, role models, and professional development opportunities played a substantial role in participants' development
Sub-research Question (b) Which aspects of practice do instrumental music teachers perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors	1. Relational work is a key aspect of both of these domains for participants' practice 2. Instructional approaches and conducting are integrated aspect of the participants' practice 3. Instructional approaches related to both teaching and conducting were grounded in the participants' subject matter knowledge and knowledge of students and teaching
Sub-research Question (c) What dilemmas of practice do instrumental music teachers perceive and describe as being related to the intersection between instrumental music teaching and their development as conductors?	1. Listening, assessing, and responding in the moment represented dilemmas of practice 2. The participants also found dilemmas of practice in their ability to apply powerful lessons and experiences from mentor teachers and/or professional role models to their specific teaching context

Implications for Teacher Education and Opportunities for Supporting In-Service

Teachers (Music Education and Conducting)

The systematic study of music teacher knowledge and the relationship between what and how music teachers must know for practice is a relatively new field of inquiry (Burnard, 2013; Chandler, 2012; Millican, 2008, 2013, 2014). Prior studies in music education explain that how teachers know and apply their knowledge through their representations of practice is challenging to name, unpack, address, and teach in preservice teacher education. In-service teachers also noted that they felt underprepared in this area of their practice. (Ballantyne, 2006; Ballantyne and Packer, 2004; Millican, 2008, 2013, 2014), therefore, it is important to consider the ways that our profession can better serve both preservice and in-service instrumental music teachers. Following a discussion of each of these topics, I will also discuss recommendations for conducting pedagogy.

Supporting In-Service Instrumental Music Teachers

Improving existing professional development opportunities. Future professional development for in-service teachers must mirror the professional practice of instrumental music teaching; thus, the content and approach of professional learning opportunities (graduate degree curricular, professional development including workshops, symposia, and conference sessions) must reflect the integrated nature of teaching and conducting. Creating opportunities for communication and partnerships between music education and conducting faculty are the first steps in moving towards creating professional development opportunities that mirror the integration of teaching and conducting that occur in practice.

The participants in this study noted the difficulties they faced when applying powerful lessons and experiences from mentor teachers and/or professional role model models to the specific context of their own practice. How can music teacher education and conducting education support teachers in bridging the gap between the lessons learned from professional development, and the application of these lessons and experiences to the context of practice?

One approach to this overarching question is creating opportunities for music education and conducting faculty to unite in a joint partnership where together they model representations of practice to instrumental music teachers. In addition to this, instrumental music teachers need to receive feedback from both music education and conducting faculty within professional development. Typically, during conducting workshops and symposia, conducting faculty provide feedback pertaining to gestural vocabulary and offer strategies for how to effectively communicate with the ensemble. The findings of this study suggest that additional feedback might be helpful, including how to hear with greater specificity, how to move without tension, how to respond effectively through verbal and non-verbal communication, and how to establish and develop rapport with the ensemble. In the context of the conducting symposium, perhaps music education faculty could offer suggests and insights that pertain to the developmental stages of learners, guide teachers in honoring and interpreting aspects of one's identity (experiences and biases) and applying the principles of this to one's practice, and helping teachers interpret the feedback from the conducting faculty and apply it to different contexts (including age and ability level of the ensembles and instrumentation challenges).

Other opportunities for these joint partnerships, including opportunities for modeling representations of practice and providing feedback, might include providing teachers with conducting feedback during state music festivals. This type of feedback is offered in some states and districts, but many others could benefit from this type of model. Such a model might be a way to reach a large volume of teachers during a concentrated experience, and reinforce the importance of continued development in this area of practice. For example, festival organizers might position a camera so that it is pointed at the teacher while they are conducting. A conducting faculty member can be given access to this recording in real-time and provide comments that are recorded and given to the teacher at the end of the performance.

