May 2014

Beyond the Skilled Application of Know-How: Pedagogical Reasoning as Phronesis in Highly Competent Teachers

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Beyond the Skilled Application of Know-How:

Pedagogical Reasoning as Phronesis in Highly Competent Teachers

By

Kathryn M. Boney

A dissertation in partial fulfillment
Of the requirements for the degree of
Doctor of Philosophy
Department of Secondary Education
College of Education
University of South Florida

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Keywords: teacher knowledge, teacher learning, pedagogical reasoning, phronesis, practical wisdom

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Dedication

I dedicate this dissertation work first and foremost, to “Melissa,” “Diane,” and “Fran,” whose beautiful experiences and illuminating words within this text are masterpieces in their own right. Thank you for opening your teacher minds and teacher hearts to me and for so generously and vulnerably sharing your wisdom. You are true exemplars of expertise, and your voices are priceless gifts to our profession.

I also dedicate this work the incredible people who are called to the teaching profession, those who are courageous enough attempt it, those who stick with it, and those who strive year after year to be better, reach deeper, and give more. I continue to be humbled by the work of teachers who represent just how much intelligence, character, tenacity, devotion, resilience, love, hope, passion, courage and generosity of spirit that expert teaching requires.

I dedicate this work to all of those people who taught me, the precious people whom I was honored to teach, and especially those students who taught me more about teaching, about how to love, and about how to give than anything I ever learned in teacher school.
Acknowledgments

First, I thank my husband, James, for his unwavering and diligent encouragement, patience, faith, and partnership. You always know how to listen to me in a way that makes me feel heard, even when you don’t completely understand what it is I’m trying to say. You have always invested in my work by making it as much a priority in our shared life as your own, and at times, even more than your own. Ours is the most synergetic collaboration I’ve ever experienced. Your love and tender friendship has sustained me through this journey more than you know.

To my mother and father, there are no words to adequately express how much you have influenced my becoming. From the time I was a little girl, you insisted that there was nothing that I couldn’t do. In spite of that confident assertion that set quite a high bar, you have always marveled at my accomplishments in such a way that kept me striving to give you reasons to be proud. It is you who instilled in me the radical doses of confidence and humility that have kept me striving to be better than I am. Dad, you once told me that even though I didn't believe it, you knew that everything I ever wanted to be, become, have, know, and accomplish was just over the next hill. You told me that you didn't know what it was going to take for me to get to that valley, but you knew I would, even if I had to plow right through it. I didn't believe it then. I couldn't. But I could believe in you, my father - and that belief was the fuel that kept me on this journey. Thank you for the roadmap.
I extend my most heartfelt thanks to my chair and mentor, Pat. It was your kind and gentle face that greeted me when I first came to USF to inquire about a masters program, and it has been your kind and gentle presence that has encouraged me to grow and invited me to believe that I had something of value to give to our profession ever since. At every stage in my journey, you have empowered me to be the kind of professional I only dreamed of being. Thank you for believing in me in ways that helped me believe in myself, to see myself as more than “just a teacher,” but as a scholar of my own practice. Your confidence in me has often been the key ingredient in my ability to see myself as capable of doing and being things I would have never imagined otherwise. I have always aspired to be like you and reflect my teacher’s heart.

To my incredible committee members, Jane, Joan, Kathy, and Patty, thank you for inspiring me by your wisdom and scholarship and for being remarkable role models. Each of you has encouraged and challenged me to continue to cultivate myself as a thinker and researcher. I thank you giving me space to explore obscure ideas and trusting me to arrive at clarity.

Finally, to my doctoral sisters and brothers: Christi, Holly, Georgina, Tara, Nina, Laura, Mike, Robert, and Maggie - you have shaped my thinking through our many conversations, research endeavors, collaborations, and shared passions, and I thank you for your generosity of spirit. I look forward to our collaborations in the future.
Table of Contents

List of Tables ........................................................................................................................................ vi

List of Figures ...................................................................................................................................... vii

Abstract ............................................................................................................................................. viii

Chapter One ....................................................................................................................................... 1

Introduction to Study ............................................................................................................................. 1

An Evolution of Teacher Knowledge: A Reflection ............................................................................... 1

Conflicting views of teacher practice knowledge: an illustration ...................................................... 5

What constitutes the Knowledge Required to Teach? ........................................................................ 9

Evidence-based practices .................................................................................................................... 11

Effects of scripted curricula. ............................................................................................................... 13

A Reconception of Teacher Knowledge as Phronesis ........................................................................ 14

The Problem ....................................................................................................................................... 16

Purpose of the Study ............................................................................................................................ 17

Overview of the Conceptual Framework ............................................................................................. 17

Exploratory Questions .......................................................................................................................... 20

Significance of the Study ..................................................................................................................... 21

Definition of Terms .............................................................................................................................. 21

Highly competent teacher .................................................................................................................... 21

Pedagogical reasoning ........................................................................................................................ 21

Professional phronesis ....................................................................................................................... 22

Tacit knowledge .................................................................................................................................. 22

Overview of the Methodology ............................................................................................................ 22

Assumptions ........................................................................................................................................ 33

Limitations .......................................................................................................................................... 34

Chapter Summary ................................................................................................................................. 35

Chapter Two ........................................................................................................................................ 38

Review of the Literature ....................................................................................................................... 38

Overview and Historical background .................................................................................................. 39

Aristotle’s Phronesis .............................................................................................................................. 42

Episteme, Teche, and Phronesis ........................................................................................................... 42

Contemporary Interpretations of Phronesis ......................................................................................... 43

The Practically Wise Agent .................................................................................................................. 44

Phronesis as both Intellectual and Moral-Emotional ........................................................................ 44
Pedagogical reasoning as deliberate decision-making (Subtheme 1) .................. 109
Pedagogical reasoning as spontaneous decision-making (Subtheme 2) ............. 114
Pedagogical Reasoning is Oriented Towards Achieving multiple Goals at Once
(Superordinate Theme 3) ........................................................................................................ 120
Pedagogical reasoning is oriented towards goals for students beyond the acquisition of
discipline-specific knowledge (Subtheme 1) ................................................................. 121
Pedagogical reasoning is oriented towards goals for self in terms of one’s role in
student learning (Subtheme 2). ...................................................................................... 127
Pedagogical reasoning is related to individual personal and professional identity
(Subtheme 3) ..................................................................................................................... 135
Pedagogical reasoning is oriented towards developing relationships with students in
order to understand specific learner characteristics and needs of earn student trust
(Subtheme 4) .................................................................................................................. 143
Pedagogical Reasoning as Professional Phronesis .................................................. 150
Melissa’s Pedagogical Reasoning as Phronesis: “I don’t Want to Fail Them
in Some Way” .................................................................................................................... 155
Pedagogical Reasoning as Professional Phronesis in Melissa’s Story ...................... 161
Feature #1: Professional phronesis depends on aspects of the individual
practitioner, including one’s history and experience and one’s disposition .... 161
Feature #2: Professional phronesis implies reflection and requires interpretive
judgment by weighing generalities and particulars in concrete situations. ..... 162
Feature #3. Professional phronesis requires morally committed action............ 162
Feature #4. Professional phronesis recognizes the problematic nature of practice:
Uncertainties, complexity, aporias .............................................................................. 163
Feature #5. Professional phronesis is dialogic and relational ......................... 163
Feature #6. Professional phronesis may be circumscribed by mechanisms of
professionalism that prescribe certain actions ......................................................... 164
Diane’s Pedagogical Reasoning as Phronesis: “I Wish I’d Figured That Out Nine
Years Ago.” ....................................................................................................................... 165
Pedagogical Reasoning as Professional Phronesis in Diane’s Story ....................... 177
Feature #1: Professional phronesis depends on aspects of the individual
practitioner, including one’s history and experience and one’s disposition .... 178
Feature #2: Professional phronesis implies reflection and requires interpretive
judgment by weighing generalities and particulars in concrete situations. ..... 178
Feature #3. Professional phronesis requires morally committed action............ 179
Feature #4. Professional phronesis recognizes the problematic nature of practice:
Uncertainties, complexity, aporias .............................................................................. 179
Feature #5. Professional phronesis is dialogic and relational ......................... 180
Feature #6. Professional phronesis may be circumscribed by mechanisms of
professionalism that prescribe certain actions ......................................................... 180
Fran’s Pedagogical Reasoning as Phronesis: “My Flow is Off” ....................... 182
Pedagogical reasoning as Professional Phronesis in Fran’s Story ...................... 196
Feature #1: Professional phronesis depends on aspects of the individual
practitioner, including one’s history and experience and one’s disposition .... 197
Feature #2: Professional phronesis implies reflection and requires interpretive
... judgment by weighing generalities and particulars in concrete situations. ...... 197
Feature #3. Professional phronesis requires morally committed action ............... 197
Feature #4. Professional phronesis recognizes the problematic nature of practice:
uncertainties, complexity, aporias ........................................................................ 197
Feature #5: Professional phronesis is dialogic and relational ............................. 198
Feature #6. Professional phronesis may be circumscribed by mechanisms of
professionalism that prescribe certain actions ................................................. 198

Conclusion ........................................................................................................... 199

Chapter Five ........................................................................................................ 202
Discussion ............................................................................................................ 202

Research Question #1: How Do Highly Competent Teachers Perceive and Describe Their
Experience of Pedagogical Reasoning ............................................................... 203
Pedagogical reasoning develops over time through experiences
(Superordinate theme 1) .................................................................................. 203
Formal professional development ...................................................................... 203
Informal professional learning as problem solving ............................................ 205
Development of pedagogical reasoning over time through experiences and
phronesis ............................................................................................................ 207
Pedagogical reasoning is constant and operates in two distinct modes:
Deliberate and spontaneous (Superordinate Theme 2) .................................... 208
Deliberate mode of pedagogical reasoning ......................................................... 208
Spontaneous mode of pedagogical reasoning .................................................... 210
Exploratory mode versus spontaneous mode .................................................... 212
Deliberate and spontaneous modes of pedagogical reasoning and phronesis ... 213
Pedagogical reasoning is oriented towards achieving multiple goals at once
(Superordinate theme 3) .................................................................................. 213
Pedagogical reasoning as goal setting ............................................................... 215
Personal and professional identity and goal setting in pedagogical reasoning.. 216
Pedagogical reasoning as goal setting and phronesis ........................................ 216
Goal setting in pedagogical reasoning as professional autonomy ...................... 217
Goal setting in pedagogical reasoning and phronesis ........................................ 219
Summary of the discussion for research question #1 ....................................... 220

Research Question #2: In What Ways Can the Knowledge That Highly Competent Teachers
Employ in Pedagogical Reasoning Be Described in Terms of Phronesis? .......... 222
Pedagogical reasoning as professional phronesis ........................................... 222
Phronesis in the development of pedagogical reasoning as explained by the Race
(2006) model of competency ............................................................................ 223
The Race (2006) model of competency ............................................................. 224

Significance of the Study ................................................................................... 227

Recommendations for Future Research ............................................................ 230
Research to develop the construct of phronesis in highly competent teachers ..... 230
Research of phronesis in various contexts and levels of teacher competence ...... 230
Research on the relationship between phronesis and mechanisms
of accountability ............................................................................................... 231

Recommendations for Practice ........................................................................ 231
List of Tables

Table 1. Exploratory Question 1 (Central Question) and Study Design ........................................82
Table 2. Exploratory Question 2 (Secondary Question and Study Design) .................................82
Table 3. Superordinate themes and subthemes of highly qualified teachers’ experience of pedagogical reasoning ...................................................................................................................... 101
List of Figures

Figure 1. Distinctions among Aristotle's types of knowledge.................................................. 43
Figure 2. Three models of teacher knowledge ........................................................................... 60
Figure 3. Six stages of IPA......................................................................................................... 94
Figure 4. Alignment of pedagogical reasoning and professional phronesis .............................. 150
Figure 5. Race’s (2006) Model of Competency ...................................................................... 225
Abstract

Given the teacher-as-technician view and the instrumentalist values that pervade professional schools, practices, and policy decisions (Kinsella & Pitman, 2012a; Zeichner, 2012) with regard to teacher qualification, evidence-based practices, and scripted curricula, there is growing concern that something of fundamental importance and moral significance is missing from the vision of what it means to be a professional, particularly in the field of education. In order to articulate teacher practical knowledge in a way that reflects the complexities of practice, a framework that captures the complexity of teaching practice and helps to define the type of knowledge beyond content and technique, which enables teachers to make practically wise decisions is needed. The purpose of this study was to explore and describe the practical reasoning of highly competent teachers as it is revealed through meaning making about their experiences of pedagogical reasoning. The aim of this study was to provide an interpretive description of teacher pedagogical reasoning, then utilize the construct of professional phronesis as a framework for understanding the dimension of teacher knowledge involved in judgment (Coulter & Wiens, 2002; Kinsella, 2012).

In order to develop a detailed, multi-perspectival account of the constructs of pedagogical reasoning and professional phronesis, I employed an interpretive phenomenological case study design (Smith et al. 2009) to examine the experiences of three participants. Analysis of the data revealed the pedagogical reasoning of the participants as a knowledge that continuously develops over time through a corpus of instructional experiences including: purposeful professional
development, problem solving and reflection. The pedagogical reasoning of the participants was also found to operate as an instructional decision-making process that occurs in two modes: in deliberate planning and preparation for instruction, and spontaneously as they engage in instruction. Finally, the pedagogical reasoning of the participants was characterized by an orientation towards achieving multiple goals at once. All participants acknowledged the content of her discipline as an established goal; however, they described their decision-making in terms of goals for both themselves as practitioners regarding their role in student learning, as well as goals for student outcomes that extended beyond the development of student content knowledge. Professional/personal and instructional goals are tied to the identities of the individual participants and reflect how the unique dispositions of the participants influences the factors they consider in making instructional decisions, regardless of operational mode. Finally, all participants discussed a personal paradigmatic shift in focus from an early-career focus on content delivery to a focus on the needs of individual students and the necessity of developing relationships with students in order to achieve their personal/professional goals and goals for student growth. These themes regarding the experience of pedagogical reasoning reflected the six features of professional phronesis outlined by Kinsella and Pitman (2012b), which suggests that phronesis is a viable construct within the practice knowledge of highly competent teachers.
Chapter One

Introduction to the Study

An Evolution of Teacher Knowledge: A Reflection

I have spent the last dozen or so years contemplating teacher knowledge through my own experience as a professional educator. Of those twelve years, I spent 10 as a high school English teacher, five as a doctoral student and instructor, and a year and a half as a university field experience coordinator and instructor in secondary education; what's more, for several years at different points my roles overlapped allowing me to be a practicing teacher, doctoral student, and teacher education instructor all at once. After all those years developing my own and others’ teacher knowledge, I am still learning what it means to be a teacher. I am reminded of this each day in my work as a university field experience coordinator alongside student teaching interns, their cooperating teachers, and the university supervisors assigned to them, each of whom have distinct roles in the learning-to-teach enterprise, and each of whom represent different stages and perspectives of teacher knowledge. In my role as the coordinator of final internships, I have the unique opportunity to engage in conversations about teaching practice with these members of the internship triad, both individually, and occasionally as a fourth member of the group.

These group conversations are often most thrilling, because as I participate in them, I find myself able to engage my previous experiences in each of the triad roles all at once. In that engagement, all of my former teacher-selves reemerge; and in those moments, I am acutely aware of the evolution of my teacher knowledge. I have been a student teacher, a practicing
teacher, a cooperating teacher, and a university supervisor. In each case, my focus has been working to develop practical knowledge, both that of my own and of others; however, at each stage, the purpose for reflecting on practice has been oriented in a different direction. Not only do I relate to the individual perspectives in the enterprise of learning to teach, I also relate to the individual views of teacher knowledge held by different members of the triad as they are revealed in our conversations. I have a front row seat to student teachers’ learning processes as they put all the pieces of their program together within the context of the messy, unpredictable, living classroom. I am witness to the relationships they form with their cooperating teachers and university supervisors as they work together to find ways of communicating about teaching practice. As I collaborate with the triad members for the purpose of developing the student teacher, I inevitably reflect on my own experience of becoming a teacher – a process that is still ongoing.

I have learned about teacher knowledge experientially by living it from multiple perspectives. Like most of my final student teaching interns, I became a teacher by means of a traditional four-year undergraduate teacher preparation program. Like them, I had some early field experiences, but my internship served to disrupt my way of knowing about teaching and learning to that point. I had always been a good student, and I was good at being a student. Upon reaching my final internship, I was armed with my university coursework in my content area, methods of teaching, foundations of education, and developmental psychology; but when it came time to take on the full weight of full-time teaching, something was missing from my tool kit. Like many of my students, I believed I was as prepared as I could be to enter a classroom to teach, but I also sensed that there was more to teaching than the content knowledge that I had acquired and the strategies I had studied. That uncertainty was frightening. As I often witness in
the relationships between interns and cooperating teachers, I likely sabotaged better learning from my cooperating teacher by not really knowing what to ask and being afraid of exposing what I didn’t know.

My first two years teaching my own students, I struggled to balance the complexities of teaching. I was overwhelmed by the multitude of things I had to consider as I prepared lessons for my students. Some students were like I remembered myself to have been as a student, but most of them were not. Through gaffs and utter failures, I began to learn about the differences in the way students learned the same content. I began to see my role shift from one who presented content to eager learners to one who must first understand the needs of individual students in order to determine the best means to help them learn the course material. I was determined not to fail, so I continued to try new strategies and techniques to find better and better methods of maximizing my effectiveness in facilitating student learning. In year three, I decided to go back to graduate school to deepen my knowledge of practice, and it was during that masters program that my confidence began to grow. Through my coursework, I found ideas for solving problems that I had already identified. I also gained insight into other problems that I had yet to notice. Over time, through much trial and error, and with the occasion to reflect on my practice and gain new insights and ideas, I became self-assured in my ability to not only be aware of problems I encountered but to be able to find solutions to those problems that would result in better student learning outcomes.

Nine years later, I felt able and ready to work with a student intern in my classroom. I had high hopes of being able to inspire in a novice teacher the kind of confidence I now had as a more experienced one. I prepared a desk in my room for her before her arrival. I intentionally planned for a gradual release towards independent teaching so that she would have ample time to
observe, co-teach, and eventually take on all responsibilities of planning and executing her own
lessons. I knew she would face challenges, and I was prepared to support her through those. I
would counsel her without dictating her choices. I would offer her options, help her think
through her decisions, and she would benefit from my wisdom. I was excited to share what I’d
learned over my years of practice, and I hoped that it would be a gift to her. I was surprised and
disappointed when, instead of being able to pour out my wisdom, I struggled to talk about how I
knew the things I knew about teaching practice. I could tell her what I’d do in a particular
situation, but I struggled to explain why and how I knew it. While I’m sure I was helpful to her, I
remember feeling like the fullness of my knowledge was trapped inside my head. I lacked a
means of communicating the aspects of teaching that went beyond how to create a lesson, and
what to do when students speak out of turn. I felt a desire to connect all of the dots for her – to
explain that in a particular situation, I might choose to do one thing, but based on a multitude of
variables, I might choose several other actions in any number of other situations. I found myself
saying to her often, “Well, it depends.” I also found myself deflated by my inability to clarify
and demystify teaching for her.

Later, as a university supervisor, I learned that my relationship with the cooperating
teachers required my sensitivity to their ways of knowing about teaching that may be different
from mine, as well as careful negotiation with them of the goals we would share for our intern.
Again, I recognized that ways of knowing and doing depend on countless variables, including
one’s individual perspective derived from their own context, experiences, and training. Through
my direct collaboration with these members of the internship triad in various settings, I was able
see multiple dimensions of teacher knowledge come into tension, even conflict, as each member
would try to share his or her way of knowing about teaching with the others. I was struck by the
understanding that while we were all talking about teaching, we often struggled to find words to communicate our knowledge about what good teaching is and what good teachers do, which begs the question, how can teaching profess a distinct professional knowledge base, when even educators themselves struggle to articulate their practice knowledge?

**Conflicting Views of Teacher Practice Knowledge: an Illustration**

Those outside of education may underestimate the extent to which teachers encounter epistemological tensions in their day-to-day professional experiences. This occurred to me in the fall of 2012 when I met with an internship triad team, (a language arts intern, her cooperating teacher, and her university supervisor), to establish a plan of action for the intern after concerns were raised by the cooperating teacher that the intern was not making satisfactory progress towards independent teaching. The cooperating teacher and I had spoken on several occasions about the concerns she was having about her intern such as: her inability to teach without observing the cooperating teacher’s model; a lack of content knowledge; and a resistance to feedback on ways to improve. During one of those conversations, the cooperating teacher shared that the school principal had come to conduct an informal evaluation of the intern, after which the principal expressed serious concerns for the duration of the intern’s time at the school.