Professional development initiatives of the future. In order to provide music educators with resources and records of representations of practice, music teacher educators and conducting educators might examine the work that has been done in English education surrounding the use of technology as a platform to house digital exhibitions of representations of practice (Hatch & Grossman, 2009). Over the past decade, the Carnegie Foundation for the Advancement of Teaching and the Carnegie Academy for the Scholarship of Teaching and Learning (CASTL) have worked to create an online repository of records of practice as part of an effort to support and stimulate the exchange of representations of teaching by experienced teachers (Hatch & Grossman, 2009). In the context of instrumental music teaching, this type of professional development might manifest in the form of teachers uploading video examples of conducting different age groups, and teaching and conducting different levels and genres of music. In order to meet the specific and unique needs of instrumental music teachers,

this type of platform might be a useful tool to house videos of pedagogues working with in-service teachers, deconstructing aspects of practice, and working different age and ability groups (middle versus high school ensembles), and making a the salient aspects of their teaching and conducting principles explicit through demonstrations. This type of online resource could also have applications and implications for preservice students as a means of providing examples of how teaching and conducting are applied in practice, the idiosyncratic nature of teaching and conducting, and considerations that must be made based on the age and ability level of the ensemble.

Although a model for this type of web-based platform exists in English education, detailed work surrounding the unique needs of music educators is required to determine how this tool could be relevant and accessible for instrumental music educators. Finding in-service teachers and faculty members who are interested and available to participate involves time and resources. A detailed examination of this type of platform is needed to understand the range of possibilities this type of resource could yield.

Communities of practice. Typically, instrumental teachers are members of a music and/or performing arts department within their schools. Despite being a member of a department, instrumental music teachers typically work in isolation, as they are the only teacher in the building who works with the band(s) (Sindberg & Lipscomb, 2005). Creating communities of practice (Wenger, 2011) is a possible way to bring instrumental music teachers together so they can communicate, share, and exchange their experiences, ideas, dilemmas of practice, and offer strategies and support to one and other (Stanly, 2009). Such communities of practice might include, but are not limited to: face-to-face group interactions, video clubs (Sherin & van Es, 2009) and public and closed member

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social media groups (such as the public Facebook group: Instrumental Music Teacher Educators). The participants in this study had a difficult time thinking meta-cognitively about their practice, deconstructing their practice, and participating in stimulated recall. Communities of practice could provide instrumental music teachers with a platform to practice watching recordings of their rehearsals, listening to their ensembles, and reflecting on the aspects of their practice that come naturally to them and those that need continued attention and development.

Implications for Instrumental Music Teacher Education

Cooperative models of instruction. To better reflect the integrated nature of teaching and conducting knowledge demonstrated in this study, instructional approaches in teacher education must be reimagined in ways that bring music teacher education and conducting education together. Certainly, separate instruction may be required for skills and aspects that are unique to each discipline. However, conducting and instrumental teacher education are typically approached as two completely separate entities in higher education, i.e., as separate coursework for preservice teacher education (standalone instrumental methods course and standalone conducting course) and professional development for in-service teachers (graduate coursework in music education and conducting symposia) even though they are merged in practice (NASM, 2012). Creating partnerships across departments, identifying the high leverage practices involved in this joint enterprise, and using common language to name and identity the components of teaching and conducting that are required for practice are necessary steps in reimagining approaches to teacher education that mirror practice.

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The limitations of time, resources, and accessibility are realistic considerations that must be factored when considering the aforementioned recommendations. Typically, music education and conducting faculty members have active teaching and research responsibilities that could impact the feasibility of these recommendations. Finding opportunities to forge new partnerships might include designated planning time during regional, state, and national conferences where music education and conducting faculty convene. The use of VoIP technology (Skype, FaceTime, Google Hangout) may also be helpful to connect faculty who may otherwise be housed in different areas on campus or across institutions. These challenges are particularly pertinent for faculty members who teach at larger institutions where the music education and conducting departments are separate entities. Conducting and music education faculty may also consider scheduling specific planning time at the beginning and end of the academic year to come together to brainstorm ideas surrounding finding common language to identity high leverage practices, make modifications to course content and jointly develop content.