After her 50-minute observation, the principal prepared a written report of the intern’s strengths, as well as her concerns and expectations. The intern saw the report for the first time at our meeting a week later. The principal noted as strengths the fact that the students were polite and respectful, the intern used an effective strategy to gain the students’ attention, and that the objective for the lesson was on the board. She noted as concerns that the objective for the lesson was low-order; the students were engaged in bell-work, followed by what she deemed was a non-instructional activity (the creation of an organizational manipulative called a “foldable”) for the
entire period; there was no evidence that the district curriculum was being used; no rigor, collaboration, or high-order thinking questions or activities occurred; and finally, that no teaching or learning took place. The principal also listed “expectations” for the intern, starting with the use of the district curriculum. Additionally, she noted the expectation that lessons include collaboration and both formal and informal assessments, increased rigor, and higher-order questions in order to prepare students for the state standardized test. An admonition for using the foldable strategy was also listed, as was the importance of intellectual stimulation of students.

As often happens when university representatives, such as university interns and their supervisors, enter the field of practice to collaborate with teachers and administrators in schools, I sensed each of our desires to defend our various perspectives of good practice in response to the principal’s feedback. I sensed that the intern’s need to defend what had been assessed as her poor performance. I sensed that cooperating teacher felt the need to defend her instructional choices as well as her role as the lead teacher in the classroom and her desire to both teach and protect the intern. I sensed that the university supervisor felt caught between the cooperating teacher and the intern, and once the principal became involved, he felt pressure to take swift action to remedy the situation, even if it meant dismissing the intern. As the field experience coordinator, I found myself being asked to defend the university program that had prepared the intern for the internship experience. All of us agreed that the report was not a good endorsement of the intern’s performance; however, in my probing to understand why the intern made the instructional choices she did that day, her explanations, while lacking in practical soundness, did explain her thinking. She shared that she allowed the bell work activity to go on longer than planned because the next activity depended on the students’ completion of the bell work activity.
The foldable strategy was one she had learned in her university coursework, and she admitted that she underestimated how long it would take to have students create the product. As a result, she never got to the lesson she intended. I could understand how a novice teacher might make those mistakes, even in one class period.

What the principal observed was true in some regards – no observable teacher-driven content-related instructional moment occurred in that 50 minutes; however, the reasons the intern cited reveal that her lack of experience in timing student activities, perhaps more than her lack of ability to create more rigorous lessons, was the cause of the problem. As we, the triad team and I, discussed the incident with the intern, she acknowledged that the day the principal observed was not a good day, and that her greatest fear was that the principal wouldn’t come back again to see a different lesson. The cooperating teacher went on to share that these types of informal observations occur for beginning teachers frequently as a matter of district policy, and similar to the feedback the intern received, the evaluators – most often administrators – look for specific criteria as markers of good teaching, regardless of the lesson, and without an opportunity for the teacher to debrief with the evaluator. Had the issue not been discussed among the triad team, the intern may not have had the opportunity to debrief the experience. The principal was doing the intern a favor in a way by helping her to prepare for the realities and expectations of teaching in the district; however, after her observation, the principal cited concern that the intern might not be suitable to teach in that district. During the conversation with the intern, as we worked on a plan to help her improve her teaching based on both the feedback from her cooperating teacher and the notes from the principal, I was struck by the realization that the conversation required careful navigation on my part of the conflicting epistemologies of practice represented by the cooperating teacher, the university supervisor, the principal, and the intern.
Noteworthy is the fact that the cooperating teacher is a National Board Certified Teacher, who is pursuing a doctoral degree in curriculum and instruction, and who was recently named Teacher of the Year by her state professional association. She is a conscientious mentor who hopes to reflect her scholarship in teacher education as well as her practical teaching knowledge in the most appropriate ways to enhance her intern’s learning. Her students have some of the highest state test scores, and her principal relies on her to maintain a high school grade. By her own admission, the cooperating teacher departs from the district curriculum and adapts it when she feels it necessary, preferring instead to provide her students with the kind of instruction she believes will produce the best learning. It may be that because of her level of expertise, her departures from and adaptations of the district curriculum are overlooked by the principal. However, in the case of the intern, whom the cooperating teacher suggested may have been viewed by the principal as a potential threat to student test scores, adherence to the district curriculum was essential, as was evidence that she was using the mandated strategies and techniques upon which beginning teachers are evaluated. The intern, having entered into her cooperating teacher’s teaching space, had been following her lead, therefore the intern may not have made aware that any particular strategies were required. Not only did the intern receive different messages about the kind of knowledge required for good teaching, the messages were further confounded by a lack of shared vocabulary to account for the differences between the knowledge the cooperating teacher used to make decisions and the type of knowledge espoused by the principal.

While the cooperating teacher and the principal both showed a commitment to students and their test scores, the cooperating teacher expressed her commitment by rejecting the district curriculum and instructional strategies to some degree in favor of her own based on her practical
wisdom gained through her experience; the principal expressed her commitment to student learning, test scores, and her school’s grade by enforcing the district curriculum and instructional strategies. Such adherence to the mandated curriculum and strategies for teaching illustrates what Zeichner (2012) describes as the two current views of teaching: the view of teachers as professionals and the view of teachers as technicians. He points to new teacher preparation programs focused on developing teachers to serve as “educational clerks” (p.u) who simply deliver scripted curriculum and strategies, rather than educated professionals with both technical and acquired adaptive expertise necessary to exercise discretion and judgment in the classroom to meet the needs of their diverse students. There is a growing concern about the teacher-as-technician view and the instrumentalist values that pervade professional schools, practices, and policy decisions (Kinsella & Pitman, 2012a; Zeichner, 2012). Kinsella and Pitman (2012a) describe their sense that something of fundamental importance and moral significance is missing from the vision of what it means to be a professional, particularly in the field of education. They suggest that what is missing from the instrumentalist perspective might be recovered through Aristotle’s intellectual virtue, phronesis, or practical wisdom (p.1).

What Constitutes the Knowledge Required to Teach?

Returning to the question of what teachers need to know and be able to do to teach well, the opposing views of the cooperating teacher and the school principal illustrate the epistemological conflict inherent in technical-judgment practice controversy (Polkinghorne, 2004). Caught in the middle of these conflicting views is the intern, perhaps unsure whose view of teacher knowledge might be best to adopt as her own perspective. The question of what teachers should know and be able to do in order to perform their work has a long history beyond recent decades. One of the primary issues of debate between Socrates and the Sophists surrounded the questions of what it
meant to be a teacher and what was possible for a teacher to accomplish (Jackson, 1986). Jackson reframes the question pointing to the technical-judgment based practice controversy: “Is there more to teaching than the skilled application of know-how? If so, what is it?” (p.1) Like Feldman’s (1997) description of propositional wisdom of practice as teacher “know how” or “know what,” Polkinghorne (2004) defines know-how as “the understanding of what to do to accomplish a goal,” [emphasis added] (p. 7) and suggests that one’s sources of know-how are multiple.

In addition to multiple sources of know-how, there is wide variability and disagreement on more practical matters such as the role of the teacher in promoting student learning and the best methods by which he or she might do so. These issues are further complicated by contextual matters such as methods of teaching specific subjects; levels of schooling; student characteristics including gender, race, ethnicity, socioeconomic status, achievement level, learning style, and so on; and the context of the school and surrounding community. Philip Jackson (1986) suggests that even if we could come to consensus on questions of teaching at the broadest philosophical level, distinctions at the individual human level having to do with differences among teachers and students prevent an “ultimate, non-modifiable definition of teaching (true teaching, let’s call it) that we can discover through empirical and/ or logical maneuvering,” (p. 88). Furthermore, Jackson contends that teachers themselves “are too busy doing what they have to do to worry about formal definitions of their practice.” (p.89) While Jackson may be correct, teachers must nevertheless navigate variables and uncertainties in their daily practice to make decisions based on theoretical assumptions, both their own and those of others, that are rooted in broad philosophical perspectives, even as they go about the “doing what they have to do” of their work. That is to say, that whether they are aware of it or not, teachers work within a theoretical space,
which suggests that there is in fact more to teaching than enacting a set of specified techniques or skills. Warnock (1976) reminds us of theory and practice that it is epistemologically impossible to have practice without theory, given that theory is implicit in all acts of choosing. Acts of choosing, in turn, point to need for practitioners to make judgments about what choices they should make and what actions they should take that serve the best ends for their specific students. While there is more to teaching than simple application of know-how, the problem for many teachers is that the methods they must employ are based on conceptions of knowledge that are often different from their own, thus limiting their pedagogical choices to those that are predetermined by others (Pitman, 2012; Polkinghorne, 2004). In this, the main choice with which a practitioner is left is whether or not to abandon what she would do if she were given professional autonomy.

Evidence-based practices. The technical-based practice approach developed by businesses to manage employees has been adopted elsewhere in government, health care, and professional organizations (Polkinghorne, 2004). This is experienced by teachers as a result of the standards and accountability movements in education. Currently, the role of the federal government in public education is defined by the NCLB Act of 2001, which includes strong accountability provisions emphasizing high stakes tests in reading, mathematics, and science as measures of student achievement, teacher performance, and school success (Paul, 2005). Paul notes that the act targets funding for research-based education programs that use “scientifically proven” ways of teaching children to read, and defines “‘scientifically based reading research’ as research that applies rigorous, systematic, and objective procedures to obtain valid knowledge relevant to reading development, reading instruction, and reading difficulties,” (p. 13). The use of research-proven strategies is a key principle of the NCLB Act of 2001, as is the
transformation of education into an evidence-based field (Polkinghorne, 2004). This definition reflects a narrow view of what constitutes “useful” knowledge and denotes a shift towards objective measures of evidence-based practices.

While states are given the flexibility to determine which evidence-based practices to employ to assure that students make adequate yearly progress (AYP), there has been a surge in district adoption of scripted curricula related to the use of high stakes tests as measures of accountability; however, Kaufman, Johnson, Kardos, Liu, and Peske (2002) found that support systems for helping the professional educator adapt their practice in light of the adoption of scripted curricula are nonexistent. Darling-Hammond and Bransford (2005) assert that supporters of scripted curricula see the option as a way to “produce outcomes that are better than what could be expected from…teachers…left to their own devices” (p. 363). In the current technical-based practice perspective, what counts as knowledge and skills is predetermined, as well as what methods teachers must employ to ensure that students receive the same instruction regardless of who provides it. In this view, what teachers need to know and be able to do is nearly irrelevant.

Furthermore, to measure a teacher’s effectiveness based on such a circumstance, where professional judgment – and as such, professionalism – is restricted, places the conception of teacher knowledge in an instrumentalist, technicist and empiricist “culture of evidence,” (Polkinghorne, 2004, p. 3). This perspective represents the misapplication of the technical-based approach to education that holds that a technique or program produces the change in the learner, regardless of the teacher. Feldman (1997) notes that such a view of teacher knowledge, based on propositional knowledge, leads to standards and related assessments that ask teachers to demonstrate that they “know how” or “know that,” (p. 771). On the other hand, according to Polkinghorne, judgment-based practice emphasizing phronesis, or practical wisdom, calls for
professional judgment about what to do to accomplish a goal with a specific group of people in a specific situation at a specific time and based on a practitioner’s self-knowledge, experience, and training. This type of practice allows for the inclusion of what Feldman calls the “teaching as a way of being perspective” in the “portrait of what it means to be a ‘good’ or ‘expert’ teacher,” (p. 771). The judgment-based perspective of teacher knowledge focuses on the practitioner as the main factor that produces change in students and preserves the practitioner’s professionalism and professional identity.

**Effects of scripted curricula.** Evidence of systematized mechanisms in the current context of education can be found in definitions of “highly qualified” teachers. Through scripted curricula, teachers find themselves in situations where they are asked to teach specific materials in prescribed ways for the purpose of providing equitable instruction and to control student outcomes to the extent possible. For example, in the technically based approach to practices of care, if the goal is to teach reading, then teachers are expected to follow a scripted reading program by implementing the activities set out in the script (Polkinghorne, 2004, p.3). In their study of the implementation of No Child Left Behind (NCLB) in Wisconsin and California, Smith and Gorard (2007) found that the social justice initiative to raise achievement for all students to be at odds with the states’ definitions of “highly qualified” teachers, concluding that the federal requirement that states should be NCLB compliant has led to a shift in emphasis in teachers’ professional knowledge to content knowledge over pedagogical knowledge, the result of which is teachers’ loss of opportunities to build analytical skills and critical pedagogical thinking.

In his 2005-2008 study of secondary teacher trainees in the United Kingdom examined the influence of the national mandatory framework for all students known as *Every Child Matters* (ECM) on the development of professional knowledge for preservice secondary teachers, Mead
(2011) draws a comparison between ECM and NCLB in the United States, pointing to three shared characteristics: a focus on social justice, student achievement, and a disputed definition of “high quality” teachers. Mead found that ECM in England, while informing teachers’ planning, resourcing, teaching, and assessing, “the instrumentalist implementation of what is undoubtedly a value-laden social justice policy,” has weakened the intrinsic relationship between teachers’ values, ownership of professional knowledge, and student well-being, “replacing it with the professionalization of the technical process of learning that are driven by legality and accountability” (p. 22). The shift in emphasis in teacher knowledge towards content knowledge described by Smith and Gorard (2007), as well as emphasis on the technical process of learning described by Mead (2010) is a current reality.

A Reconception of Teacher Knowledge as Phronesis

For more than three decades, scholars have called for a reconception of professional knowledge in education based on phronesis (Flyvbjerg, 2001; Polkinghorne, 2004; Schön, 1983; Van Manen, 1977) in response to what Eisner (2002) calls a “long-standing aspiration” (p.376) within the field to create a form of practice based on a positive science of education. Gholami and Husu (2010) point to the domination of the foundational system of justification of knowledge in epistemological studies in philosophy, but that the foundational system of propositional knowledge claims faces challenges in practical domains such as teaching. Flyvbjerg (2001) describes the attractiveness of the natural-science model to scholars who study human affairs due to its logical simplicity, impressive material results, relatively cumulative production of knowledge, and the ability to make predictions based on context-independent theories. Polkinghorne (2004) locates the problem of applying the natural-science model to human or social sciences in what he calls the technical-judgment practice controversy regarding
practices of care, which he defines as teaching, nursing, social work, and psychotherapy among others. His thesis is that these “practices of care require that practitioners’ actions are decided by their situated and timely judgments,” (p.1); however, over the past several decades, as a result of the scholarship of the natural-science model of education, mechanisms of professionalism have become systematized, and practitioners of care have been asked to adopt a technologically guided and increasingly prescriptive approaches for determining their practice, thereby circumscribing their capacity to act autonomously and utilize their contextually informed judgments (Kinsella & Pitman, 2012b; Polkinhorne, 2004).

A rise in calls for phronesis as a way knowing, a way of reflection, a way of being-in-teaching, a means of explaining teacher judgment and decision making, and a means of reclaiming value in the current view of knowledge in education is evident in the literature on teacher knowledge. Kinsella and Pitman (2012b) suggest that storied cases are needed to convey examples of phronesis in teacher practice in the practice context. According to Eisner (2002), “What is important for educational theory, in general, and the improvement of teaching, in particular, regarding phronesis is the recognition of the importance of particularity” (p. 381). Van Manen (1990) asserts that in order to recognize the importance of particularity involved in phronesis as embodied deliberation, a human science approach is necessary. Human science is the study of meaning through descriptive-interpretive studies of patterns, structures and levels of experiential and/or textual meanings (Van Manen, 1990, p. 181). Because the experiential characteristics of teacher knowledge are usually hidden or veiled it is difficult to make phronesis explicit (Husu, 2002); however, a deeper understanding of what teachers experience as they make professional judgments both in preparation to teach and during active instruction, what
Eisner (2002) calls “in-flight actions of teachers,” is a step in making this crucial and essentially invisible dimension better understood and articulated.

**The Problem**

Given the teacher-as-technician view and the instrumentalist values that pervade professional schools, practices, and policy decisions (Kinsella & Pitman, 2012a; Zeichner, 2012) with regard to teacher qualification, evidence-based practices, teacher and scripted curricula, there is growing concern that something of fundamental importance and moral significance is missing from the vision of what it means to be a professional, particularly in the field of education. Jackson’s (1986) question, “Is there more to teaching than the skilled application of know-how? If so, what is it?” (p.1) points to this technical-judgment based practice controversy. A lack of consensus on what constitutes the professional knowledge base in teaching is further complicated by the fact that accountability measures based on evidence-based practices and scripted curricula circumscribe the ability of teachers to act as professionals with both technical and acquired adaptive expertise necessary to exercise discretion and judgment in the classroom to meet the needs of their diverse students (Zeichner, 2012). Furthermore, the knowledge teachers use to make pedagogical decisions is difficult to articulate. Like Polanyi (1967) suggests of tacit knowing, teachers know more than they can say; however, they lack a means of communicating the kind of knowledge they utilize to make judgments about which techniques and strategies are most appropriate in which circumstances, and for whom they are most appropriate. In order to be able to articulate teacher practical knowledge in a way that reflects the complexities of practice, a framework that captures the complexity of teaching practice and helps to define the type of knowledge beyond content and technique, which enables teachers to make practically wise decisions is needed. Aristotle’s intellectual virtue, phronesis, has been proposed
in the literature as a means of reconceptualizing professional knowledge (Flyvbjerg, 2001; Polkinghorne, 2004; Schön, 1983; Van Manen, 1977) and reclaiming value in the current view of knowledge and a means of explaining teacher judgment and decision making. Descriptions and illustrations of professional phronesis in teacher practice and the practice context are needed in order to better understand phronesis as a possible means to account for what’s missing in the technicist view of teacher knowledge.

**Purpose of the Study**

I conducted this study to explore and describe the practical knowledge of highly competent teachers as it is revealed through meaning making about their experiences of pedagogical reasoning. The aim of this study was to provide an interpretive description of teacher pedagogical reasoning, and then utilize the construct of professional phronesis as a framework for understanding the dimension of teacher knowledge involved in judgment (Coulter & Wiens, 2002; Kinsella, 2012). While phronesis has been suggested in the literature as a means of describing a way of knowing teachers’ employ in their practice, I did not presuppose that evidence of phronesis would emerge from the participants’ experiences of pedagogical reasoning. Nonetheless, it was the a priori intention of this study to examine the participants’ experiences of pedagogical reasoning utilizing professional phronesis as a frame.

**Overview of the Conceptual Framework**

This study is grounded in four concepts of teacher reasoning: Lee Shulman’s (1986) cyclical model of teacher reasoning; Donald Schön’s (1983, 1987) reflective practice; Michael Polanyi’s (1967) tacit knowledge; and Aristotle’s intellectual virtue phronesis. Teacher knowledge is multidimensional, and much of that knowledge is tacit. Like Shulman (1987) posits, teacher knowledge is comprised of both content knowledge and knowledge of
pedagogical technique, and these are engaged by teachers consciously through cognitive processes; however, another dimension of teacher knowledge, distinct from pedagogical content knowledge, is active, engaged in practice, informed by both grand and personal theory, and is experiential in nature. Much of expert teachers’ practical knowledge operates out of intuition (Berliner, 1994; Dreyfus & Dreyfus, 1986; Schön, 1983/87; Polanyi, 1967) based on their background of experiences as students, the success or failure of past teaching experiences, socio-cultural norms and linguistic structures, and their embodied prior knowledge about teaching (Polkinghore, 2004). Much of this intuitive, arational (Berliner, 1994; Flyvbjerg, 2001), way of knowing in action that draws on a teacher’s background is tacit knowledge (Polanyi, 1967; Schön, 1987), and occurs outside of consciousness. Terms such as implicit, preattentive, prereflective, and automatic are used by psychologists to describe this nonconscious thought process (Polkinghorne, 2004).