Refining content areas and examining high leverage practices. In order to devise a systematic, multilevel, and multifaceted approach to address the pedagogical and practical demands of instrumental music teaching, music education and conducting faculty must work together to identify the high leverage practices for instrumental music teaching: knowledge, skill, and practices that occur with high frequency (Grossman, Hammerness, & McDonald, 2009); use consistent language to name them, understand how teachers know, learn, understand, and apply them to practice. For example, high leverage practices that may be consistent across levels of instrumental music instruction include the following: moving without tension, using gesture to effectively communicate

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musical intention (aural image), having the ability to hear, move, and respond to the ensemble in the area of balance, blend, tone, intonation, rhythmic accuracy, and modeling musical style.

In order for pre-service teachers to understand and apply such high leverage practices to their teaching, they must understand their smaller components. Grossman et. al., (2009) refer to the process of breaking down complex practice into constituent parts as "decompositions of practice." Instrumental music teacher and conducting educators must deconstruct the fine grain components related to a given high leverage practice and be explicit in describing how each practice contributes to, and/or impacts student learning. For example, developing the aural image are high leverage practices. Deconstructing these into the fine grain components, i.e., one's ability to hear each individual line, followed by the ability to hear lines in relation to the other parts (melody line with the bass line), are the necessary first steps in understanding how to name, describe, and learn concepts required for developing a mental image of the music and one's interpretation of the music. Furthermore, when teacher and conducting educators deconstruct and model representations of practice, they must explain to teachers (pre and in-service) the reasoning behind how and why they sequence each component, and the relationship between each component. In order for teachers to interpret, understand, and apply these representations to their practice, they must have a clear idea of what the high leverage practices are, how they contribute to student learning, and how to sequence them in practice. Additional questions for consideration include: What are the recurring tasks and challenges in instrumental music teaching across all levels? How do instrumental music teachers adjust and modify their understanding of high leverage practice to the age

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and ability level of the students in their ensemble? For example: how might instrumental music teachers modify their gesture for a 5th grade beginning ensembles versus a 12th grade senior ensemble? What considerations must they make and what are the principles that are consistent across these two different contexts?

Emphasizing the nature of lifelong learning. The participants in this study represent a unique cross section of experienced teachers. Each participant holds a graduate degree and has actively sought out additional opportunities to further develop their conducting (attending symposia, workshops, conference presentations, seminars, private lessons). The participants demonstrated a high level of intrinsic motivation to further their knowledge and skills. In addition, they possessed the ability to self-reflect and self-diagnose their areas of strengths and ongoing areas of improvement. In order to reinforce the importance of the specialized and integrated knowledge that is required for practice, teacher educators and conducting educators must emphasize to preservice teachers that this specialized knowledge has a direct impact on student learning and the music. Undergraduate students come to preservice education with knowledge and skills as musicians on a particular instrument and/or voice. We cannot assume that these knowledge and skills transfer directly to learning how to teach music and how to conduct. Developing the knowledge and skills required for practice is a career long process that demands teachers have the ability to reflect on their practice, and have access to a wide range of resources and professional learning opportunities. The delivery and emphasis of this message must be consistent.

Conducting Pedagogy

The individual case findings and cross case Assertions from this investigation suggest that conducting, like teaching, is complex, multifaceted, and demands the simultaneous use of specialized knowledge and skills in the moment. The participants in this study discussed the challenges associated with listening and responding in the moment, holding tension in the body, and the limitations of their gestural vocabulary. Similarly, the extant research in conducting suggests there are multiple factors involved in developing the knowledge and skills required for conducting an ensemble; however, there are discrepancies in the pedagogical approaches to conducting education, and often, conducting textbooks favor the skill development side of conducting over all other aspects (Baker, 1992; Boardman, 2000; Lindahl, 2010; Manfredo, 2008; Romines, 2003; Runnels, 1992; Silvey, 2010; Spencer, 2000).

Based on the individual findings of this study and cross-case Assertions, conducting pedagogy (the content of undergraduate coursework and conducting symposia) should also examine how the kinesthetic aspects of conducting are addressed, including developing gestural vocabulary, understanding how the body moves, and how to move without tension (Haithcock, 2008). The participants in this study reported that these were dilemmas of practice that they have struggled with from their early years as teachers. Their habits of holding tension have become engrained and are difficult to rectify. Given that the body is the medium through which instrumental music teachers communicate to the large ensemble, it is essential to examine how this aspect of conducting is taught, learned, and understood by instrumental music teachers of all levels.

Suggestions for Future Research

Although the experiences and perceptions of the participants in this study are informative, their individual and collective perceptions do not represent the experiences of all in-service instrumental music teachers. Continued research is necessary to further this investigation and should include various forms of inquiry including: quantitative, qualitative, and mixed methods investigations. Topics for further examination in each of these methodological domains may include the following: instrumental teacher thought, action, instructional strategies, conducting, and curricular design and implementation. These are but some of the ways to extend the work on teacher knowledge in music teacher education.

The participants in this study were chosen using criterion sampling: experienced teachers who had pursued graduate degrees, additional instruction in conducting, and who had experience teaching a range of age and ability levels. Future research is needed to examine the perceptions and experiences of teachers who have not pursued additional work in conducting. How do these teachers perceive the integrated nature of instrumental music teaching and conducting? What dilemmas of practice do they perceive and describe related to specialized knowledge required for practice and their work on the podium? Are there similarities and/or differences in how these two populations perceive the aspects and dilemmas of practice that are related to instrumental music teaching and conducting? What are the similarities and/or differences in how instrumental and choral music educators perceive and describe the aspects and dilemmas of practice? Are there consistencies across the sub-specialties of music teaching and, if so, what impact does that have on wind and choral conducting education, and music teacher education?

Instrumental music teacher knowledge represents a rich and complex topic for inquiry. It is hoped that the experiences and perceptions of the participants in this study will add to the body of literature surrounding music teacher knowledge and education. Ball distinguishes the difference between knowing how to do a subject versus knowing in ways that enables its use in practice (Ball, 2000). Developing a deeper research base of teacher knowledge within music education is a necessary and important step forward so teachers of all levels have a strong understanding of content knowledge, specialized content knowledge, and knowledge of students and teaching, so they can apply their pedagogical understanding and musical knowledge creatively and flexibly in their teaching practice. Subject-specific investigations must be rooted in the practice of music teaching and learning so that the voices, experiences, and perceptions of teachers are captured while they are engaged and applying their knowledge in practice. This may involve, but is not limited to, examining their decision-making, reasoning, judgment, noticing, and action.

Questions for further investigations in music teacher education might include: What are the overarching and constant principles that are found in both instrumental music teaching and conducting? How can the overarching and constant principles be learned across the disciplines? How do they inform each other? How might preservice education and professional development support teachers in their development of teaching and conducting knowledge so they can use it flexibly and creatively in practice? What types of instructional activities will enable teachers to better communicate, respond, and relate to students in the moment while responding to their concept of the aural image? Can professional education and development help teachers develop greater

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fluency in the process of hearing, moving, and responding to sound stimuli? (Haithcock, 2008) How can music teacher education and professional development provide opportunities for teachers of all levels to see the interconnected nature of their teacher, musician, and conducting knowledge and skills, and transfer these understandings to their practice (Ballantyne, 2006; Ballantyne and Packer, 2004; Bauer & Berg, 2001; Burnard, 2013; Chandler, 2012; Gohlke, 1994)?

Self-identity and relational work were emergent findings that were predominant across the four cases. Further investigations are needed to understand the role and impact these areas have on teachers' judgment, approach to instruction, and interaction with students in practice. These investigations need to be grounded in teachers' day-to-day preparation and work with students in formal and informal music-making settings. How do teachers' professional role and identity their impact approach to music, teaching, and conducting? How does the relational aspect of teaching and learning inform and impact teachers' approach to their practice, students, and the collaborative nature of music making in a large ensemble context? How does the relational aspect of teaching and learning impact students' understanding and development through the music making process?

Further research is needed to uncover if the challenges and dilemmas of practice cited by the participants are unique to experienced teachers or if they hold for teachers of all levels. A balanced approach to conducting education and pedagogy is needed to ensure that teachers at all stages are prepared and confident in their ability to hear, listen, move, and respond (Haithcock, 2008). Moreover, conducting education and pedagogy must provide teachers with the necessary tools so they can apply the skills, knowledge,

and aesthetic aspects of conducting to their teaching. This extends to supporting teachers in their ability to interpret and study scores, and develop an aural image such that it can be communicated effectively to students.