According to the findings of McAdam, et al. (2007), tacit knowledge is, "knowledge-in-practice developed from direct experience and action; highly pragmatic and situation specific; subconsciously understood and applied; difficult to articulate; usually shared through interactive conversation and shared experience." While tacit knowledge is difficult to articulate, it is engaged in the act of teaching as a teacher makes judgments during instruction. Sternberg and Horvath (1999) on the operation of tacit thinking in professional practice contend that personal knowledge, which includes professional knowledge, cannot be expressed in its fullness because it is deeply grounded in experience and inextricable from the activity and effort that produces it. While secondary teachers make over 200 decisions every hour (Jackson, 1968), most of those decisions are made tacitly and are therefore rarely examined consciously by the practitioner; however, Polanyi (1967) suggests that while practitioners know more than they can readily
articulate, they gain competence with the tacit dimensions of interactions with the world. Through an understanding of the tacit dimensions of their interactions with students, teachers gain competence in their teaching.

In an effort to describe the kind of knowledge expert practitioners employ to make value judgments in action, scholars and researchers such as Dunne, Eisner, Fenstermacher, Flyvbjerg, Shulman, and Polkinghorne, have turned to the virtue ethics of Aristotle, in particular his “special” intellectual virtue, phronesis. The literature on teacher practical knowledge points to Aristotle’s virtue of phronesis as a special type of knowledge that, unlike his other types of knowledge - episteme and techne, accounts for what is variable in teacher practice; that which isn’t defined by universal rules, but on specific cases; and captures the moral and ethical dimensions of teaching in ways that other views of teacher knowledge do not.

Aristotle's phronesis is an intellectual virtue that is reasoned and capable of action with regard to what is good or bad for man, which concerns values and goes beyond analytical, scientific knowledge (episteme) and technical knowledge or know-how (techne); it involves judgments and decisions made in the manner of a virtuoso (Flyvbjerg, 2006). He points out that while there are modern derivatives of episteme, (i.e. “epistemology” and “epitemic”), and techne, (“technology” and “technological”), there is no longer a word for the one intellectual virtue, phronesis. He suggest that this fact indicates the degree to which scientific and instrumental rationality dominate modern thinking, in spite of the fact that Aristotle and other founders of the Western tradition saw phronesis as necessary and prerequisite to successful social organization (p. 371). Similar to the virtuosity by which Flyvbjerg defines phronesis, Eisner (2002) reframes phronesis as "practical reasoning" that leads to artistry. For Eisner,
phronesis addresses the particularity and distinctiveness of things and situations so that one can decide how to move in a morally-framed direction (p. 381).

Halverson (2004) notes a recent upsurge in interest in educational research in phronesis as a means to name a model for the comprehensive capacity that integrates knowledge (often tacit knowledge), judgment, understanding and intuition in order to effect appropriate and successful action, not as epistemic theoretical knowledge, and not as technical application of skill, but as active knowledge that is its own means and ends. In this way, phronesis captures the ways in which practitioners engage propositional knowledge of teaching, pedagogical content knowledge (Shulman, 1986), as well as a wealth of intuitive knowledge from their background (Polanyi, 1967), as they make professional decisions based on tacit reasoning described by Schön’s (1983, 1987) reflection-in-action.

**Exploratory Questions**

The aim of this study is to describe teacher knowledge in terms of practical wisdom, utilizing Aristotle’s concept of phronesis as a framework for understanding the dimension of teacher knowledge beyond episteme and techne involved in pedagogical reasoning. The questions that will guide the study are the following:

1. How do highly competent teachers perceive and describe the experience of pedagogical reasoning?
2. In what ways can the knowledge highly competent teachers employ in pedagogical reasoning be described in terms of phronesis?

**Significance of the Study**

Kinsella and Pitman (2012a) note a growing concern about what they call instrumentalist values that pervade the professional schools, practices, and policy decisions within the human
sciences, namely education and health care. They make the case for practitioner reflection and judgment as phronesis, building on Schön’s criteria for professional judgment, given that reflection is implicated in professional practice through the judgments and actions it informs in the lives of practitioners. This study may provide a deeper understanding of how teacher judgment might be informed by phronesis. Furthermore, storied case studies that reveal examples of phronesis could be instructive in terms of the cultivation of phronesis in the profession, in sensitizing teacher education programs to phronesis, and in documenting individual and collective experiences of phronesis in professional practice.

Definition of Terms

**Highly competent teacher.** Based on Dreyfus and Dreyfus’s skill acquisition model (1986) as well as Berliner’s (1994) adaption of the model, the term “highly competent teacher” in this study refers to a practitioner who characterizes the skills of the competent/proficient performer who makes conscious choices, sets priorities, decides on plans, accomplishes things, is not easily side-tracked, has rational goals and chooses sensible means for reaching them and may use intuitive reasoning such as making “micro-adjustments” based on a holistic way of seeing situations (p.18).

**Pedagogical reasoning.** The process of reasoning in teaching that “begins with an act of reason, continues as a process of reasoning, culminates in performances of imparting, eliciting, involving, or enticing, and then thought about some more until the process can begin again,” (Shulman, 1987, p.233). Shulman represents the cyclical nature of pedagogical reasoning in the following stages: comprehension of a disciplinary subject and purpose; transformation of the subject matter for student learning; instruction, evaluation of student understanding and teacher performance; reflection; and new comprehension.
**Professional phronesis.** Kinsella and Pitman (2012b) detail five main features of professional phronesis: 1) depends on aspects of the individual practitioner and is informed by her history and experience as well as her disposition; 2) requires discernment and implies reflection in order to make interpretive judgments by weighing generalities and particulars in concrete situations; 3) requires action based on such judgments, and this action is linked to a moral commitment responsibility to act rightly; 4) is relational and dialogic; and 5) recognizes the problematic nature of practice.

**Tacit knowledge.** According to the findings of McAdam et al. (2007), tacit knowledge is, "knowledge-in-practice developed from direct experience and action; highly pragmatic and situation specific; subconsciously understood and applied; difficult to articulate; usually shared through interactive conversation and shared experience," (p. 46).

**Overview of the Methodology**

Van Manen (1990) asserts that one’s choice of method should maintain a “certain harmony with the deep interest that makes one and educator in the first place,” (p.2). My deep interest in teacher pedagogical reasoning resonates with my own experience as an educator, as well as with the purpose of this study. As a researcher, I have a unique understanding of teaching and teachers because I was first a teacher, and even as I have pursued scholarly work with teachers, it is my experience as a teacher that has afforded me the ability to meld scholarship and research on teaching with the practice of teaching in a meaningful way. As my scholarship on teaching developed over time, my new understandings shaped my own teaching practice. I became aware of my pedagogical reasoning at a point in my practice when much of what I did as a teacher was intuitive. It is my deep personal connection to my own pedagogical reasoning in practice, my personal expertise that became explicit to me through scholarship, reflections, and joint
exploration of this invisible aspect of teaching with other teachers, that inspires my passion for this inquiry.

Van Manen (1990) also asserts that pedagogy, which is the activity of teaching, parenting, educating or generally living with children, “requires a phenomenological sensitivity to lived experience.” The phenomenon of pedagogical reasoning as experienced by highly competent teachers implies the same necessity for sensitivity to lived experience. Furthermore, pedagogical reasoning is often tacit – knowledge that operates without conscious thought (Berliner, 1994; Dreyfus & Dreyfus, 1986); however, guided reflection on and conversation about tacit knowledge is a viable means of making such knowledge explicit (McAdams, et al., 2007). This study aims to get as close as possible to the participants’ experiences as lived, and access to participants’ experiences depends on their ability to reflect upon and self-interpret their experiences. Given this need for sensitivity to lived experience in order to gain access to participants’ tacit knowing and takes into account the researcher’s interpretation of the participants’ experiences was necessary. Interpretive Phenomenological Analysis (IPA) as defined by Smith, Flowers & Larkin (2009) is in harmony with the nature of the phenomenon in question, the goals of this study, and my role as the researcher.

In order to develop a more detailed, multi-perspectival account of the constructs of pedagogical reasoning and professional phronesis, I employed an interpretive phenomenological case study design (Smith et al. 2009) to examine the experiences of three participants. The primary purpose of the study was to examine the pedagogical reasoning of three highly competent teachers in both a broad sense and through the specific cases of the three participants. The secondary purpose of the study was to examine in what ways, if any, the attributes of the pedagogical reasoning experienced by the participants could be described in terms of the features
of professional phronesis. In order to accomplish these two goals, I chose to collect two types of data: interview data and personal narrative data. I then analyzed the data in two ways: cases-with-themes and themes-within-case. First, I analyzed the individual participant cases for themes across cases, while noting variations among the three participants. Second, I analyzed the data for the ways in which the attributes of pedagogical reasoning expressed by the themes derived from the cross-case analysis aligned with the features of professional phronesis defined by Kinsella and Pitman (2012b) in order to present the themes within each case.

According to Denzin and Lincoln (2005), all research is interpretive, and one’s beliefs about the world and how it should be studied forms one’s interpretive framework, representing one’s ontological, epistemological, and methodological perspectives (Denzin & Lincoln, 2005). The present study is informed by a constructivist-interpretive paradigm characterized by the three assumptions termed the ontological, epistemological, and the methodological (Guba & Lincoln, 1989). As an interpretive paradigm, constructivism assumes a relativist ontology based on co-created realities, a transactional/subjectivist epistemology, and, therefore, a hermeneutic/dialectical methodology (Denzin & Lincoln, 2005). As Guba and Lincoln (1989) explain, the relativist ontology assumes that human sense-making organizes experience in a comprehensible and explainable form as an act of construal independent of a foundational reality, and rejects the notion of an objective truth. The transactional/subjectivist epistemology holds that assertions about reality and truth depend entirely on the meanings, information, and level of sophistication available to the individuals engaged in making those assertions. Regarding methodology, the basic assumption of constructivism is hermeneutic-dialecticism: a process by which constructions entertained by the several involved individuals are uncovered and plumbed for meaning and then confronted, compared, and contrasted in situations (Guba & Lincoln,
Denzin and Lincoln (2005) assert that constructivism connects action to praxis. This study proposes to examine the phenomenon of teacher pedagogical reasoning as it operates in the intellectual space where action and praxis meet in teacher practice, which may align with phronesis as the dimension of knowledge that relates to praxis. Given that pedagogical reasoning of highly competent teachers is often tacit and located within the personal knowledge of individuals, it is the participants’ interpretation of reality that forms the data for this study. Through their interaction with me, the researcher, participants’ reality was interpreted by themselves first, and co-constructed through their conversations with me.

Contributing to the interpretive framework of this study is the specific context within which the phenomenon is explored. The pedagogical reasoning of teachers resides within their minds, but occurs within a practical realm – the context of their workplace and within the spaces where they enact their roles as educators. Thorne (2008) gives an example of this intellectual space within the practical realm from the field of nursing, which she calls a “complex and ‘messy’ discipline oriented towards care for the sick, which is related to the scientifically oriented clinical medicine (p. 25). She notes that nursing’s praxis orientation, the relationship between practice and knowledge, is shared by other applied disciplines. Like education and other practices of care, nursing is embedded in an evidence-based practice context driven by empirical science. She highlights two needs: first, “the desperate need for new knowledge pertaining to the subjective, experiential, tacit and patterned aspects of the human health experience” (p. 36), not in order to further theorizing, but to provide contextual understanding sufficient enough to apply evidence to the lives of real people; and second, access to methods that allow for the interpretation of the practical realities. Like nursing, the field of education is driven by evidence-based practices derived from scientific research and may benefit from a deeper understanding of the subjective,
experiential, tacit and patterned aspects of the practical context of education in which practitioner decisions are made on a daily basis.

This study explores the phenomenon of teacher pedagogical reasoning within this practical context for the purpose of providing, like Thorne (2008) suggests, deeper contextual understanding of the practical knowledge of teachers through an interpretive lens, rather than to advance theorizing. To do so, a method that allows for the interpretation of the practical realm for the sake of deeper understanding, rather than to generate context-free generalizable theory, is necessary. IPA aligns with the constructivist perspective that defines the interpretive framework of this study, particularly regarding the notion that a phenomenon must be understood both for itself and in the context within which it is studied.

Smith et al. (2009) point to three theoretical premises for IPA: 1) experience should be examined in the way it occurs and in its own terms; 2) phenomenology is interpretive, and therefore utilizes hermeneutics to make interpretations; 3) phenomenological idiography allows investigators to focus on the particular rather than only the universal, by providing details and depth of analysis to understand a phenomenon from the perspective of particular people in a particular context (p. 29). IPA is informed by two epistemological underpinnings: phenomenology and hermeneutic inquiry. The phenomenological philosophy of Husserl and Heidegger emphasizes that human experience takes place within situated contexts and requires interpretation to be understood. This is achieved in IPA through the interpretation of the researcher. IPA is also influenced by hermeneutic inquiry, which provides a framework for interpretation with a focus on context and original purpose and makes clear that the co-construction of reality is based on a researcher’s interpretation of data assisted by the participants who provide the data (Patton, 2002). As a result, “one must know about the researcher and the
researched to place any qualitative study in a proper hermeneutic context” (Patton, 2002, p.115).

With regard to the present study, practical knowledge is active knowledge, and since it is impossible to be in the mind of a practitioner during activity, hermeneutic phenomenological reflection (Van Manen, 1990) focusing on teachers’ experiences of pedagogical reasoning can affect a more direct contact with the experience as lived (p. 78). Like hermeneutic phenomenology, IPA relies on a double hermeneutic, or double interpretation: the researcher interprets the participants’ attempts to interpret and make sense of their experiences. In this case, my own experiences as a teacher, teacher educator, and collaborator with practicing teachers in the field experiences of preservice teachers, my own phenomenological reflection provides me with a perspective that sensitizes me to the experiences of other teachers.

IPA locates itself within the discipline of psychology and is one of several closely-related approaches to phenomenological psychology that share a commitment to exploring lived experience but have different approaches to engaging in research projects (Smith & Eatough, 2012). IPA focuses on what happens when the flow of everyday experience takes on particular significance for individuals. For example, methods of empirical phenomenological inquiry such as transcendental phenomenology (Moustakas, 1994), aim at identifying the essential structure of a psychological experience in general, objective terms (Giorgi, 1997). To address context-specific particulars related to the experiences of individuals, IPA research is committed to an idiographic, case level of analysis, which makes IPA distinct from other phenomenological approaches (Smith & Eatough, 2012). The focus of IPA on the experience of individual participants rather than only what is universal among experiences of a phenomenon enables a researcher to make specific statements about individuals who experience a phenomenon, rather than limit description to the phenomenon outside of the. This aspect of IPA allows for the focus
of studies to be oriented in two directions at once: towards the possibility of learning something from the narrative lifeworlds of the participants who share their stories; and, towards the possibility of learning about general themes across individual experiences of a phenomenon (Smith & Eatough, 2012).

Additionally, IPA studies can be designed to answer two levels of questions: 1) a central question relating to lived experience of a phenomenon, and 2) a secondary question aimed at a theoretical concern (Smith et al., 2009). This is aligns with the goals of this study: to describe the phenomenon of pedagogical reasoning of highly competent teachers; and to determine to what degree the pedagogical reasoning of the participants can be described in terms of professional phronesis. The goal for data collection was to elicit hermeneutic reflections from participants about their experiences of pedagogical reasoning. These data were: 1) analyzed for themes as they emerged across participants; 2) analyzed to explore the ways in which participants’ experiences of pedagogical reasoning reflect phronesis.

The participants I recruited for this study were all teachers at the partnership middle school at which I had served as university liaison for four years. The middle school and the university have a more than 20-year relationship, starting when the middle school opened in 1991 as a professional development school site. I chose to recruit participants at this school site since this my work within the partnership has provided me with access to and knowledge of their practices.

IPA studies, which prioritize depth over breadth, have been published with various sample sizes, from 1-15 or more (Smith & Eatough, 2012). Suggested considerations for how many participants to include in an IPA study are one’s commitment to the case level analysis of data, the richness of individual cases, interest in the ability to compare and contrast cases, and pragmatic restraints. For the purposes of this study, a sample size of three is appropriate to
provide multiple perspectives on the phenomena and allow for an interpretive analysis of constructs and themes, as well as rich idiographic presentations of findings for each participant (Smith et al., 2009; Smith & Eatough, 2012).

Participants for this study were recruited purposively based on my knowledge of their teaching practice as a result of my experiences working with them in various school-university activities. Since guided reflection on and conversation about tacit knowledge is suggested as a viable means of making such knowledge explicit (McAdams, et al., 2007), I sought to recruit three specific participants with whom I believed rich hermeneutic reflection would be possible. IPA studies suggest as homogeneous samples, with the main inclusion criteria being an experience with the phenomenon in question, (Smith et al., 2009). Since it is an assumption of the study that all teachers engage in a process of pedagogical reasoning, I focused on additional characteristics based this study’s on the pedagogical reasoning of highly competent teachers. Since competence is subjective, participants were recruited based on characteristics that Dreyfus and Dreyfus (1986) Berliner (1994) suggest indicate expert performance. Each of the participants who agreed to participate in the study share the following characteristics that serve as the inclusion criteria for this study: 1) at least 10 years of teaching experience; 2) extensive professional development such as advanced degrees and other professional development experiences; and 3) reflective practice habits. I met with each participant to discuss the study with them and to determine their interest in participation. After obtaining their verbal assent, I sent an email to each participant details about the study as well as the informed consent documents for their review.

Fran is a female who has 28 years of experience as a language arts teacher, a masters graduate degree, National Board Teacher Certification, and is a charter member of the
partnership school. I first came to know her more than 10 years ago through our mutual involvement in a local chapter of the National Writing Project (NWP). The National Writing Project is a teacher professional development program based on the teachers-teaching-teachers professional development model. Fran and I are both teacher consultants for the local chapter of the NWP, having participated in a five-week invitational summer institute geared towards engaging teachers of various disciplines and levels in reflective research on teaching practices in writing. I have worked with Fran at the partnership site in her role as a cooperating teacher, as well as committee members of the school’s professional development school (PDS) committee. Her years of experience, commitment to the profession, her extensive professional development, and her reflective habits make her an ideal participant for this study.

Melissa has 12 years of teaching experience in language arts, six of those at the middle school level. At the time of the study, she was finishing a graduate degree in secondary education. Like Fran, I first came to know Melissa more than three years ago through our mutual involvement in a local chapter of the NWP. Since that time, I have worked with Melissa at the partnership school in her role as a cooperating teacher on two occasions, and I was her instructor in a graduate course on teaching grammar during the summer of 2012. Additionally, she has served as a model teacher on two occasions for teaching lab activities when she has not been serving as a cooperating teacher. Through these interactions with Melissa, I have had the occasion to witness her classroom teaching, read her written reflections, and engage in deep professional conversations with her. Like Fran, she has many years of experience, a commitment to the profession, extensive professional development, and reflective habits, which make her an ideal participant for this study.
Diane has 16 years of experience as a math teacher, all of which have been at the partnership school site. She earned her undergraduate degree in secondary education from the partner university, completed her internship at the partnership school, and was hired at the school following graduation. She earned her graduate in secondary education degree from the partner university as well. She is a leader in her department, facilitating her math teacher colleagues as they have transitioned over time to new texts, standards, and curricula. I first came to know Diane in 2009 when she served as a cooperating teacher at the partnership school when I served as a university intern supervisor. Since that time, we have worked together on a national conference presentation and a manuscript based on her professional development through her role as a mentor to preservice teachers. Like Fran and Melissa, she has many years of experience, a commitment to the profession, a commitment to professional development, and reflective habits.

The data for the study are 1) in-depth semi-structured interviews (an initial interview followed by a second interview with each participant); and 2) written protocols from each participant. Because of my relationships with the participants through our mutual work related to developing preservice teachers, work together in professional learning experiences, and our previous conversations about teaching practice, I utilized hermeneutic phenomenological data collection strategies defined by Van Manen (1990). These methods align with the hermeneutic foundation of IPA and more clearly represent the specific techniques I employed in collecting data. The interviews represented what Van Manen terms a “conversational interview,” and they were vehicles for developing “conversational relation with a partner,” i.e. the interviewee, to gather “experiential narrative material” (p. 66). In addition to two interviews – the initial interview and follow-up interview, participants provided what Van Manen (1990) terms a “lived-
experience description” in the form of a written protocol (p. 64). These provided personal accounts of participants’ experiences with the phenomena of pedagogical reasoning that emerged after participating in the initial semi-structured interview, and these served as a starting-point for the second semi-structured interviews.

Data for each participant were collected in the following series of activities: 1) initial interview (See Appendix A); 2) participant written protocol (See Appendix B); 3) second interview to allow participants to discuss the incidents cited in their written accounts in further detail (See Appendix C). I audio-recorded the interviews with each participant, and I transcribed the interviews verbatim, including my questions and contributions to the conversation.

Once all interviews were transcribed I began the first stage of IPA analysis: reading and rereading the transcript; however, the first stage of analysis merged with the second stage: initial noting. Through the early stages of the analysis process, as I read and reread each hermeneutic unit, I moved from the first to third stage: developing emergent themes. In this stage, I worked from my own analytical notes rather than the transcripts in order to reduce to volume of detail while recognizing patterns, connections, and interrelations among the notes. I created lists of initial codes from the notes that grouped the data categorically rather than chronologically within the transcript. In the fourth stage, searching for connections across themes, I worked to reorder the codes and themes from the chronological order of the transcript into a categorical organization. This step involved combining codes from the initial and follow-up interviews as well as the written protocols into a single list of emergent themes. Similarities among codes often required collapsing them into a single theme. For example, initial coding included separate codes for “learning to teach” and “professional development” in which the participant described
the how her pedagogical reasoning had evolved over time. These two codes were collapsed into the one theme: “Pedagogical reasoning develops over time through experience.” Through this reductive process, I generated a list of superordinate themes for the first participant, and then moved on to the second hermeneutic unit to begin close reading and rereading the transcript data. For step five: moving on to the next case, I completed the same steps for the two remaining participants before moving on to step six: looking for patterns across cases. At the sixth stage of the analysis, I engaged in a reductive process to determine which themes were relevant to all three participants. I used a matrix to organize the superordinate themes for each participant and to have a visual means of assessing the similarities across cases.

In order to answer Question 2, following the analysis of the phenomenon to understand the participants’ experiences of their pedagogical reasoning, I then analyzed the superordinate themes to determine in what ways, if any, the experiences described by the participants with regard to pedagogical reasoning might be explained by the construct professional phronesis. To facilitate this, I created a matrix of the superordinate themes and subthemes and the features of professional phronesis described by Kinsella and Pitman (2012b). Due to the complexity of both the phenomenon of pedagogical reasoning and the construct professional phronesis, I chose to present stories from each participant experience to provide rich descriptions of the phenomenon of pedagogical reasoning as illustrations of professional phronesis.

Assumptions

This proposed study will rest on several assumptions. The first assumption is that the professional activity of teachers depends on pedagogical reasoning, and that the pedagogical reasoning of highly competent practitioners is comprised of propositional knowledge of the content to be taught (Shulman, 1987), technical knowledge regarding the methods by which
content knowledge might be transformed into received knowledge of students (Shulman, 1987), and practical wisdom of the most prudent actions to take in employing propositional and technical knowledge (Orton, 1997). Additionally, the view of teacher knowledge and reasoning adopted in this study acknowledges the cognitive processes outlined by Shulman (1987) related to teaching a specific content and the processes of knowing-in-action and reflection-in-action outlined by Schön (1983, 1987). A second assumption is that the knowledge that teachers employ in pedagogical reasoning may be tacit, (McAdam, et al., 2007; Polanyi, 1967; Schon, 1983/1987), and therefore not readily accessible to practitioners in a way that allows clear articulation of that knowledge. Given this, data will be collected through multiple semi-structured hermeneutic interviews in order that that participants’ tacit knowledge may be articulated through conversation and become explicit knowledge. A third assumption of this study is that pedagogical reasoning occurs at all stages of professional activity, including pre-instructional, instructional, and post-instructional stages.

Limitations

Phenomenological analysis requires a starting point, and that point is the researchers’ own relationship to the phenomena under investigation (Van Manen, 1990; Moustakas, 1994). Due to my relationship to the phenomena as a former teacher, a teacher educator, a university liaison to the research site, my relationship with the participants, and my own perceptions of teacher practical reasoning, I acknowledge that my relationship to the participants and the school partnership may be construed as biased. Due to my embeddedness in the context over many years, which reflects prolonged engagement in the field (Creswell, 2007), I did not attempt to wholly bracket out or set aside my own experience to see the phenomenon as if for the first time (Moustakas, 1994). My transparency regarding my relationship to the topic, participants,
research site, and my own perceptions of the phenomena were useful my interpretation of the data and contributed to the intersubjective quality of the hermeneutic circle (Van Manen, 1990). Kaler and Beres (2010) assert that in qualitative research, a researcher’s relationship to the field of inquiry as an insider can enhance rather than contaminate the researcher’s ability to make appropriate interpretations of the data. Additionally, the double hermeneutic employed in IPA research accommodates both the participants’ interpretations if their experiences as well as the researchers interpretation of the participants’ sense making. I also maintained two researcher reflective journals to document and to make transparent my thoughts, concerns and questions as well as my meta-awareness of my involvement in the study and its effects, including the way my presuppositions became aware to me through analysis.

The sample size prevents the findings of this study to be generalized to larger populations; however, a goal of the study was to provide rich and thick descriptions of the experiences of the participants. Another limitation may be the reliance on the participants’ self-reported reflections of their experiences, as opposed to data collected through simulated-recall or otherwise observed by the researcher. The double hermeneutic aspect of the IPA method accommodated the interpretation of experience on the part of the participant, as well as my interpretation of their experience.

**Chapter Summary**

In this chapter, I provided a basis for the study. I provided the background for and a statement of the problem. While the conceptual framework will be discussed thoroughly in Chapter Two, I provided a brief overview of the conceptual framework, pointing to Shulman’s (1986) pedagogical reasoning and action model, Schön’s (1983/1987) reflective practice model, Orton’s (1997) Aristotelian model, and Polanyi’s (1967) concept of tacit knowledge. Building on
these conceptions of teacher reasoning, I presented an overview of Aristotle’s virtue phronesis as a conception of teacher knowledge and an extension of pedagogical content knowledge and reflective practice and as a means of describing the kind knowledge that expert teachers utilize in making pedagogical judgments, albeit often tacitly (Berliner, 1994; Dreyfus & Dreyfus, 1986).

Based on this conceptual framework, the following questions will be explored:

1. How do highly competent teachers perceive and describe the experience of pedagogical reasoning?
2. In what ways can the knowledge highly competent teachers employ in pedagogical reasoning be described in terms of phronesis?

In an effort to clarify terminology within the study, I provided definition of terms salient to understanding the perspectives I have adopted here. I provided a clear rationale for the choice of an interpretive perspective for the design of the study, as well as the choice of IPA as the method for data collection and analysis. I outlined the various types of data I will collect in order to provide in-depth interpretive descriptions (Smith et al., 2009) of participants experiences of pedagogical reasoning: transcripts from phenomenological semi-structured interviews, participant written protocols, and my researcher reflective journal. Finally, I discussed the assumptions of the study, as well as the limitations of the study in an effort to be transparent about the intentions of this research project and my relationship to it.

This dissertation is divided into five chapters. In the first chapter I provide an introduction to the study, background, statement of purpose, and the conceptual framework through which the research questions will be explored. I provide an overview of the methodology and define the terminology used in the study. Finally, I address the assumptions of the study. In chapter two, I review the conceptual framework thoroughly, including the perspectives of teacher reasoning
represented in Lee Shulman’s (1986) model of pedagogical reasoning and action, Schön’s (1983/1987) reflective practice, and Orton’s Aristotelian balanced model of teacher reasoning. I also review Polanyi’s (1967) tacit knowledge since each model of teacher reasoning takes a position on the relevance of tacit knowledge to practitioner knowledge. In addition to these aspects of teacher knowledge, I examine Aristotle’s intellectual virtue, phronesis, as it applies to teacher professional knowledge in the literature. In Chapter Three, I outline the methodology used to answer the research questions. Participants are described, as are the methods of data collection. The method of data analysis, interpretive phenomenological analysis, as well as the process by which findings will be analyzed and interpreted is discussed. In Chapter Four, I present the results of the interpretive phenomenological analysis in two parts. In the first section, I present the three superordinate themes and the eight subthemes emerged from the cross-case analysis of the rich data provided by the participants regarding their pedagogical reasoning (research question #1). In the second section, I present the six traits of professional phronesis adapted from Kinsella & Pitman (2012b), then compare these six traits of professional phronesis to the features of pedagogical reasoning that emerged from the participant data. I then present three illustrations of pedagogical reasoning in terms of phronesis in the form of individual narratives based on stories shared by each of the participants. In Chapter Five, I present a discussion of the each superordinate theme that resulted from the data analysis by considering the ways in which each reflects extant models of teacher reasoning, as well as ways in which the findings inform new insights regarding teacher reasoning. Following this, I discuss the significance of the study, discuss limitations, reflect on the research processes, and suggest directions for future research.
Chapter Two

Review of the Literature

The purpose of this study is twofold: first, to describe the practical wisdom of highly competent teachers as they articulate their pedagogical reasoning through reflective dialogue; and second, to explore the ways in which this knowledge can be described in terms of Aristotle’s concept of phronesis. The exploratory questions guiding the study are the following:

1. How do highly competent teachers perceive and describe the experience of pedagogical reasoning?

2. In what ways can the knowledge highly competent teachers employ in pedagogical reasoning be described in terms of phronesis?

The purpose of this chapter is to review the literature pertaining to three models of practitioner knowledge as they relate to teacher practice. Additionally, I will provide a review of research studies of teacher knowledge as phronesis. Three models of teacher reasoning build the conceptual framework guiding this study: Lee Shulman’s (1986) pedagogical reasoning in action; Donald Schön’s (1983, 1987) reflective practice; and Orton’s balanced model of teacher knowledge based on Aristotle’s intellectual virtue phronesis. Imbedded in these models of teacher knowledge is the role of Michael Polanyi’s (1967) tacit knowledge. I will discuss Dreyfus and Dreyfus’s (1986) five stages of skill acquisition in order to describe the relationship between practitioner expertise and tacit knowledge. Each of these concepts of practitioner knowledge informs the perspective on teacher pedagogical reasoning and practical wisdom.
adopted in this study, and serves to situate the proposed research within the broader field of study. The view of teacher knowledge and reasoning adopted in this study acknowledges the cognitive processes outlined by Shulman (1987) related to teaching a specific content and the processes of knowing-in-action and reflection-in-action outlined by Schön (1983, 1987). The view of teacher reasoning adopted by this study accepts that teacher reasoning is theoretical, technical, as well as practical/moral as reflected in Aristotle’s episteme, techne, and phronesis, presented by Orton (1997) and acknowledges phronesis as a dimension of practitioner knowledge and reasoning that is rarely acknowledged in the current paradigm of teacher accountability and evaluation. Additionally, the present study acknowledges that expert knowledge, whether theoretical, technical, or practical/moral, is often tacit knowledge, and that the tacit knowledge of experts is fundamental to practical wisdom.

**Overview and Historical Background**

The conceptual framework for this study takes into account differing views of teacher knowledge and reasoning, each of which was brought to light through the 1987 exchange between Lee Shulman and Hugh Sackett as it played out in the *Harvard Educational Review*. In Shulman’s seminal 1986 essay, “Those Who Understand: Knowledge and Growth in Teaching,” and its sequel, “Knowledge and Teaching: Foundations of the New Reform,” (1987), he set out to answer two questions foundational to this study: “What are the sources of the knowledge base for teaching?” and “In what terms can these sources be conceptualized?” Citing both the Holmes Group (1986) report, and the Carnegie Task Force on Teaching as a Profession (1986), he pointed out that the claim that teaching should be elevated to professional status was based on the fundamental premise that the standards for teacher education and performance can be articulated clearly (1987). Based on his contention that the rhetoric on the teacher knowledge
base of the time did not specify the character of such knowledge, Shulman offered what he suggested might be an “answer to the question of the intellectual, practical, and normative basis for the professionalization of teaching,” (p. 4). His answer points to what he identified as “the missing paradigm” in research on teaching, which he called, “a blind spot with respect to content” (1986, p. 198). Focusing on that blind spot, Shulman (1987) offered the following categories of teacher knowledge: content knowledge; pedagogical knowledge; curriculum knowledge; pedagogical content knowledge; knowledge of learners; knowledge of educational contexts; knowledge of educational ends, purpose and values; as well was an outline of teacher pedagogical reasoning and action.

In response to Shulman’s essay, Hugh Sockett argued that Shulman’s conception of professional knowledge lacked an acknowledgement of the contextual nature of teaching and the significance of situated judgment, building on Schön’s (1983) concept of reflective practice. Sockeyt referred to this situated judgment as “reason-in-action – which connects wisdom, tacit knowledge, plans, techniques, ideals, and justification with experience” (p. 215). For Sockeyt, reason and action meet in practice within the “unpredictable, changing, and uncertain context, the classroom” (p. 205). This context, he contends, demands that a teacher take action for what is best based on practical judgment. He argues that the root of teaching practice is judgment, not items of knowledge in the form of discrete and measurable techniques. Sockeyt asserts that judgment is a form of knowledge itself, and as practical understanding develops, judgment emerges as wisdom (p.210).

While both Shulman and Sockeyt argued for a clearer conception of teacher knowledge, the two scholars differ in their views about 1) the language used to depict research in the field of education; and 2) the role of tacit knowledge in teaching practice (Pitman, 2012). With regard to
the language used to describe teaching and knowledge about teaching, Shulman (1987, p. 477.) suggests that while the moral dimension of teaching is undeniable, the appropriate choice for describing teaching for the purpose of identifying good pedagogy is the language of pedagogy itself. Sockett’s criticism of Shulman is that the language of pedagogy is technical in nature and implies how categorizations and descriptions of good teaching might be determined. The second departure between Shulman and Sockett focuses on the role of tacit knowledge in teaching practice. Defined by Michael Polanyi (1967), tacit knowledge refers to deep personal knowledge about which a practitioner may not be able to express. Polanyi (1967) contends that practitioners know more than they can tell (p.4). Sockett, again drawing on Schön’s (1983) view of the role of tacit knowledge in reflective practice knowledge, suggests that tacit knowledge is present in teaching, and is fundamental in the connection between wisdom, technique, and experience; however, he contends that tacit knowledge is intrinsic, and therefore not fully able to be made explicit. Sockett does suggest that tacit knowledge can be described by insightful observers. In contrast, Shulman holds through reflective practice and the insights of others, we can make implicit knowledge explicit, which may then be shared and able to be deliberated. Pitman suggests that this dispute between a technical or moral language for describing teaching as well as the role of tacit knowledge in teaching practice point to different theories of knowledge: Shulman’s approach suggests reasoning in line with empirical research and episteme hold; Sockett’s approach argues for a different form of knowledge, which he contends is form of phronesis (p. 135). This exchange highlights three distinct types of knowledge: 1) propositional teacher knowledge; 2) reflective practice and its relationship to tacit knowledge; and 3) a form of practical knowledge similar to phronesis. These types of knowledge provide a framework for this study of teacher knowledge as practical wisdom.
In what follows, I present a discussion of the three categories of thinking represented by Aristotle’s intellectual virtues of episteme, techne, and phronesis, including the definition for phronesis used in this study. Within this discussion of phronesis, I review three studies that examine teacher knowledge in terms of phronesis. Next I present a discussion of three models of teacher reasoning: Shulman’s model which represents a rational view of teacher reasoning built on a professional knowledge base; Schön’s model which represents practitioner reasoning as an active process of reflection, regardless of the practice or knowledge base; and Orton’s model which represents a view of teacher reasoning based on a three-part distinction among the aims of teacher reasoning that include theoretical, practical, and productive ends. Next, building on Polanyi’s tacit knowledge, I discuss tacit knowledge and how it relates to expert knowledge based on Dreyfus & Dreyfus’s novice to expert continuum.

Aristotle’s Phronesis

**Episteme, Techne, and Phronesis.** In his *Nicomachean Ethics*, Aristotle argued that wisdom is made up of three virtues of mind: *episteme*, which translates to universal truth (Flyvbjerg, Landman & Schram, 2012) or *scientific knowledge*, the view of knowledge held by educational research; and *techne*, which translates to know-how (Flyvbjerg, Landman & Schram, 2012) or *craft knowledge*: the most effective means of reaching a goal, regardless of the nature of the goal (Birmingham, 2004). Aristotle’s identification of a distinct state of mind, phronesis, captures what is necessary for a practitioner to bridge the gap between theoretical, objective episteme (content knowledge) and the productive result of craft, or techne (student achievement), (Orton, 1997). Figure 1, adapted from Kemmis (2012) and Polkinghorne (2004), highlights the distinctions between and relationships among these three aspects of wisdom according to Aristotle.
Contemporary Interpretations of Phronesis. Polkinghorne (2004) asserts, “Because there is not an overlap between our current assumptions about the world (our horizon) and those of writers of other historical periods and cultures, understanding their ideas involves interpretation,” (p. 98). As such, definitions of phronesis have been derived from Aristotle’s ethical arguments and filtered through contemporary application. Phronesis is most often translated as practical wisdom (Birmingham, 2003, 2004; Carr, 2010; Fitzgerald, 2000; Giles, 2010; Halverson, 2004; Hostetler, 2002; Kessels & Korthagen, 1996; Loughran & Berry, 2005;
Salloum & Abd-El-Khalick, 2010; Sellman, 2009; Spence, 2007). Phronesis has also been characterized as intelligent prudence (Birmingham, 2003; Flyvbjerg, Landman & Schram, 2012) located within contextual, pragmatic experience (Salloum & Abd-El-Khalick, 2010) that takes into account the “humanness” involved in situations and particularities of the people involved (Fitzgerald, 2000) and is directed towards particulars in concrete situations (Giles, 2010; Flyvbjerg, Landman & Schram, 2012), rather than generalities, to find the most beneficial course of action in response to immediate concerns by making value judgments that emerge from heightened awareness (Coulter & Weins, 2002).

**The Practically Wise Agent.** Phronesis is inextricable from moral character in the same way that Aristotle connects knowledge to virtue (Spence, 2007), and while phronesis is a knowledge defined by virtuous action, it is dependent on the *phronimos*, the person characterized by practical wisdom as the moral agent. Therefore, phronesis is not just what people do, but who they are. The relationship is circular: one cannot be “good” without practical wisdom, not practically wise without moral virtue. Applied to teachers, Spence (2007) points out that phronesis is tied to the selfhood of a teacher, which is then revealed through observable practice.

Phronesis is the process of reasoning that produces action made as a result of wise judgment by a practically wise agent as he or she engages in practice. Van Manen (1977) asserts that praxis guided by phronesis is emancipatory for the person who engages in it. This emancipation through phronetic practice allows for teachers to engage in acts of teaching in dynamic and responsive ways as a means of attending to the individual and real (rather than theoretical) humans and circumstances involved in any educational context or exchange.

**Phronesis as both Intellectual and Moral-Emotional.** Sellman (2009) contends that phronesis is a “special virtue” because it spans both intellectual and moral-emotional domains.
He identifies phronesis as the virtue that enables one “to know when to do the right thing to the right person at the right time and for the right reason.” Rather than to give a formulaic response ill suited to the context or complexities of a situation, as is suggested by “if-then” protocols taught in ethics case studies or found in curricular scripts, phronesis enables one to exercise prudent judgment in any situation based on personal characteristics that become characteristic responses over time through practical experience. Thus, practical wisdom continues to develop when a practitioner has the occasion to build a repertoire of phronetic characteristics rather than a repertoire of decontextualized “tricks of the trade.”

In their study of teacher practical-moral knowledge, Salloum and Abd-El-Khalick (2010) examined three Lebanese secondary science teachers using a hermeneutic model to develop ethnographic case studies of the teachers’ practical-moral knowledge indirectly by investigating their commitments, interpretations, actions and dialectic interactions. They found that these teachers made sense of their actions in terms of their concern to represent themselves as dutiful and fair to their students, which they suggest underscores the practical-moral nature of teacher knowledge. They also suggest that the development of practical-moral knowledge can be characterized as gap-closing to align external requirements to internal self-interpretations as “good teachers,” and conflict between internal goods such as challenging students both academically and socially. They characterize teacher knowledge as phronetic and perceptual, and suggest that teacher change and helping teachers adopt reforms requires considering how reform goals align with teacher self-worth, noting that if teachers cannot see themselves as “doing good” within the vision of reform initiatives, they are likely to reject the reform visions (p. 946). This view of the teacher as phronimos, or wise/moral practical agent, unites the self of the teacher.
with the reasoning processes required to take action when teachers are confronted with new ways of approaching their craft.