Finally, it is necessary to continue the investigation surrounding how conducting and instrumental music teacher education are linked. What are the connections that can be made between the two subject areas? How can teacher knowledge and skills research in music education inform conducting education pedagogy, and vice versa? How might the conducting symposium model of professional development be enhanced by the knowledge about how teachers learn, and how they apply their lessons to practice? Conversely, what can music teacher education glean from what and how teachers learn in conducting symposia, and why they choose to participate in this form of professional development? Furthermore, how can these forms of investigation inform preservice instruction in instrumental methods and conducting courses?

Conclusion

In order to understand the complexities of teaching music and music teacher knowledge, we must acknowledge and understand that the demands of teaching instrumental music require specialized knowledge that encompasses an integration of teaching and conducting. This specialized knowledge is merged in practice, yet is often approached through dichotomies in formal music teacher education. Music educators use this specialized knowledge in their day-to-day practice in a context that is unpredictable, requires responding and relating to students, and responding to a transient and intangible stimuli. Many aspects of this knowledge are unique to each individual, as they are influenced by personal context, philosophical values, and the psychology and sociology

of teaching and learning. Despite the unique experiences, perspectives, and influences that each teacher brings to their practice, there are likely salient and overarching principles that remain constant across the practice of instrumental music teaching. In order to deconstruct and understand music teacher knowledge, music teacher educators must know, name, and understand these principles in music teacher knowledge. This can be achieved through systematic and multifaceted investigations that capture the voices and experiences of teachers, seek to understand the nature of music teachers' knowing and how knowledge for teaching music and conducting are merged and used in practice.

A rich tradition exists of research and curricular work surrounding music teaching, music teacher education, and conducting pedagogy; however, overall, research in understanding music teacher knowledge, pedagogical practice, and instruction in music teacher and conducting education has been limited in music education (Chandler, 2012; Millican, 2008, 2013, 2014). In order to move forward, research in music teacher education and conducting education should examine these aspects of teacher knowledge so we can develop a shared professional curriculum that is centered in music, grounded in practice, focused on teaching practice, and supportive of the development of teachers' knowledge. This research agenda should focus on the components of *how* music educators connect and interact with students; *how* music educators develop and apply knowledge to practice; and *how* music educators listen, hear, move, and respond to students music making in-the-moment. Understanding how music educators know and approach the various components of practice is a critical perspective that is needed to support teachers of all levels.

Music teaching and learning is unique, as it engages teachers and students in a collaborative, aesthetic, and creative endeavor that is intangible, contextually bound, and informed by the experiences and emotions of those engaged in the process. The practice of communicating nonverbally through gesture, responding to sound, and responding to students, while creating art is a complex process that is difficult to describe, and even more difficult to learn and teach. This powerful and meaningful practice requires greater attention in the field of music teacher and conducting education, as it has implications for how future generations of teachers will know, understand, and engage in teaching practice, approach and resolve dilemmas of practice, and interact with students to create compelling musical experiences that have a lasting impact.

Appendix A

EMAIL REQUESTING PARTICIPANT NOMINATIONS

Dear Faculty Member,

The purpose of this investigation is to better understand how instrumental music teachers develop knowledge for conducting a large ensemble and explore how they apply this knowledge to their teaching practice. In order to determine how teachers develop knowledge, I am seeking in-service teachers who have made a concerted effort to further their knowledge of instrumental conducting. The criteria I am using to select participants for this study include:

- Instrumental (band) music educators who have been teaching for 5 or more years
- The individual must have experience (current or past) teaching a range of grade and ability levels (i.e., advanced, intermediate players, and/or beginners)
- The individual has attended and/or participated in one or more of the following: graduate work in conducting, conducting symposia (one day or multiple day symposia), conference presentations/seminar/workshops on conducting, private lessons with a professional conductor and/or conducting faculty member in higher education

Using your knowledge of instrumental music teachers in the state of Michigan, please nominate 1-3 individuals whom you think match the aforementioned criteria and whom would be a strong candidate for this study.

Thank you for your support and assistance with this project.

Sincerely,

Sommer H. Forrester
PhD Candidate – The University of Michigan

Appendix B

COMPUTER-MEDIATED COMMUNICATION SURVEY AND CONSENT FORM

Dear Participant,

I have elected to use computer-mediated communication (CMCs) tools as a means to collect data for this investigation. CMC may include: email, blogs, instant messaging, or Voice over Internet Protocols (VoIPs) such as Skype and Google Hangout. In order to avoid technical difficulties, it is necessary to determine your access to a computer and your familiarity with these programs. Please complete a short survey (Part 1) to indicate your access and familiarity with technology. Finally, given the nature of this communication, confidentiality is imperative. Please read, sign, and date the consent form at the end of this survey (Part 2).

Part 1: Survey
1. Do you own or have access to the following devices?

____ Desktop or laptop computer
____ Tablet
____ Smart phone
____ Video camera

2. Do you have an email address you check regularly? If so, please list your primary email address below:

____ Yes
____ No

Primary Email address (please print)

_____

3. Please indicate your comfort and competency level with the following VoIPS

Skype
Not comfortable/competent	Comfortable/Competent	Extremely Comfortable/Competent
1 2 3 4	5 6 7	8 9 10

Google Hangout
Not comfortable/competent	Comfortable/Competent	Extremely Comfortable/Competent
1 2 3 4	5 6 7	8 9 10

Uploading a video to YouTube

Not comfortable/competent   Comfortable/Competent   Extremely Comfortable/Competent
1   2   3   4   5   6   7   8   9   10

Part 2: Consent:

You are being asked to participate in a study that will use computer-mediated communication. As a participant in this study, you agree to the following terms:

- Unauthorized persons will be not present in the room when you are participating in CMC and VoIPs
- Recording devices such as: voice and audio recorders will not be used during CMC and VoIPs

_____   _____

Participant's Name (Printed) and Signature   Date

Appendix C

INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

To: SOMMER FORRESTER

From:

There are no items to display

Cc:

Kate	Fitzpatrick
SOMMER	FORRESTER

Subject: Notice of Exemption for [HUM00092345]

SUBMISSION INFORMATION:
Title:

Study eResearch ID: HUM00092345
Date of this Notification from IRB: 9/10/2014
Date of IRB Exempt Determination: 9/10/2014
UM Federalwide Assurance: FWA00004969 (For the current FWA expiration date, please visit the UM HRPP Webpage)
OHRP IRB Registration Number(s):

IRB EXEMPTION STATUS:
The IRB HSBS has reviewed the study referenced above and determined that, as currently described, it is exempt from ongoing IRB review, per the following federal exemption category:

EXEMPTION #2a:
Minimal risk research that involves a non-invasive intervention followed by data collection via survey, interview (including focus groups), or observation unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation. **The research is not federally sponsored or intended to collect pilot data to support proposals for federal funding.**

Note that the study is considered exempt as long as any changes to the use of human subjects (including their data) remain within the scope of the exemption category above. Any proposed changes that may exceed the scope of this category, or the approval conditions of any other non-IRB reviewing committees, must be submitted as an amendment through eResearch.

Although an exemption determination eliminates the need for ongoing IRB review and approval, you still have an obligation to understand and abide by generally accepted principles of responsible and ethical conduct of research. Examples of these principles can be found in the Belmont Report as well as in guidance from professional societies and scientific organizations.

SUBMITTING AMENDMENTS VIA eRESEARCH:
You can access the online forms for amendments in the eResearch workspace for this exempt study, referenced above.

ACCESSING EXEMPT STUDIES IN eRESEARCH:
Click the "Exempt and Not Regulated" tab in your eResearch home workspace to access this exempt study.

Thad Polk
Chair, IRB HSBS

Appendix D

INTERVIEW ONE – SAMPLE QUESTIONS

Teaching Context

1. How many years have you been in your current teaching position?
2. What other teaching positions (if any) have you held in the past?
3. Describe the school setting where you currently teach (i.e., rural, suburban, urban, school size).
4. Describe the ensemble(s) you conduct (i.e., ability level, routines, number of concerts per year) and the culture of the ensemble(s).
5. Describe your teaching philosophy.