**Phronesis as Professional Knowledge.** In an effort to describe the kind of knowledge that expert practitioners employ to make value judgments in action, scholars and researchers such as Dunne, Eisner, Fenstermacher, Flyvbjerg, Shulman, and Polkinghorne have returned to the virtue ethics of Aristotle, namely in regard to phronesis. Aristotle's phronesis is an intellectual virtue that is reasoned and capable of action with regard to what is good or bad for man, which concerns values and goes beyond analytical, scientific knowledge (episteme) and technical/productive knowledge or know-how (techne); it involves judgments and decisions made in the manner of a virtuoso (Flyvbjerg, 2006). He points out that while there are modern derivatives of episteme, (i.e. “epistemology” and “epitemic”), and techne, (“technology” and “technological”), there is no longer a word for the one intellectual virtue, phronesis. He suggest that this fact indicates the degree to which scientific and instrumental rationality dominate modern thinking, in spite of the fact that Aristotle and other founders of the Western tradition saw phronesis as necessary and prerequisite to successful social organization (p. 371). Similar to the virtuosity by which Flyvbjerg defines phronesis, Eisner (2002) reframes phronesis as "practical reasoning" that leads to artistry. For Eisner, phronesis addresses the particularity and distinctiveness of things and situations so that one can decide how to move in a morally-framed direction (p. 381).

Kinsella and Pitman (2012b) provide a set features used to describe what they call professional phronesis by contributing authors of the text *Phronesis as Practical Knowledge: Practical Wisdom in the Professions* (2012). As such, the authors provide some definitional terminology for professional phronesis. They suggest that, as one of Aristotle’s special virtues,
phronesis is the virtue that enables us to judge what we should do in a particular situation, and is a virtue that “straddles the categories of intellect and character, of cognition and affect,” (p.164). Citing Kemmis (2012), they provide the following definition (italics original):

A quality of mind and character and action – the quality that consists in being open to experiences and being committed to acting with wisdom and prudence for the good. The person who has this virtue has become informed by experience and history and thus has the capacity to think critically about a given situation… and then to think practically about what should be done… When we have phronesis, we are thus prepared to take moral responsibility for our actions and the consequences that follow from them. The virtue of phronesis is thus a willingness to stand behind our actions. (p.164)

Kinsella and Pitman (2012b) detail five main features of professional phronesis. First, professional phronesis depends on aspects of the individual practitioner and is informed by her history and experience as well as her disposition. Second, professional phronesis requires discernment and implies reflection in order to make interpretive judgments by weighing generalities and particulars in concrete situations. Third, professional phronesis requires action based on such judgments, and this action is linked to a moral commitment responsibility to act rightly. Fourth, professional phronesis is relational and dialogic; and fifth, professional phronesis recognizes the problematic nature of practice. In addition to these five features of professional phronesis is a sixth feature which Pitman (2012) calls the paradox reflected in current practice. He notes that:

As the mechanisms of professionalization have been put in place, the levels of prescription have increased, circumscribing the capacity of members to act autonomously in situations that demand that judgment by exercised. (p.166)
Phronesis as Teacher Professional Knowledge. The literature on teacher practical knowledge points to Aristotle’s virtue of phronesis as a special type of knowledge that, unlike episteme and techne, accounts for what is variable in teacher practice; that which isn’t defined by universal rules, but on specific cases; and captures the moral and ethical dimensions of teaching in ways that other views of teacher knowledge do not.

Halverson (2004) notes a recent upsurge in interest in educational research in phronesis as a means to name a model for the comprehensive capacity that integrates knowledge (often tacit knowledge), judgment, understanding and intuition in order to effect appropriate and successful action, not as epistemic theoretical knowledge, and not as technical application of skill, but as active knowledge that is its own means and ends. In this way, phronesis captures the ways in which practitioners engage propositional knowledge of teaching, pedagogical content knowledge (Shulman, 1986), as well as a wealth of intuitive knowledge from their background (Polanyi, 1967), as they make professional decisions based on tacit reasoning described by Schön’s (1983, 1987) reflection-in-action. Unlike craft knowledge or techne, there is no tangible product of phronesis; however, there is result of phronesis (Flyvbjerger, 2006) which is the knowledge through which experts navigate toward successful action the many decision junctures they encounter. However, as Berliner (1994) points out, expert teachers who embody the very expertise to which novice teachers aspire, operate almost entirely out of consciousness, or in his words, “arationally,” and find difficulty in articulating their practical knowledge because of its tacit, intuitive nature.

Husu (2002) conducted three sets of interrelated studies of teacher pedagogical knowing based on a theoretical framework that focused on teacher knowledge as phronesis. Using narrative interviews and The Reading Guide method, Husu collected responses of 55 primary
and 33 secondary school teachers. He found that pedagogical activity was not simply what happened in classrooms, but was also located “inside” the teachers. Husu found many cores of teachers’ pedagogical knowing, such as ways of making justifications, individual epistemologies, relational ethics, and practices of managing dilemmas; as a result, he considered pedagogical knowing as an activity that cut across all of these areas. The common feature identified within these various cores of pedagogical knowing was uncertainty. Husu notes that both pedagogical knowing and action involved uncertain practical problems, and while teachers were responsible for resolving them, “the basis for their judgments and actions was often implicit and unclear…due to the fact that the situations were already tied to other agents, histories, and institutional arrangements,” (p. 18).

Gholami and Husu (2010) examined the practical knowledge of two experienced teachers by addressing how they reasoned about their practical knowledge. Based on Fenstermacher and Richardson’s (1993) research of teacher practical thinking in terms of the practical argument as a formal elaboration of practical reasoning, they studied two forms of teachers’ practical knowledge: overarching beliefs, and knowledge-in-use. The authors make a distinction between what they call the phronesis-praxis perspective and the practical argument perspective derived from Aristotle’s practical syllogism. The phronesis-praxis perspective holds that teaching can be best understood within the conceptual framework of phronesis, or practical reasoning, as one way to support practice and teachers’ knowledge within a contextual system of justification through more general and inclusive activities of thinking. Distinct from the phronesis-praxis perspective, the practical argument perspective holds that practical reasoning can be formally elaborated within the specific structure of a series of reasons connected to a concluding judgment or action. The practical arguments they identified by their participants had three important
elements: a practical knowledge claim; grounds, such as contextual grounds; and warrants, such as conditions for good actions. They found that the teachers made two types of warrants: moral ethos, and efficiency of action. They note a distinction between the kind of knowledge used when the teachers warranted their knowledge claim by moral ethos as praxial knowledge, and when they supported their knowledge claim by efficiency of action as practicable knowledge.

Pertinent to this study is their conclusion that teachers’ pedagogical reasoning can be examined, here using the practical argument, to show the interdependent knowledge related to both phronesis-praxis and “what works” warrants teachers employ.

One may wonder if it is even possible to ever understand the tacit intuition-based knowledge of highly competent teachers. In spite of the confounding nature of the practical knowledge of expert practitioners, in Phronesis as Professional Knowledge: Practical Wisdom in the Professions (2012), contributors from various fields including education, health, management, medicine, and physics present different perspectives on phronesis as an alternate way of considering professional knowledge, citing the dominance in the current professional context by technical rationalities and instrumentalist approaches. While phronesis as professional knowledge may be tacit knowledge, such knowledge can be elicited and shared through interactive conversation and shared experience (McAdam, Mason & Mccrory, 2007).

**Models of Teacher Reasoning**

Husu (2002) points to a tendency in educational research to reduce complex practical problems to procedural ones, noting that these tendencies 1) fall short of revealing how pedagogical knowing is converted to pedagogical practice; 2) ignore the multiple contexts within which pedagogical knowing operates; and 3) disregards evidence that professional knowledge is personal knowledge that develops within individuals through practical activities and
communication with others. In an effort to address the complexity of teacher knowledge in ways that avoid the shortcomings outlined by Husu, the conceptual framework of this study is grounded in three models of pedagogical knowing. When taken together, these models present a view of teacher knowledge that accounts for greater complexity. The following discussion presents these three models.

**Shulman’s Model of Pedagogical Reasoning and Action.** Shulman’s (1987) model of teacher reasoning presents teaching as both comprehension and reasoning, transformation and reflection (p. 13), and rests on Fenstermacher’s (1978, 1986) argument that the goal of teacher education is to educate teachers to reason soundly and perform skillfully rather than to behave in prescribed ways. Shulman contends that teaching is both effective (what teachers do) and normative (what teachers ought to do), and his concept of pedagogical reasoning emphasizes the intellectual basis for teaching performance beyond what is simply observable. His model hinges on the assumption that most teaching is initiated by some form of text or piece of material that the teacher would like for students to understand. He contends that pedagogical reasoning and action are cyclical, cognitive processes through which teachers engage in five activities to arrive at new understandings: comprehension, transformation, instruction, evaluation, and reflection. Shulman notes that while the processes are presented sequentially, they are not meant to be fixed stages or steps.

According to Shulman’s model, the comprehension and transformation processes occur prior to instruction. During the comprehension process, teachers reason about the content and purposes for teaching the content, which may go beyond the learning of a text to include, for example, the development of “understandings, skills, and values needed to function in a free and just society” (p.235). Shulman contends that these comprehended ideas by the teacher must then
be transformed if they are to be taught. The transformation process of the model requires the combination or ordering of a set of processes: 1) preparation of the text materials, including critical interpretation; 2) representation of ideas in the form of analogies and metaphors; 3) selection of instructional methods and models; 4) adaption of these representations to the general characteristics of the students being taught; and 5) tailoring of the adaptations to the specific needs of the students in the classroom. It is this transformation process, Shulman contends, that distinguishes a teacher from non-teachers.

According to Shulman, the instruction process involves the observable performance of teaching acts, and includes what he suggests are the most crucial aspects of pedagogy, as well as those observable aspects of direct instruction well documented in the literature: classroom management; presentation of clear and vivid lessons; the assigning and checking of student work; and interaction with students through questioning, praise, or criticism. He further suggests that a teacher’s observable behavior is bound up with a teacher’s comprehension and transformation of content. The evaluation process includes informal checks for understanding during the instruction phase and formal assessment to provide feedback and grades. Shulman notes that this process is dependent upon pedagogical content knowledge, (both the material taught and the processes of learning associated with that content), as well as evaluation of one’s own teaching, which Shulman links to reflection. The reflection process of Shulman’s model involves a teacher looking back over the teaching and learning that has occurred and learns from the experience, and includes a review of teaching outcomes compared to the ones that were originally sought. Shulman defines reflection in terms of a disposition towards reflection, strategies, as well as analytical knowledge. The final outcome of Shulman’s model is new comprehension of purposes and content as well as students and the processes of pedagogy, which
is the result of the five reasoning process activities. Shulman notes that new comprehension doesn’t occur automatically; rather it becomes a reconstituted repertoire through documentation, analysis, and discussion.

Shulman’s cyclical model of teacher reasoning as a process was criticized for providing too narrow and rational a view of teacher knowledge. Shulman (1992) would later reflect on his model and his hopes of developing of a knowledge base for the teaching profession while defining the “missing paradigm”:

“I began to feel that we had finally arrived at a comprehensive view of teaching. Content had now joined the mix, and the picture was complete – or so I had deluded myself into thinking. No sooner had our work on the “pedagogy of substance” begun to flourish than a cogent critique appeared…” (p. 376)

Shulman goes on to note that he had missed the “centrality of character,” and teaching as a moral activity, adding that teaching was no more content than it had been behavior, cognition, or culture.

Shulman’s model depends on the reasoned analysis, not just tacit knowledge, of a professional who employs a body of knowledge and a set of defensible strategies in practice (Orton, 1997). With its focus on the transformation process of content knowledge, the model provides an important distinction between the activities of teachers and nonteachers. In this way, Shulman (1987) fills the gap between one’s personal comprehension of a subject and the processes teachers engage in to prepare for the comprehension of others. Additionally, Shulman accounts for the judgments that teachers must make that defy prescription, pointing instead to the need for teachers to “reason soundly” (p. 13), given that transformed knowledge must also be adapted and tailored to students’ specific characteristics. Shulman contends that teachers must
learn to use their knowledge base to provide the grounds for their pedagogical decisions, which points to the notion of judgment-based practice (Polkinghorne, 2004), rather than a technical-rational (Schön, 1983/1987) perspective.

Missing from the model, however, is a suggestion about what the knowledge base for making pedagogical decisions actually is. Shulman’s critics, namely Sockett and Fenstermacher, suggest that part of that knowledge base depends on moral reasoning. In addition to the absence of a means to account for the kind of thinking practitioners employ in making judgments throughout the process of pedagogical reasoning, Shulman places the role of reflection as a distinct process that occurs after instruction. Shulman states that pedagogical reasoning does not stop once instruction begins, but that the processes of comprehension, transformation, evaluation, and reflection continue during active teaching; however, he stops short of describing how that might occur. While Shulman (1987) posits that the codifiable knowledge that can be derived from the wisdom of practice, yet he contends that tacit knowledge of teachers is of little value if teachers are held responsible for explaining what they do and why they do it (p.12). Schön’s model of reflective practice illustrates how practitioners, regardless of the field of practice, develop their practice knowledge through examining their tacit knowing through reflecting-in-action.

**Schön’s Model of Practitioner Reflection.** Schön’s (1983, 1987) model of reflection-in-action builds on the conception of professional artistry, and rests on three premises: 1) that a core of artistry is inherent in the practices of professionals we recognize as unusually competent; 2) artistry is different in crucial aspects to our standard model of professional knowledge, although it is an exercise of intelligence and a kind of knowing; artistry is rigorous and it can be studied by examining the performances of unusually competent performers; and 3) applied science and
research-based technique are bounded on several sides by artistry – the art of problem framing, the art of implementation, and the art of improvisation – all of which are necessary to use applied science and technique in practice (1987, p. 15).

Schön’s model of reflection-in-action centers on knowing-in-action, which he defines as “the sort of knowledge we reveal in our intelligent action – publically observable, physical performances,” in which the knowing is in the action. He suggests that tacit knowing-in-action is revealed by our spontaneous, skillful execution of a performance about which we are “characteristically unable to make verbally explicit” (1987, p. 25). This he describes in terms of Polanyi’s (1967) tacit knowledge. He contends, however, that it is possible to make a description of our tacit knowledge implicit in our actions by observing and reflecting on our actions. When we describe our tacit knowing-in-action, we convert it to knowledge-in-action. When we have learned how to do something, Schön contends, we can execute that activity without having to think about it, relying on our knowing-in-action to establish a familiar routine. On occasions when that routine produces an unexpected result, we may brush it aside, or we may respond by reflecting on the situation, either after the fact or by pausing to think, or by reflecting in the midst of the action, during what Schön calls the “action-present,” the period of time in which we can still make a difference in the situation (1983, p. 62), without interrupting it (1987, p. 26). The latter represents Schön’s model of reflection-in-action.

**Reflection-in-action.** Schön (1983, 1987) describes reflection-in-action as a pattern of inquiry in terms of a sequence of moments in a process. The process begins with a situation in which one’s actions are spontaneous and routine. These actions reveal tacit knowing-in-action and are utilized without conscious deliberation. Such routines work so long as the situation remains bound by what one deems normal; however, sometimes a routine action produced an
unexpected outcome, puzzlement, or confusion in an uncertain or unique situation. This moment of surprise occurs when an outcome doesn’t fit into one’s knowing-in-action, and leads to reflection in the action-present. Schön notes that this reflection is conscious to some degree, although it may not occur through words. It is a moment when one considers the unexpected outcome of our previous knowing-in-action, which may have been implicit, turning back to both the surprising phenomenon and the thought itself. “The practitioner may surface and criticize his initial understanding of the phenomenon” (1983, p.63), giving rise to an on-the-spot experiment during which one thinks up and tries out new actions intended to explore the new phenomena, test understandings about them, or affirm the actions intended to change things for the better (1987, p. 28).

Like Shulman, Schön cautions that the moments of reflection-in-action do not occur as distinctly as he describes them; however, he adds that “regardless of the distinctness of its moments or the constancy of their sequence, what distinguishes reflection-in-action from other kinds of reflection is its immediate significance for action” (1987, p. 29). Schön also makes a distinction between reflection-in-action and knowing-in-action: a skilled performer adjusts his responses to variations in phenomena, responding to variation rather than surprise, integrating reflection-in-action into the knowing-in-action of the performance of an ongoing task. He connects this integration of reflection-in-action and ongoing performance to the improvisation of jazz musicians: “Listening to one another, listening to themselves, they “feel” where the music is going and adjust their playing accordingly” (1987, p. 30).

Practitioners’ knowing-in-action is embedded in a shared context of a community of practice who share values, preferences, and norms for how they make sense of practice situations, formulate goals and direction for action, and determine what counts as acceptable
professional conduct. When a practitioner reflects-in-action, Schön contends that he becomes a researcher in the practice context, defining means and ends interactively as he frames a problematic situation without separating thinking and doing, and allowing reflection-in-action to proceed even in situations of uncertainty.

In delineating the relationship between knowing-in-action and reflection-in-action, Schön describes professional practice in terms of two definitions for practice: 1) professional performance in a range of professional situations; and 2) preparation for performance through experimental of repetitive activity with the goal of increased proficiency (1983, p. 60). He argues that professional practice includes both elements of these elements of practice in that a practitioner experiences similar types of situations or cases again and again, and as he experiences variations of a small number of types of cases, he is able to “practice” his practice” through reflection-in-action. Schön points out, however, that as long as the practice remains stable over time, a practitioner becomes less and less subject to surprise, and therefore less likely to experience a need to reflect-in-action. The practitioner’s knowing-in-action becomes increasingly tacit, spontaneous, and automatic, which Schön contends is the mark of specialization; however, as expertise grows, practitioners risk what Schön refers to as “over learning,” in which they are selectively inattentive to phenomena which do not fit their knowing-in-action. In other words, they ignore what doesn’t fit into their existing knowledge and resist opportunities to think about what they are doing, instead repeating patterns of error which they cannot correct. Schön suggests that this may lead to boredom or burn-out. The corrective to this over-learning, according to Schön, is to return to purposeful and guided reflection on their knowing-in-action (1983, p.61).
Schön notes that while reflection-in-action is an extraordinary process, it is not a rare occurrence among practitioners. He argues that reflection-in-action is a rigorous and legitimate way of professional knowing that links the uncertainty and uniqueness of practice with the scientist’s art of research. He suggests that an epistemology of practice that situates technical problem solving within the context of reflective inquiry would solve the dilemma of rigor versus relevance. While Shulman’s model of teacher reasoning is centered on the transformation of some type of text into consumable knowledge, Schön’s model of reflective practice applies to the active reasoning processes involved in any practice. Drawing on examples from music, architectural design, and psychotherapy, Schön provides cases through which practitioner reflection-in-action can be understood. Schön’s model draws heavily on the notion that much of practitioner knowledge is tacit, but that tacit knowledge can be transformed to knowing-in-action when it is described by the practitioner. This is in contrast to Shulman’s model that suggests teacher reasoning should be described in rational terms.

Orton’s Aristotelian Model of Teacher Reasoning. A third model of teacher reasoning presents a view that balances features of philosophical and psychological models by providing an Aristotelian model that emphasizes that teacher reasoning is not just theoretical and technical/productive, but practical. Orton’s (1997) Aristotelian model of teacher reasoning underscores the fact that teacher reasoning is theoretical, productive, and practical. Teacher reasoning is theoretical in that it involves reflection of both students and subject-matter; productive in that its aim is student learning; and practical in that it is an end in itself. Orton suggests that the study of practical reason, and its related terms: practical wisdom, prudence, and phronesis, has obvious implications for teaching, noting that while practical wisdom is not confined by teachers, it is exemplified by teachers (p. 570). Orton makes the threefold distinction
between Aristotle’s ways of knowing, theory, practice and production, which align with Aristotle’s faculties of pure science or knowledge (*episteme*), practical wisdom (*phronesis*), art or applied science (*techne*).

Orton contends that the productive nature of teacher reasoning is documented in reviews of process-product research, research on teacher cognition, and Dewey’s argument that teachers should “psychologize” their subject matter knowledge so that it can become linked to the experiences of the learner. Shulman’s model is one example of the transformation of content knowledge by teachers through creating representations of the subject-matter. Similarly, Orton draws on the Shulman model to show that the creation of subject-matter representations requires teachers to engage in theory in the Aristotelian sense through the making of hypotheses for pedagogical actions using practical wisdom to deliberate. Orton justifies the timeliness and timelessness of the Aristotelian model by pointing to Aristotle’s insistence that there are ethical dimensions to psychology just as there are moral dimensions to teaching (p. 582). He contends that his model accounts for the science of cognitive psychology represented by Shulman’s model, the theoretical wisdom of Schön’s reflection-in-action, as well as the moral implications of *phronesis* as practical wisdom.