Educational background

1. Which university (universities) have you attended and which degrees do you hold?
2. When were your first introduced to conducting?
3. Can you recall and describe how initially learned how to conduct?
4. What additional course and or symposia have you attended to further develop your conducting skills?
5. Why did you choose to pursue these additional courses and when did you first attend them (stage in your teaching career)?
6. What do you hope to gain by attending these types of courses and/or symposia?
7. How would you describe your role as a teacher and conductor?

Appendix E

INTERVIEW TWO – SAMPLE QUESTIONS

1. Pretend I am not a fellow music educator - reconstruct the decisions you made in order to prepare for today's rehearsal.
2. Which experiences as a conductor and/or teacher have prepared you to make those decisions?
3. Think about what you do on the podium every day and finish this sentence…. "What would have prepared you better for this…"
4. Reconstruct an example from the additional work you have done in music education and/or conducting that you think back to frequently and/or tell others about.
5. Thinking back to your education and/or the additional work you have done in music education and/or conducting, is there anything that you thought was helpful but now that you are in practice has not been at the forefront of what you do?
6. If you could seek out professional development or other educational development opportunities right now, what would help you the most as a teacher and/or conductor?
7. What things do you grapple/struggle with your top ensemble versus your youngest ensemble? Do you adjust your gesture, rehearsal strategy? If so, how and why?

Stimulated Recall

1. When you are on the podium [cite example] – what led you to stop at this point [cite example]? What did you hear [cite example]? What were trying to get across [cite example]?

Appendix F

INTERVIEW THREE – SAMPLE QUESTIONS

1. Given what you have said about wanting to honor the music, the composer's voice, and fostering a meaningful experience for students – how has your approach/process to your teaching and conducting evolved over the course of your career?

2. How have your experiences as a teacher of [insert number of years] impacted this growth?

   a. How have your experiences with additional work in conducting and music education (summer masters, conferences – MMC, Midwest) impacted this growth?

3. Take me back to your first year – zoom ahead to fifth year – what did you think about as a teacher, as a conductor?
   a. How did you change
   b. What do you wish you would have known
   c. How do you define what you do in the classroom (teacher, conductor, band director) – has this definition changed over the course of your career, if so, why?

4. If you could have unlimited budget for – PD and/or additional instruction
   a. Based on what you know about yourself – based on your teaching context
   b. What do you want to learn?
   c. *How* do you want to learn?

Stimulated Recall Questions

1. How do you know when to use the tools: body, face, torso
   o Is this instinctive, planned, learned
2. What is the balance between knowing what the music demands and what the students need
3. How does your conducting gesture support student learning?
4. Now that you have been through this process (participating in the study) – is there anything that you realize, and/or has come to light about your teaching and conducting as you watch yourself on tape?

Appendix G

FOCUS GROUP INTERVIEW – SAMPLE QUESTIONS

Pedagogical Practice and Decision Making on the Podium

1. I'm interested in getting into your heads a bit to better understand the kinds of thinking that you do each day on and off the podium. Conducting an ensemble involves making a lot of decisions on and off of the podium. Some decisions are made in the moment, and some are made before/after the rehearsal. For example, as a conductor, I may have to adjust my gesture or pattern within the rehearsal to better emphasize a certain aspect of the music, or to help my students really understand a particular rhythm. As a teacher, I may have to make changes in programming for festival when a piece just doesn't seem to meet my pedagogical goals for the ensemble. We make lots of different choices as conductors and teachers. **I am interested in hearing you describe some of the typical, daily decisions you have to make as both conductors and teachers on and off of the podium.**

2. What experiences have been most profound and which have been least helpful in learning how to conduct and teach instrumental music?

3. Does your teaching inform your conducting or vice versa?

Dilemmas of Practice

1. What things do you grapple/struggle with in your teaching and conducting?

2. All of you have taught different grade levels and types of ensembles, did you/do you grapple/struggle with different things based on context?

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