Orton’s Aristotelian model provides a means of viewing teacher reasoning through multiple perspectives as aspects of teacher knowledge that aim at different ends. In his model, theory, production, and practice are all represented as facets of teacher reasoning, a view that acknowledges both the technical-rational aspects and the judgment-based aspects of teacher reasoning. Figure 2 depicts the relationship among the models of pedagogical reasoning that form the conceptual framework of the study.
Figure 2. Three models of teacher knowledge. This figure illustrates the conceptual framework of the study.
The Role of Tacit Knowledge in Teacher Reasoning

Common to all three of the models of teacher reasoning informing the present study is the role of tacit knowledge. For the purposes of the present study, I will adopt McAdam, Mason & McCrory’s (2007) definition of tacit knowledge: “knowledge-in-practice developed from direct experience and action highly pragmatic and situation specific; subconsciously understood and applied; difficult to articulate; usually shared through interactive conversation and shared experience” (p. 46). The Shulman model of teacher reasoning rejects the notion that tacit knowledge is of value to teachers, focusing instead on cognitive processes of practical rationality. On the other hand, tacit knowledge is foundational to Schön’s model of practitioner reasoning as reflection-in-action. The Orton Aristotelian model does not address tacit knowledge directly; however, the role of tacit knowledge has been identified as foundational to the practical wisdom of expert practitioners (Berliner, 1994; Dreyfus & Dreyfus, 1986; Schön, 1983/87; Polanyi, 1967). Schön (1983) highlights invented terms for the kind of knowing represented by writers on the epistemology of practice that reveals a “knowing more that we can say” (p. 51), namely Polanyi’s phrase “tacit knowing” (p.52). Schön identifies three properties of tacit knowing:

- There are actions, recognitions, and judgments which we know how to carry out spontaneously; we do not have to think about them prior or during their performance.
- We are often unaware of having learned to do these things; we simply find ourselves doing them.
- In some cases, we were once aware of the understandings which were subsequently internalizes in our feeling for the stuff of action. In other cases, we
may never have been aware of them. In both cases, however, we are usually unable to describe the knowing which out action reveals. (p. 54).

**Tacit and Explicit Knowledge**

While there is wide agreement that tacit knowledge is an important phenomenon, there is lack of agreement over whether or not it can be make explicit (McAdam, Mason & McCrory, 2007). Polanyi’s conception of tacit knowledge does not place it in a separate and distinct category of knowledge; rather it is integral to all knowing. Nonaka and Takeuchi (1995) suggest that tacit knowledge is separate from explicit knowledge, and central to knowledge creation is the transformation of knowledge from tacit to explicit (p. 47). Polanyi (1967) suggests that the possessor of tacit knowledge must become conscious of the knowledge and then find a way to express it in order for it to be shared. The present study accepts Polanyi’s view of tacit knowledge that all knowledge is tacit, and that explicit and tacit knowledge are two dimensions of knowledge rather than distinct categories. This study also accepts the view that tacit knowledge can emerge as explicit through shared dialogue and guided reflection.

**Five Stages of Skill Acquisition and the Role of Tacit Knowing**

Dreyfus and Dreyfus (1986) suggest that as humans acquire skills through instruction and experience, they do not suddenly leap from rule-guided “knowing that” to experience-based know-how. They contend that human skill acquisition is a dynamic process of at least five stages, each stage characterized by a different perspective on a person’s task and/or mode of decision making. The five stages that they offer are named novice, advanced beginner, competent, proficient, and expert.

Briefly, the novice stage is characterized by a person’s reliance on clear and objective facts that guide their actions without reference to the overall situation. Dreyfus and Dreyfus refer to this as the “context-free” features of the beginner phase. The advanced beginner, while still
relying on objective context-free features, begins to recognize non-objectively recognizable elements of specific situations. At the competence stage, a person with more experience of both context-free and situational elements of in real-world circumstances is able to adopt a hierarchical procedure of decision-making to determine which features of a situation are the most important, thereby simplifying and improving his performance. At this stage, individuals make decisions based on both features and rules; however, Dreyfus and Dreyfus suggest that much of problem-solving, even in simple daily tasks, is not conscious activity.

At the proficiency stage, individuals are usually deeply involved in their tasks and experience those tasks from the perspective of recent events. For the proficient performer, some situational features will stand out as salient, while others will recede and be ignored. Proficient performers rely on intuition, which the authors suggest is synonymous with the term “know-how,” also noting that intuitive understanding at this stage is followed by detached decision-making. Similarly, at the expert stage, an individual operates intuitively, but he doesn’t see problems in a detached way and does not worry about the future plans. “When things proceed normally, experts don’t solve problems and don’t make decisions; they do what normally works,” (p. 30-31). They go on to note that in crisis, competence is not enough. When things do not go normally, experts then deliberate, not in terms of calculative problem solving, but in terms of critical reflection on their intuition. In situations where goals, relevant information, and the effects of decisions are unclear, an interpretive ability that constitutes judgment is required. For competent performers, that judgment is conscious; however, for expert performers, that judgment is nonconscious. Dreyfus and Dreyfus point to the vast area between irrational and rational logic or reason, calling it arational reasoning and defining arational behavior as, “action without conscious analytic decomposition and recombination” (p. 36). Categorically speaking, they
assert that competent performance is rational; proficient performance is transitional; and expert performance is arational.

That expert performance is arational is also noted by Berliner (1994) in his adaption of the Dreyfus and Dreyfus stages of skill acquisition. He notes that many teachers remain fixed at the advanced beginner stage, but that many teachers who reach their third and four years of teaching reach the competent level. Berliner characterizes the competent performer as one who makes conscious choices, sets priorities, decides on plans, accomplishes things, is not easily sidetracked, has rational goals and chooses sensible means for reaching them. Berliner contends that a modest number of teachers reach the proficient stage, the stage at which intuition or know-how becomes prominent. He refers to this intuitive reasoning as making “micro-adjustments” based on a holistic way of seeing situations (p.18). It is noteworthy that for the purposes of teaching practice, Berliner suggests that the fourth and fifth stages of skill acquisition, proficient and expert, be collapsed into one category; however, unlike most psychological three-stage models of novice, intermediate, and advanced, he believes that a fourth level is appropriate to account for teachers who are more than experienced.

Berliner, like the Dreyfus and Dreyfus, agrees that experts do not consciously choose to attend to certain things or others, acting fluidly and effortlessly, borrowing the term “arational” to apply to expert teachers. He suggests that they use deliberate analytical processes only when anomalies arise. He notes, “When things are going smoothly, experts rarely appear reflective about what’s going on. In many situations [experts] may seem worse that novices or advanced beginners, who think about everything” (p. 19). Schön (1983) suggests that, like Dreyfus and Dreyfus (1986) and Berliner (1994), as practice becomes more expert, it becomes more intuitive, and therefore tacit, over time. Berliner points out that the knowledge of practitioners are these
various stages translates to different appearances of practice, in which an expert may appear non-reflective, and a novice may appear over-analytical. This presents the paradox of expert practice presented by Schön (1983/87) whereby the more expert one becomes, the more tacit one’s knowledge becomes, and the less observable one’s reasoning becomes to oneself and to others. Yet, it is believed that tacit knowledge can be accessed and made explicit by practitioners through reflective dialogue (McAdam, Mason & McCrory, 2007; Polanyi, 1967; Schön, 1983/87; Shulman, 1987.) Key to a deeper understanding of the pedagogical reasoning of expert teachers with regard to the kind of knowledge guided by phronesis is a means of accessing deeply tacit, arational knowledge and reasoning of expert teachers. Given that expert teachers may not reflect except in situations where an anomaly presents itself (Berliner, 1994; Dreyfus & Dreyfus, 1986; Schön, 1983/87), guided reflection is necessary.

Chapter Summary

The purpose of this chapter was to review the literature pertaining to three models of practitioner knowledge as they relate to teacher practice, as well as review the literature pertaining to Aristotle’s concept of phronesis as it relates to teacher knowledge and reasoning. Beginning with the historical background for the conceptual framework guiding this study, I first defined and discussed Aristotle’s phronesis, its relationship to episteme and techne, contemporary definitions and interpretations of phronesis as practical knowledge, phronesis as teacher knowledge, and the teacher as practical/moral agent. Included in the discussion of phronesis, I reviewed three studies that consider teacher knowledge from the perspective of phronesis. I then provided an in-depth discussion of three models of teacher reasoning: Lee Shulman’s (1986) pedagogical reasoning in action; Donald Schön’s (1983, 1987) reflective practice; and Orton’s balanced model of teacher knowledge based on three of Aristotle’s
intellectual virtue: episteme, techne, and phronesis. Imbedded in these models of teacher knowledge is the role of Michael Polanyi’s (1967) tacit knowledge. I define tacit knowledge and discuss the perspectives on tacit knowledge adopted by this study. To describe the relationship between practitioner expertise and tacit knowledge, Dreyfus and Dreyfus’s (1986) five stages of skill acquisition, and Berliner’s (1994) reinterpretation of the Dreyfus and Dreyfus model for teacher practice was discussed.

Each of these concepts of practitioner knowledge informs the perspective on teacher pedagogical reasoning and practical wisdom adopted in this study, and serves to situate the proposed research within the broader field of study. The view of teacher knowledge and reasoning adopted in this study acknowledges the cognitive processes outlined by Shulman (1987) related to teaching a specific content and the processes of knowing-in-action and reflection-in-action outlined by Schön (1983, 1987). The view of teacher reasoning adopted by this study accepts that teacher reasoning is theoretical, technical, as well as practical/moral as reflected in Aristotle’s episteme, techne, and phronesis, presented by Orton (1997) and acknowledges phronesis as a dimension of practitioner knowledge and reasoning that is rarely acknowledged in the current paradigm of teacher accountability and evaluation. Additionally, the present study acknowledges that expert knowledge, whether theoretical, technical, or practical/moral, is often tacit knowledge, and that the tacit knowledge of experts is fundamental to practical wisdom. Finally, since expert practice is often tacit, and since experts rarely engage in deliberate reflection except in the case of anomalies of practice, it is necessary to provide opportunities for guided reflection in order to access teacher’s pedagogical reasoning that may be likened to phronesis. Chapter Three will outline the research design and methods for the study aimed at accessing the pedagogical reasoning if highly-competent teachers.
Chapter Three

Research Design and Method

In the previous chapter, I discussed the two constructs upon which the research questions of this study are built, pedagogical reasoning and professional phronesis, and several related concepts that, when taken together, provide a broader theoretical landscape within which the constructs might be understood. In this chapter, I discuss the methodology I employed in this qualitative study to examine the constructs of pedagogical reasoning and professional phronesis: Interpretive Phenomenological Analysis.

Purpose of the Study

The purpose of this inquiry was to gain a deeper understanding of how highly competent teachers experience their pedagogical reasoning and the ways in which their experiences might be described in terms of professional phronesis. In this study, I sought to gain insight into teacher knowledge from the perspective of teachers themselves within their lived context of practice. Additionally, I sought to provide illustrations of professional phronesis, and as such, provide examples of and vocabulary for the often tacit practical knowledge of highly competent teachers. The research questions guiding this study provided the opportunity to investigate two related lines of inquiry as reflected in the purpose of the study.

1) How do highly competent teachers perceive and describe their experience of pedagogical reasoning?

This first-order, primary research question is directed towards exploring the phenomenon of pedagogical reasoning, specifically of highly competent teachers. To answer this question, I
focused on the participants’ understanding of their own experiences as knowers and doers as they engage in their work.

2) In what ways can the knowledge highly competent teachers employ in pedagogical reasoning be described in terms of phronesis?

This second-order question focuses on exploring the fit between the participants’ understandings of their experiences with the construct of professional phronesis (Kinsella & Pitman, 2012b). This second-order question assumes a possible theoretical relationship between pedagogical reasoning and professional phronesis. Such a question may only be answered at an interpretive level of analysis grounded in the phenomenological account, which had to be established as a result of the first-order line of inquiry (Smith et al., 2009). To answer this question, I examined the thematic descriptions of the phenomenon provided by the participants for evidence of professional phronesis as defined by Kinsella and Pitman (2012b), which I described in Chapter Two.

Van Manen (1990) asserts that pedagogy, which is the activity of teaching, parenting, educating or generally living with children, “requires a phenomenological sensitivity to lived experience,” and further that one’s choice of method should maintain a “certain harmony with the deep interest that makes one an educator in the first place,” (p.2). My deep interest in teacher pedagogical reasoning resonates with my own experience as an educator, as well as with the purpose of this study. The phenomenon of the pedagogical reasoning as experienced by highly competent teachers implies the same necessity for sensitivity to lived experience. Furthermore, pedagogical reasoning is often tacit – knowledge that operates without conscious thought (Berliner, 1994; Dreyfus & Dreyfus, 1986); however, guided reflection on and conversation about tacit knowledge is a viable means of making such knowledge explicit
This study aims to get as close as possible to the participants’ experiences as lived, and access to participants’ experiences depends on their ability to reflect upon and self-interpret their experiences. Given this need for sensitivity to lived experience in order to gain access to participants’ tacit knowing and takes into account the researcher’s interpretation of the participants’ experiences was necessary. Interpretive Phenomenological Analysis (IPA) as defined by Smith et al. (2009) is in harmony with the nature of the phenomenon in question, the goals of this study, and my role as the researcher.

**Research Design**

In order to develop a more detailed, multi-perspectival account of the constructs of pedagogical reasoning and professional phronesis, I employed an interpretive phenomenological case study design (Smith et al. 2009) to examine the teaching experiences of three participants. The primary purpose of the study was to examine the pedagogical reasoning of three highly competent teachers in both a broad sense and through the specific cases of the three participants. The secondary purpose of the study was to examine in what ways, if any, the attributes of the pedagogical reasoning experienced by the participants could be described in terms of the features of professional phronesis. In order to accomplish these two goals, I chose to collect two types of data: interview data and personal narrative data. I then analyzed the individual participant cases for themes across cases, while noting variations among the three participants. Following the analysis of the phenomenon of pedagogical reasoning across cases, I then analyzed the data for the ways in which the attributes of pedagogical reasoning expressed by the themes derived from the cross-case analysis aligned with the features of professional phronesis defined by Kinsella and Pitman (2012b). In order to present contextualized illustrations of pedagogical reasoning as
phronesis, I then presented the features of professional phronesis within each case individual case.

**Rationale for Using Interpretive Phenomenological Analysis**

**Interpretive framework.** According to Denzin and Lincoln (2005), all research is interpretive, and one’s beliefs about the world and how it should be studied forms one’s interpretive framework, representing one’s ontological, epistemological, and methodological perspectives (Denzin & Lincoln, 2005). The present study is informed by a constructivist-interpretive paradigm characterized by the three assumptions termed the ontological, epistemological, and the methodological (Guba & Lincoln, 1989). As an interpretive paradigm, constructivism assumes a relativist ontology based on co-created realities, a transactional/subjectivist epistemology, and, therefore, a hermeneutic/dialectical methodology (Denzin & Lincoln, 2005). As Guba and Lincoln (2001) explain, the relativist ontology assumes that human sense-making organizes experience in a comprehensible and explainable form as an act of construal independent of a foundational reality, and rejects the notion of an objective truth. The transactional/subjectivist epistemology holds that assertions about reality and truth depend entirely on the meanings, information, and level of sophistication available to the individuals engaged in making those assertions. Regarding methodology, the basic assumption of constructivism is hermeneutic-dialecticism: a process by which constructions entertained by the several involved individuals are uncovered and plumbed for meaning and then confronted, compared, and contrasted in situations (Guba & Lincoln, 2001). Lincoln and Guba (2005) assert that constructivism connects action to praxis. This study proposes to examine the phenomenon of teacher pedagogical reasoning as it operates in the intellectual space where action and praxis meet in teacher practice, which may align with phronesis as the dimension of knowledge that
relates to praxis. Given that pedagogical reasoning of highly competent teachers is often tacit and located within the personal knowledge of individuals, it is the participants’ interpretation of reality that forms the data for this study. Through their interaction with me, the researcher, participants’ reality was interpreted by themselves first, and co-constructed through their conversations with me.

Contributing to the interpretive framework of this study is the specific context within which the phenomenon is explored. The pedagogical reasoning of teachers resides within their minds, but occurs within a practical realm – the context of their workplace and within the spaces where they enact their roles as educators. Thorne (2008) gives an example of this intellectual space within the practical realm from the field of nursing, which she calls a “complex and ‘messy’ discipline oriented towards care for the sick, which is related to the scientifically oriented clinical medicine (p. 25). She notes that nursing’s praxis orientation, the relationship between practice and knowledge, is shared by other applied disciplines. Like education and other practices of care, nursing is embedded in an evidence-based practice context driven by empirical science. She highlights two needs: first, “the desperate need for new knowledge pertaining to the subjective, experiential, tacit and patterned aspects of the human health experience” (p. 36), not in order to further theorizing, but to provide contextual understanding sufficient enough to apply evidence to the lives of real people; and second, access to methods that allow for the interpretation of the practical realities. Like nursing, the field of education is driven by evidence-based practices derived from scientific research and may benefit from a deeper understanding of the subjective, experiential, tacit and patterned aspects of the practical context of education in which practitioner decisions are made on a daily basis.
This study explores the phenomenon of teacher pedagogical reasoning within this practical context for the purpose of providing, like Thorne (2008) suggests, deeper contextual understanding of the practical knowledge of teachers through an interpretive lens, rather than to advance theorizing. To do so, a method that allows for the interpretation of the practical realm for the sake of deeper understanding, rather than to generate context-free generalizable theory, is necessary. IPA aligns with the constructivist perspective that defines the interpretive framework of this study, particularly regarding the notion that a phenomenon must be understood both for itself and in the context within which it is studied.

**Interpretive Phenomenological Analysis.** Central to IPA is the concept of people as self-interpreting beings (Smith & Eatough, 2012), meaning that people are continuously engaged in interpretive activity as represented by the phrase “sense making.” Smith, et al. (2009) point to three theoretical premises for IPA: 1) experience should be examined in the way it occurs and in its own terms; 2) phenomenology is interpretive, and therefore utilizes hermeneutics to make interpretations; 3) phenomenological idiography allows investigators to focus on the particular rather than only the universal, by providing details and depth of analysis to understand a phenomenon from the perspective of particular people in a particular context (p. 29). IPA is informed by two epistemological underpinnings: phenomenology and hermeneutic inquiry. The phenomenological philosophy of Husserl and Heidegger emphasizes that human experience takes place within situated contexts and requires interpretation to be understood. This is achieved in IPA through the interpretation of the researcher. IPA is also influenced by hermeneutic inquiry, which provides a framework for interpretation with a focus on context and original purpose and makes clear that the co-construction of reality is based on a researcher’s interpretation of data assisted by the participants who provide the data (Patton, 2002). As a
result, “one must know about the researcher and the researched to place any qualitative study in a proper hermeneutic context” (Patton, 2002, p.115). With regard to the present study, practical knowledge is active knowledge, and since it is impossible to be in the mind of a practitioner during activity, hermeneutic phenomenological reflection (Van Manen, 1990) focusing on teachers’ experiences of pedagogical reasoning can produce closer contact with the experience as lived (p. 78). Like hermeneutic phenomenology, IPA relies on a double hermeneutic, or double interpretation: the researcher interprets the participants’ attempts to interpret and make sense of their experiences. In this case, my own experiences as a teacher, teacher educator, and collaborator with practicing teachers in the field experiences of preservice teachers, my own phenomenological reflection provides me with a perspective that sensitizes me to the experiences of other teachers.

Interpretive phenomenological analysis locates itself within the discipline of psychology and is one of several closely-related approaches to phenomenological psychology that share a commitment to exploring lived experience but have different approaches to engaging in research projects (Smith & Eatough, 2012). For example, Giorgi’s method of empirical phenomenological inquiry aims at understanding the essential, context-free, underlying structure of a psychological experience (Giorgi, 1997). Rather than focus on the universal essence of an experience, IPA emphasizes idiographic, case study level of analysis. This focus on the individual rather than the universal enables a researcher to make specific statements about individuals who experience a phenomenon, rather than limit description to the phenomenon context-free. This aspect of IPA allows for the focus of studies to be oriented in two directions at once: towards the possibility of learning something from the narrative lifeworlds of the participants who share their stories;
and towards the possibility of learning about general themes across individual experiences of a phenomenon (Smith & Eatough, 2012).

Interpretive phenomenological analysis studies are concerned with issues of significance to the participant either at a critical juncture in his or her life or as something which occurs on an ongoing basis (Smith & Eatough, 2012). An example of a focus on the significance of an event at a critical juncture is Wilde and Murray’s (2009) study of three individuals’ experience of near death and the meaning they attribute to that experience and its after-effects. They employed IPA in order that the single near death experience of the could be analyzed using an idiographic approach and presented in a way that reflected each participant’s story of near death. For example, three themes emerged from the analysis, and the authors discuss each participant case under the heading of each theme. For the first theme, “the day I nearly died: considering NDEs biographically,” the authors discuss the overall theme, then present stories from each participant under the headings, “Jane’s story,” Margaret’s story,” and “Deborah’s story.” This organization allowed the authors to illustrate a common theme through the unique perspective of each participant, given her unique biography. For the remaining two themes, a similar pattern was used to explicate the theme using excerpts from each participant.

Other IPA studies explore ongoing experiences, rather than single events. An example of this is Hefferon & Ollis’s (2006) study of professional dancers’ experience of flow during performance. In this study, Hefferon and Ollis interviewed nine professional dancers on their experience of flow in performance, asking them to reflect on how the ongoing experience of performance occurs for them in order to compare those experiences to the construct of flow using Csikszentmihalyi’s 1975 definition. They employed IPA in order to record the in-depth experience of flow described by her participants, as well as to allow her the ability to determine
similarities and differences among the participant experience, rather than produce an objective statement about the experience itself. Three themes emerged from the IPA, and like Wilde and Murray (2009), H6 and Ollis (2008) presented these themes using participant excerpts to illustrate each. Due to the number of participants, however, they selected only the two or three most salient quotes from the participants, rather than building a story for each of them.

Both of these studies illustrate the idiographic commitment of IPA to the variations in experiences of the participants in addition to what emerges as common across participants’ experiences of a phenomenon. The present study focuses on teachers’ practice from the perspective of their ongoing work as teachers, so like Hefferon and Ollis’s (2006) study of professional dancers’ experience of flow during performance, this study examines teachers’ ongoing experience of pedagogical reasoning. The design of the present study also lent itself to the presentation of data similar to that found in both the Hefferon and Ollis (2006) study of dancers’ flow and the Wilde and Murray (2009) study of experiences with near death: 1) themes that emerged from the data could be illustrated by excerpts from each participant to show commonality and variation within the theme; and 2) because participants recalled specific experiences as they discussed their ongoing experience of pedagogical reasoning, stories about each participant could be built to provide rich illustrations of each experience of the phenomenon.

Additionally, IPA studies can be designed to answer two levels of questions: 1) a central question relating to lived experience of a phenomenon, and 2) a secondary question aimed at a theoretical concern (Smith et al., 2009). This aligns with the goals of this study: to describe the phenomenon of pedagogical reasoning of highly competent teachers; and to determine to what degree the pedagogical reasoning of the participants can be described in terms of professional
phronesis. The goal for data collection was to elicit hermeneutic reflections from participants about their experiences of pedagogical reasoning. These data were analyzed: 1) for themes as they emerged across participants; 2) to explore the ways in which participants’ experiences of practical reasoning reflect phronesis.

**The Researcher and the Researched**

**Role of the researcher.** I have a unique understanding of teaching and teachers because I was first a teacher, and even as I have pursued scholarly work with teachers, it is my experience as a teacher that has afforded me the ability to meld scholarship and research on teaching with the practice of teaching in a meaningful way through my own practice and my work with practitioners. First, while I represent the university as a faculty member in the secondary education teacher preparation program along with theoretical perspectives of scholarship on teaching and teacher education, I am simultaneously a teacher myself. For much of my time as a university liaison to our secondary level partnership school, I was both a practicing secondary teacher and a university teacher-educator. As my scholarship on teaching developed, my new understandings shaped my teaching practice. I became aware of my own pedagogical reasoning at a point in my practice when much of what I did as a teacher was intuitive.

I have a deep personal connection to the phenomenon and the study itself. It is my deep personal connection to my own pedagogical reasoning in practice, my personal expertise that became explicit to me through scholarship, reflections, and joint exploration of this invisible aspect of teaching with other teachers, that inspires my passion for this inquiry. I believe that teaching requires of practitioners more than content knowledge and knowledge of techniques, and I believe that this “something more” resides in the tacit practical knowledge of highly competent teachers. My personal investment in this study is captured in my hope that there may
be a means of elucidating this kind of knowledge so that there may be a shared vocabulary to
describe it, share it, and learn from it.

**Relationship to the site and participants.** As I have worked with the members of our partnership school – teachers, administrators, and staff – I have gained “membership” into their school culture through my work with them as a boundary spanner (Ansett, 2005), both a practitioner and teacher educator, over the course of four years. My relationship as liaison to the school and our jointly conducted partnership activities through these years has provided me the opportunity to develop close relationships with school members of all levels. I have worked in close partnership with faculty members, on numerous occasions over many years through their work as cooperating teachers. As both an intern supervisor and as the facilitator of a weekly professional learning community of the cooperating teachers, I have had many occasions to engage in deep conversations about the teaching and mentoring practices of these cooperating teachers as we work together to facilitate the professional learning of the preservice teachers in our charge. I have presented at a national conference with several teachers and the principal, worked on collaborative manuscripts with others, and engaged in research projects with the administrators and faculty.

My presence at the school is regular, welcomed, and anticipated, as both a resource and a member of a shared mission between the school and the university. Through these engagements over the course of my prolonged engagement with the school and its various members, relationships of mutual trust have developed. This makes me a boundary-spanner, one who lives comfortably in two worlds at once, since I possess a deep understanding the perspectives of both the university teacher preparation program and the realities of practice, both my own and those shared with me by teachers at the school.
The questions guiding this study and the nature of the phenomenon I propose to explore, specifically the tacit knowing involved in the pedagogical reasoning of highly competent teachers, are best answered interpretively by an investigator whose own knowledge about and experience with the phenomenon can inform deeper understanding of the experiences of others through interaction, reflexivity, and interpretation. It is because of my relationship to the phenomenon and the relationships of trust I have developed with other practitioners that the research design, site, and participants for this study have been selected. An objective researcher stance will not be possible, nor is such a stance desirable considering the personal and tacit nature of the phenomenon I seek to explore. I make clear that my personal experiences as a teacher and my knowledge of the participants will inform my interpretation of the participants’ experiences. The hermeneutic nature of IPA acknowledges this relationship and provides a means to capitalize on the reflexivity between the researcher and researched.

**Participants**

The participants I recruited for this study were all teachers at the partnership middle school at which I had served as university liaison for four years. The middle school and the university have a more than 20-year relationship, starting when the middle school opened in 1991 as a professional development school site. I chose to recruit participants at this school site since this my work within the partnership has provided me with access to and knowledge of their practices.

IPA studies, which prioritize depth over breadth, have been published with various sample sizes, from 1-15 or more (Smith & Eatough, 2012). Suggested considerations for how many participants to include in an IPA study are one’s commitment to the case level analysis of data, the richness of individual cases, interest in the ability to compare and contrast cases, and pragmatic restraints. For the purposes of this study, a sample size of three is appropriate to
provide multiple perspectives on the phenomena and allow for an interpretive analysis of constructs and themes, as well as rich idiographic presentations of findings for each participant (Smith et al., 2009; Smith & Eatough, 2012).

Participants for this study were recruited purposively based on my knowledge of their teaching practice as a result of my experiences working with them in various school-university partnership activities. Since guided reflection on and conversation about tacit knowledge is suggested as a viable means of making such knowledge explicit (McAdams, et al., 2007), I sought to recruit three specific participants with whom I believed rich hermeneutic reflection would be possible. Since competence is subjective, participants were recruited based on characteristics that Dreyfus and Dreyfus (1986) Berliner (1994) suggest indicate expert performance. Interpretive phenomenological analysis studies suggest as homogeneous samples, with the main inclusion criteria being an experience with the phenomenon in question, (Smith et al., 2009). Each of the participants who agreed to participate in the study share the following characteristics that serve as the inclusion criteria for this study: 1) at least 10 years of teaching experience; 2) extensive professional development such as advanced degrees and other professional development experiences; and 3) reflective practice habits. I met with participants individually to discuss the study with them and to determine their interest in participation. After obtaining their verbal assent, I sent an email to each participant details about the study as well as the informed consent documents for their review. After allowing the participants to review the informed consent documents, I met with each participant individually to review those documents and obtain their signatures.

Fran is a female who has 28 years of experience as a teacher, 22 of those as a charter member of the partnership school. While Fran has taught a variety of other subjects, she has
consistently taught at least one section of gifted students. At the time of data collection, Fran was teaching both 7th and 8th grade gifted and regular language arts: one section of 7th grade regular, two sections of 7th grade gifted; and two sections of 8th grade gifted. Unique to Fran compared with the other participants is the fact that she cycles up with her 7th grade students into 8th grade, allowing for a two-year relationship with her students.

Melissa has 12 years of teaching experience in language arts, six of those at the middle school level. At the time of data collection she was teaching 8th grade language arts: two sections of advanced, three sections of regular. Of her regular sections, one was an inclusion co-teach class that combined students with learning disabilities with students without learning disabilities and included a co-teacher with a background in exceptional student education (ESE). Another of Melissa’s regular sections was a support-facilitation class, which was also an inclusion class, but with an ESE support facilitator on a periodic basis rather than a full-time ESE co-teacher.

Diane has 16 years of experience as a math teacher, all of which have been at the partnership school site. At the time of data collection, Diane was teaching 8th grade mathematics: four sections of regular math, one section of intensive math. Of her regular sections, one section was an inclusion co-teach class in which students with learning disabilities were combined with students without learning disabilities and included a co-teacher whose background is ESE. Diane was on the same team as Melissa, which indicates that they shared some of the same students across their sections.

**Procedure and Data Collection**

In IPA studies, researchers are “interested in what happens when the everyday flow of lived experiences takes on a particular significance for people,” which usually occurs when something of importance has happened in their lives (Smith et al., 2009, p.1). As a means of examining such
experiences, IPA data collection is usually in the form of, but not limited to, in-depth semi-structured interviews (Smith et al., 2009). The data for the study are 1) in-depth semi-structured interviews (an initial interview followed by a second interview with each participant); and 2) written protocols from each participant.

Because of my relationships with the participants through our mutual work related to developing preservice teachers, our work together in professional learning experiences, and our previous conversations about teaching practice, I utilized hermeneutic phenomenological data collection strategies defined by Van Manen (1990). These methods align with the hermeneutic foundation of IPA and more clearly represent the specific techniques I employed in collecting data. The interviews represented what Van Manen terms a “conversational interview,” and they were vehicles for developing “conversational relation with a partner,” i.e. the interviewee, to gather “experiential narrative material” (p. 66). In addition to two interviews – the initial interview and follow-up interview, participants provided what Van Manen (1990) terms a “lived-experience description” in the form of a written protocol (p. 64). These provided personal accounts of participants’ experiences with the phenomena of pedagogical reasoning that emerged after participating in the initial semi-structured interview, and these served as a starting-point for the second semi-structured interviews.

Data for each participant were collected in the following series of activities: 1) initial interview (See Appendix A); 2) participant written protocol (See Appendix B); 3) second interview to allow participants to discuss the incidents cited in their written accounts in further detail (See Appendix C). I audio-recorded the interviews with the each participant, and I transcribed the interviews verbatim, including my questions and contributions to the conversation. I chose to use both the interview transcripts and the written protocols as data
sources since they both contained the participants’ reflection on their experiences. In addition to the interview transcripts, the written protocols provided an opportunity for participants to extend their reflection on their experiences that emerged in the initial interview.

**Table 1. Exploratory Question 1 (Central Question) and Study Design**

<table>
<thead>
<tr>
<th>Exploratory Question</th>
<th>Data Sources</th>
<th>Data Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) How do highly competent teachers perceive and describe their experience of pedagogical reasoning?</td>
<td>Initial interview</td>
<td>IPA phenomenological analysis (Smith et al., 2009)</td>
</tr>
<tr>
<td></td>
<td>Written Protocol</td>
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<td></td>
<td>Second interview</td>
<td>IPA phenomenological analysis (Smith et al., 2009)</td>
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**Table 2. Exploratory Question 2 (Secondary Question) and Study Design**

<table>
<thead>
<tr>
<th>Exploratory Question</th>
<th>Data Sources</th>
<th>Data Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>2) In what ways can the knowledge highly competent teachers employ in pedagogical reasoning be described in terms of phronesis?</td>
<td>Initial interview</td>
<td>IPA phenomenological analysis (Smith et al., 2009)</td>
</tr>
<tr>
<td></td>
<td>Written Protocol</td>
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<tr>
<td></td>
<td>Second interview</td>
<td>IPA phenomenological analysis (Smith et al., 2009)</td>
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**Interviews.** To elicit participants’ reflection on the phenomenon, I conducted in-depth semi-structured interviews with each participant at two points in time geared at eliciting participants’ personal life stories (Van Manen, 1990) of their experiences engaging in pedagogical reasoning. These interviews were conducted on the school site in the participants’ classrooms during or just after their school day and lasted from approximately 58 – 82 minutes. Interviews in hermeneutic phenomenological human science serve two purposes: 1) to gather a rich and deep understanding of a human phenomenon; and 2) to develop a conversational
relation with a partner, who is the interviewee (Van Manen, 1990, p.66). Depending on the nature of the project, the conversational interview method might be used either of two ways: primarily to gather experiences, or primarily to serve as an occasion to reflect with the partner on the topic (p.66). Given my relationship to the participants and the phenomenon of pedagogical reasoning, the conversational interviews were occasions to gather participants’ lived experiences and to reflect together on the topic. The ability for me to reflect along with the participants on the topic of pedagogical reasoning based on my own experience allowed, as Van Manen (1990) suggests, conversational interviews to turn increasingly hermeneutic and turn participants into collaborators of the research project.

I constructed a semi-structured interview protocol to guide the conversational interviews and set the direction of the interviews. Van Manen (1990) suggests that to collect personal accounts of experience that answer the fundamental research question it is imperative to stay as close to the experience as it is immediately lived. To do so, he suggests researchers engage in conversations with participants beginning with concrete specific instances, situations, people or events that may enable us to explore the experience fully. While I developed the interview protocol prior to the interview, I did not maintain a rigid interview schedule, choosing instead to follow the concerns of the participants (Smith et al., 2009, p. 64). I did, however, establish a pattern of broad questions. For the initial interview, I began with asking each participant to share how she arrived at teaching as a career. These beginnings offered many opportunities to then orient the participant to specific instances related to the phenomenon. For the second interview, I began by reviewing what we had discussed in the previous conversation and asking the participant to talk more about one of the incidents they had reflected on in their written protocol.
The semi-structured interview protocol was oriented toward the fundamental question of what it’s like to pedagogically reason in the act of teaching. This broad question, closely aligned with research question #1, allowed for what Mayan (2009) calls an unstructured interview in which participants share their stories by means of a single “grand tour” question followed by other broad questions (p. 71). However, in addition to probing for more information within the conversations, I also engaged in what Brinkmann (2007) describes as epistemic interviewing by challenging the participants to give reasons for what they did as a means of structuring the conversations by our interpreting together. The following is a verbatim extract from my initial interview with Fran as she reflected on her first teaching experience. This extract illustrates the way in which I confronted her statements and challenged her to provide her reasoning as we interpreted her experience together.

K – What happened when you had boots on the ground? What was that experience? What was that transition like?

F – Well, I think just like any other first year teacher – first day teacher – I literally remember thinking, I don’t know what the hell to do. (Laughs)

K – Not knowing what to do, yeah.

F – I don’t what to do. The kids are coming, and I don’t know to do. I mean, I did.

K – Of course.

F – But, I didn’t. I mean, internship was great. It was phenomenal, but that’s with a safety net.

K – It sounds like to me that you probably couldn’t come to teaching with any more than you had.
F – Right. And I still felt scared and unprepared. But, I was also older. I was 31 when I actually had my classroom here, so I think that helped. I was a parent. I mean, my kid was in my 5th period class. He was 11/12 then. So, I think I approached a lot of it then as a mother. These were kids.

K – So what was important to you then? I mean, thinking about approaching it like a mother.

F – I guess I don’t remember feeling the need to be all regimental like I see some beginning teachers. I don’t remember having to do a lot of authority-enforcing, but I must have, or I probably did. I do remember the first time I realized I didn’t like one of the kids. (Laughs). And feeling like such a loser because I really, I was thinking that I was supposed to like all the kids. I was a teacher for god’s sake! I’d spent all this time.

K – So that was your expectation is that, you know, that teachers love all these children, and that’s important.

F – They do. Right. I mean, I loved my kid. And I clearly remember, and for whatever reason I’ve lost his name over the years, but I clearly remember thinking, I don’t like him. He’s just like – and I did, it’s again one of those lessons I’d learned in SCATT [Sun Coast Area Teacher Training], that whole positive mental set thing, but I remember forcing myself to look for something good in the kid that I could latch onto.

K – Why was that important?

F – Because I didn’t like that I didn’t like him.

K – But why did that matter?

F – I didn’t think I could be a good teacher if I was always looking for the negative in him.
K – So that might have to do with how you define a good a teacher. So how do you, then, now, define a good teacher? What are we supposed to do?

F – One of the phrases we always talked about in SCATT was being the kind of teacher you’d want for your own kids, and being a mother, I knew what that meant. And I’ve said that from time to time to teachers, and they’ve said, well no kid of mine would be … well, maybe not. Another thing was, a professor said, because we used to have a lot of professors, even the first year we were open. They were out here all the time as a PDS, and he said, you know parents are sending us the best they have. They’re not keeping the good ones at home. I loved that, and that was one of those things – those things would literally play in my head when I would be feeling these things. You know, I don’t like this kid, or whatever, and it went back to that positive mental set. So, yes, I think a good teacher finds a way to reach every kid.

K – What does it mean to reach a kid?

F – To, well, it means different things for different kids. It doesn’t’ necessarily mean that the kid’s going to earn the A in your classroom, but the last thing that, I guess the last thing I would want is for, I wouldn’t want a kid to dread coming to my class. I wouldn’t want a kid to, and I think some do initially because they don’t like the subject matter.

K – It’s the subject, yeah.

F – It’s reading, it’s writing. And it’s their least favorite thing.

K – So, is maybe part of it is providing an environment where learning is a positive experience?

F – Or at least just being there is a positive experience. Often with kids the learning itself is, I’ve always, I didn’t invent it, but probably if I had to put my philosophy of teaching
in nutshell, it would be I firmly believe they don’t care how much I know until they know how much I care.

The interview protocols are found in the Appendices.

**Written protocols.** Van Manen (1990) asserts that if we wish to investigate the nature of a human experience, the most straightforward means of gathering such experiences is to ask selected individuals to write their experiences down. He calls this “protocol writing,” or the creation of an original text on which a researcher can work (p. 64). Based on the notion that tacit knowledge remains unconscious and routine until disruptions violate ordinary experience (Schon, 1983), following the initial interviews, I asked the participants to write reflections of at least two incidents in their practice when they recall experiencing a disruption to their ordinary or anticipated routine. I invited participants to describe their experience of pedagogical reasoning in those situations for the purpose of bringing their tacit knowledge of practice to the surface so that it could be made explicit. These written reflections acted as a compliment to the interview data by providing another representation of the participants’ experience with the phenomena in their own words directed by their own identification of specific events as examples of their experience (Van Manen, 1990). These written protocols enhanced the analysis of the phenomenon from the perspective of the participant and contributed to the voice of the participant in understanding pedagogical reasoning. For example, in Melissa’s first interview, she described her goals for student learning in terms of helping students “transcend” the basic acquisition of lesson content to become “genuine learners” and leave her classroom “a better person.” In her written protocol, which she composed following that interview, she included a specific example of how she designed lessons in order to accomplish this goal.
During this unit lesson, I decided to tie the skill based writing lessons to a specific topic that would be both high interest and exciting to teach. I used social skills as a central theme to teach my lesson around. The goal of the social issues lesson was to expose students to the various issues teens, community, and world brush up against. Also, instilling the idea of tolerance as a way to be more accepting of a global world was central. I felt that learning about social issues, bullying, teenage pregnancy, sexuality, homelessness, world hunger, etc., reinforced developing a classroom community where students felt safe sharing their experiences and as a result were willing to take more risks with their writing. (written protocol)

In this way, the written protocols allowed participants the opportunity to reflect in solitude and provide rich examples of their experience. As such, the written protocols provided data on the participant experiences as well as enhanced the interpretation of the interview data.

At the conclusion of each initial interview, I explained the written protocol procedure to each participant and encouraged each to continue to think about further examples of how she had experienced her pedagogical reasoning. I followed this verbal explanation with an email, which included written participant instructions (See Appendix C). The instructions did not suggest a particular format for the written protocol; rather participants were encouraged to use whatever format felt the most natural to them. While I suggested that the participants spend no more than an hour composing the narrative, the time the participants actually spent is unknown. Two participants chose to compose lengthy and detailed narrative accounts of their experiences, each submitting six typed pages of text. The other participant chose to submit a single bullet-style page of thoughts.
Researcher Reflective Journal

In IPA research, the fore-structure of our understanding reflects what Heidegger (1927/1962) called fore-conceptions, (prior experiences, assumptions, presuppositions). Smith, et al. (2009) note that such fore-structures are always present prior to acts of interpretation, but may only be understood after having engaged with a text or experiences, and as such, reflection on these understandings connects bracketing to reflexive practices. Reflexivity is the process of being highly attuned to how and why a researcher makes decisions and interpretations throughout a study to critically examine the personal-researcher role and how it relates to all aspects of the research (Mayan, 2009). In order to remain aware of the ways my own fore-structures informed the research process, I recorded my thoughts, concerns, and developing interpretations prior to collecting data, during data collection, and during data analysis.

I maintained two separate research journals. I documented my thoughts about the research process, initial interpretations of the participants’ experiences, questions that emerged from interview to interview during data collection in my primary research journal. I also included audio-recorded memos that I took after each interview that captured these thoughts as well. During data analysis, I recorded my reflexive thoughts about my role in the research, my emerging interpretations of the data, as well as initial codes and themes for each participant. During the initial stages of analysis, as I made analytical notes on the first transcript, I began to notice myself thinking ahead to connections between the data from the transcript in front of me and the data I recalled from the other participants that I had transcribed, but not yet analyzed. I attempted to off-load those thoughts into a notebook that I kept next to me as I worked with the transcripts. This notebook became a means for me to think through each individual transcript in relationship to the other data, document some early categories that would inform the
interpretation of the emerging themes, and reflect on the transcript data in light of the literature regarding the constructs of pedagogical reasoning and professional phronesis. In this way, I didn’t lose these ideas by forcing myself to ignore them; however, by purging them, I was able to quiet my mind and return to the analysis of each transcript with the ability to focus on the experience of that participant. During data analysis, I began each session by re-reading what I had previously recorded in my research journal, then recording new thoughts, ideas, questions, or concerns that emerged since that time. Both journals were essential to my research process, particularly my analytical process. I often found myself returning to my reflective journals to once again find myself within the research journey. An extract from my researcher reflective journal can be found in Appendix D.

Data Analysis

The data analysis process I used to answer research question #1 followed the six steps of IPA as outlined by Smith et al. (2009). I began by organizing the recorded interview and personal narrative data into hermeneutic units by participant. Since the number of participants was manageable, I treated each hermeneutic unit as an individual case. This became important in later stages of the analysis because it allowed me to identify connections across participant experiences as well as new or contradictory experiences. I then transcribed the recorded interview data for each hermeneutic unit verbatim, including my questions and contributions to the conversation. The goal for transcription was to learn about the participants’ particular experiences of pedagogical reasoning. Following the IPA recommendation for transcription, I formatted the transcripts to include wide margins for note taking and documentation of emerging themes. Once all data were transcribed, I determined the order in which I would analyze the hermeneutic units. I chose to analyze the data in the order that the initial interview data were
collected and subsequently transcribed. I based this choice on my recognition of the hermeneutic circle and the hermeneutic fore-structures that I brought to each interview (Smith et al., 2009). I was aware that my thinking about the phenomenon had been influenced by each interaction with each participant: between the first and second interviews, and from one participant to the next. As such, it seemed appropriate to analyze the participant data in the order in which they were collected and transcribed so that the hermeneutic circle was ordered consistently at the analysis stage with the data collection stage. Given that transcription itself is a form of interpretive activity (Smith et al., 2009), and considering my deep engagement with the data during transcription, I found it helpful to record my thoughts, recollections from the interviews, and my initial observations of the data in a research journal separate from my reflexive journal. This journal enabled me to capture and temporarily bracket my initial interpretations of the data as they emerged at this early stage and maintain my focus on the transcription process.

**Six Steps of Analysis**

Once all interviews were transcribed I began the first stage of IPA analysis: *reading and rereading* the transcript; however, the first stage of analysis merged with the second stage: *initial noting*. As I read, I used the right hand margin to annotate anything that I considered interesting or significant about what the participant said. I completed the initial reading in the spirit of free textual analysis, which Smith and Osborn (2008) suggest allows one to become as familiar with the participant account as possible. As I began to make notes on the transcript, I recognized that the notes were descriptive, linguistic, and conceptual in nature. For example, like Smith and Osborn (2008) suggest, some comments were attempts to summarize or paraphrase, some were associations and connections that came to mind, some were preliminary interpretations. Other comments were about the language that the participants used to describe their experience, as well
as similarities, differences, and even contradictions in what the participants said. It became
evident that the research journal I had begun during transcription was again necessary to record
thoughts and ideas that might be relevant in later stages of analysis, so that I could bracket these
thoughts (Smith et al., 2009) for the time being and focus on the participant data at hand. The
second reading served to enhance, deepen and clarify the notes made in the first reading, thereby
generating more interpretive notes from which broad categories and theme titles began to
emerge. Through the early stages of the analysis process, as I read and reread each hermeneutic
unit, I naturally moved from the first to third stage: developing emergent themes. In this stage, I
worked from my own analytical notes rather than the transcripts in order to reduce to volume of
detail while recognizing patterns, connections, and interrelations among the notes. As Smith et
al. (2009) suggest, I transformed my initial notes into concise phrases that captured the essence
of what was found in the text, and I listed these on in a Microsoft Word document. These phrases
were grouped the themes categorically rather than chronologically as they appeared in the
transcript. While I had fully intended to utilize Atlas.ti to facilitate my analysis of the data, I
found that after having followed the recommendation of Smith et al. to create wide margins on
the transcripts and use them to make manual notes during reading and rereading of the data, I had
missed the point in the analysis process at which Atlas.ti would be beneficial. After I had
generated a categorical list of themes within first hermeneutic unit, I moved to stage four,
searching for connections across themes, I decided to load the hermeneutic data into Atlas.ti to
then code the transcripts using the categorical themes. When and I attempted to code the
transcript, I found the process of analysis was already too progressed for the software to be
helpful. Smith et al. (2009) note that while qualitative analysis software can save time for the
analyst at early stages of data analysis, it can pose problems in later stages. I found this to be true for my own analysis process, so I abandoned Atlas.ti and moved on with stage four.

In the fourth stage, I worked to reorder the codes and themes from the chronological order of the transcript into a categorical organization. This step involved combining codes from the initial and follow-up interviews as well as the written protocols into a single list of emergent themes. Through this process, I assigned codes to themes and removed codes that were not significant to the overall experience of pedagogical reasoning. That is to say that while the participants discussed their pedagogical reasoning, they also discussed other aspects of their teaching experience as well as their beliefs about teaching and education at large. During this forth stage of analysis, I eliminated any themes that did not answer the research question. Likewise, similarities among codes often required collapsing them in to a single theme. For example, initial coding included separate codes for “learning to teach” and “professional development” in which the participant described the how her pedagogical reasoning had evolved over time. These two codes were collapsed into the one theme: “Pedagogical reasoning develops over time through experience.” Through this reductive process, I generated a list of superordinate themes for the first participant. I then moved to stage five: moving to the next case, and I began my close reading and rereading of the second hermeneutic unit. I completed the same steps for the two remaining participants before moving on to stage six: looking for patterns across cases. At the sixth stage of the analysis, I engaged in a similar reductive process to determine which themes were relevant to all three participants and further collapse related themes in to superordinate themes and subthemes across cases.
In order to answer Question 2, following the analysis of the phenomenon to understand the participants’ experiences of their pedagogical reasoning, I then analyzed the superordinate themes to determine in what ways, if any, the experiences described by the participants with regard to pedagogical reasoning might be explained by the construct professional phronesis. To facilitate this, I created a matrix of the superordinate themes and subthemes and the features of professional phronesis. The features of pedagogical reasoning were represented by the themes and subthemes that resulted from the first-order analysis of participant hermeneutic data. The features of professional phronesis were adapted from a review by editors Kinsella and Pitman (2012b) of the suggested features of professional phronesis by contributing authors of the text *Phronesis as Practical Knowledge: Practical Wisdom in the Professions* (2012). On the matrix used to compare the constructs of pedagogical reasoning and professional phronesis, I marked with an X any box which represented an intersection between both constructs that was substantiated by participant data. For example, for the feature of professional phronesis that it is “informed by one’s history and experience,” within the superordinate theme 1, “Pedagogical
reasoning develops over time with experience,” I marked both subthemes, “professional
development experiences” and “identifying and solving problems of practice,” as intersections. I
did not mark as intersections with this feature of professional phronesis superordinate theme 2
because the data did not support a relationship between professional phronesis as informed by
experience and the operational modes of pedagogical reasoning (superordinate theme 2). That is
not to say that there is no relationship among these specific aspects of the constructs; however,
only relationships that could be substantiated by participant data were marked.

Due to the complexity of both the phenomenon of pedagogical reasoning and the construct
professional phronesis, I chose to present stories from each participant experience to provide rich
descriptions of the phenomenon of pedagogical reasoning as illustrations of professional
phronesis.

**Ethical Considerations**

All three participants agreed to participate in this dissertation research study. The study
proposal was be reviewed by the university’s Institutional Review Board (IRB). In the current
dissertation and in any subsequent publications, participant confidentiality will be maintained by
assigning non-identifying pseudonyms.

**Credibility and Trustworthiness**

The concept of rigor within qualitative research demonstrates how and why through
methodology the findings of a particular inquiry are worthy of attention (Mayan, 2009). In order
to demonstrate a commitment to rigor, I built into the study strategies that answer Ballinger’s
(2006) criteria: coherence, evidence of systematic and careful research conduct, convincing and
relevant interpretation, and sensitivity to the role played by the researcher. With respect to
coherence, I selected IPA as the research method because in additions to its suitability in
answering the research questions, the method also fit with my interpretive and constructivist frame. With respect to evidence of systematic and careful research conduct, I made every attempt to be transparent about my thinking and decision making throughout the process of data collection and analysis. In presenting the findings, I attempted to create a convincing and relevant interpretation of the participants’ experiences by including verbatim excerpts of the transcripts to substantiate and illustrate my interpretations. I maintained sensitivity to my role as the researcher during both data collection and analysis. Phenomenological analysis requires a starting point, and that point is the researchers’ own relationship to the phenomena under investigation (Van Manen, 1990; Moustakas, 1994). Due to my relationship to the phenomena as a former teacher, a teacher educator, a university liaison to the research site, my relationship with the participants, and my own perceptions of teacher practical reasoning, I acknowledge that my relationship to the participants and the school partnership may be construed as biased. Due to my embeddedness in the context over many years, which reflects prolonged engagement in the field (Creswell, 2007), I did not attempt to wholly bracket out or set aside my own experience to see the phenomenon as if for the first time (Moustakas, 1994). My transparency regarding my relationship to the topic, participants, research site, and my own perceptions of the phenomena were useful my interpretation of the data and contributed to the intersubjective quality of the hermeneutic circle (Van Manen, 1990). Kaler and Beres (2010) assert that in qualitative research, a researcher’s relationship to the field of inquiry as an insider can enhance rather than contaminate the researcher’s ability to make appropriate interpretations of the data. Additionally, the double hermeneutic employed in IPA research accommodates both the participants’ interpretations if their experiences as well as the researchers interpretation of the participants’ sense making. I also maintained two researcher reflective journals to document and make
transparent my thoughts, concerns and questions as well as the way my presuppositions became aware to me through analysis. Finally, I invited feedback from the participants after the interviews were transcribed, and after the initial analysis resulted in themes. While I was interested in receiving their feedback, due to my relativist perspective and role in the hermeneutic circle, as well as our collaborative interpretation of the participants’ experiences during our interviews, I did not seek substantive feedback from the participants on the findings.

**Conclusion**

In this chapter, I described the research design of the study with IPA as the research methodology. I provided a rationale for choosing IPA as the methodology, including a discussion of they ways IPA fits within the interpretive framework of the study. I explained how I used IPA to examine the participants’ experiences of pedagogical reasoning as well as how the features of those experiences reflect the construct professional phronesis. I followed the six-step process of data analysis set out by Smith et al. (2009), which resulted in the emergence of three superordinate themes and eight nested subthemes.

In the next chapter, Chapter Four, I present the results of the interpretive phenomenological analysis in two parts. In the first section, I present the three superordinate themes and the eight subthemes emerged from the cross-case analysis of the rich data provided by the participants regarding their pedagogical reasoning (research question #1). In the second section, I present the six traits of professional phronesis adapted from Kinsella & Pitman (2012b). Given these features, I then compared these six traits of professional phronesis to the features of pedagogical reasoning that emerged from the participant data. Following a discussion of the intersections between the features of professional phronesis and pedagogical reasoning, I presented three illustrations of pedagogical reasoning in terms of phronesis in the form of individual narratives.
based on stories shared by each of the participants. While the selection of themes and the excerpts that illustrate them are the result of interpretive analysis, I withheld interpretation of the data in light of the literature discussed in Chapter Two. In Chapter Five, I will take up the discussion of the data in terms of the literature to provide insights into the ways in which the data brings new understandings and interpretations.
Chapter Four

Results

Purpose of the Study

The purpose of this inquiry was to gain a deeper understanding of how highly competent teachers experience their pedagogical reasoning and the ways in which their experiences might be described in terms of professional phronesis. The findings of this study provide insight into teacher knowledge from the perspective of teachers themselves within the lived context of practice. Additionally, this study provides illustrations of professional phronesis, and as such, provides examples of and vocabulary for the often tacit practical knowledge of highly competent teachers.

Research Questions

The research questions guiding this study provided the opportunity to investigate two related lines of inquiry as reflected in the purpose of the study.

1) How do highly competent teachers perceive and describe their experience of pedagogical reasoning?

This first-order, primary research question is directed towards exploring the phenomenon of pedagogical reasoning, specifically of highly competent teachers. To answer this question, I focused on the participants’ understanding of their own experiences as knowers and doers as they engage in their work.

2) In what ways can the knowledge highly competent teachers employ in pedagogical reasoning be described in terms of phronesis?
This second-order questions focuses on exploring the fit between the participants’ understandings of their experiences with the construct of professional phronesis (Kinsella & Pitman, 2012b). This second-order question assumes a possible theoretical relationship between pedagogical reasoning and professional phronesis. Such a question may only be answered at an interpretive level of analysis grounded in the phenomenological account, which had to be established as a result of the first-order line of inquiry (Smith et al., 2009). To answer this question, I examined the thematic descriptions of the phenomenon provided by the participants for evidence of professional phronesis as defined by Kinsella and Pitman (2012b).

**Overview of the Chapter**

In this chapter, I present the results of the interpretive phenomenological analysis described in Chapter Three. In order to address both research questions, I have chosen an organizational structure that first presents findings for research question 1: three superordinate themes across cases (case within theme); and second, presents findings for research question 2: illustrations of the phenomenon of pedagogical reasoning as examples of professional phronesis from each participant’s experience (themes within case). In the first section, I provide an overview of each superordinate theme and detail the features of each subtheme, followed by interpretive narrative accounts of the nested subthemes, which include illustrative extracts from each participant (see Table 3 below). In the second section, I present the three participant cases in more depth to: 1) provide background information for each participant, enabling the reader to understand the contextual factors that contributed to the meanings made by each participant; 2) allow the reader to more clearly understand the relationships among the superordinate themes with regard to the phenomenon; and 3) illustrate the ways in which the phenomenon can be described by the construct professional phronesis as described in the literature.
Table 3. Superordinate themes and subthemes of highly qualified teachers’ experience of pedagogical reasoning.

<table>
<thead>
<tr>
<th>Superordinate Theme</th>
<th>Subthemes</th>
</tr>
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<tbody>
<tr>
<td>Superordinate Theme 1: Pedagogical reasoning develops over time through experiences</td>
<td>Subtheme 1: Pedagogical reasoning develops over time by means of professional development experiences</td>
</tr>
<tr>
<td></td>
<td>Subtheme 2: Pedagogical reasoning develops over time by identifying problems of practice through purposeful reflection and problem solving</td>
</tr>
<tr>
<td>Superordinate Theme 2: Pedagogical reasoning is constant and operates in instructional decision making in two distinct modes: deliberate and spontaneous</td>
<td>Subtheme 1: Pedagogical reasoning as deliberate decision-making</td>
</tr>
<tr>
<td></td>
<td>Subtheme 2: Pedagogical reasoning as spontaneous decision-making</td>
</tr>
<tr>
<td>Superordinate Theme 3: Pedagogical reasoning is oriented towards achieving multiple goals at once</td>
<td>Subtheme 1: Pedagogical reasoning is oriented towards goals for students beyond the acquisition of discipline-specific knowledge</td>
</tr>
<tr>
<td></td>
<td>Subtheme 2: Pedagogical reasoning is oriented towards goals for self in terms of one’s role in student learning</td>
</tr>
<tr>
<td></td>
<td>Subtheme 3: Pedagogical reasoning is related to individual personal and professional identity</td>
</tr>
<tr>
<td></td>
<td>Subtheme 4: Pedagogical reasoning is oriented towards developing relationships with students in order to understand specific learner characteristics and needs and earn student trust</td>
</tr>
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</table>

Pedagogical Reasoning Develops over Time through Experiences (Superordinate Theme 1)

The analysis of data revealed that a major feature of pedagogical reasoning of the participants was the experiential nature of its continuous development over time. We are all familiar with the adage, “Experience is the best teacher;” however, for the participants in this
Each participant discussed her experience of pedagogical reasoning by reflecting on the evolution of her thinking about teaching over the course of her career. In order to provide a frame of reference for their current thinking, participants located their current experiences within the context of a professional history. Melissa recalled, “I remember in early years working on timing…whereas now, it’s almost automatic” (interview #1). This type of change over time was attributed to two types of experiences: participation in specific professional development experiences like graduate studies, and identifying and working to solve problems of practice.

Pedagogical reasoning develops over time by means of professional development experiences (Subtheme 1). The participants in this study all pointed to traditional teacher professional development experiences as important to the growth of their pedagogical reasoning over time. This is not surprising considering that two of the participants at the time of data collection held a master’s degree and one participant was preparing to graduate from her master’s program that semester. While teacher preparation had provided for each a starting point, focused professional development experiences such as graduate work, teacher summer institutes, and Nation Board Certification served to catalyze their thinking about their practice in conjunction with their experiences as classroom teachers. Given that a master’s degree is not required to hold a teaching certificate in the state in which the study was conducted, their pursuits of an advanced degree while remaining in the classroom indicates a desire to improve in their practice by following traditional routes to professional growth for practicing teachers.

Diane suggested that her participation in a masters program served as a mechanism by which her pedagogical reasoning flourished after nine years of teaching. “It was not one single
thing, it was just everything kind of coming together…through the masters program” (Diane, Interview #1). For Melissa, the importance of professional development had to do a commitment to continued growth, “constantly pushing forward in reading of journals and taking courses not to become static; to continue yourself as a learner.” The motivation to “push forward” caused Melissa to seek meaningful learning opportunities. She credited a summer institute with being “very pivotal in transforming my thoughts.” She shared:

While I already subscribed to the idea of being more focused on students and serving as a facilitator as a ‘curriculum ideology’…I really saw the beauty of that shift that everyone comes in a writer. Having someone tell me that I’m a writer, and seeing myself as a writer caused me to be a better writer. Same for the kids. (Melissa, interview #1)

Having experienced meaningful learning, she desired to replicate her own learning experience for her students, indicating an even deeper ideological shift than the one to which she previously subscribed. For Fran, professional development was a large part of her professional history, having been employed as a teacher trainer after earning her bachelors degree, becoming a district trainer for gifted endorsement, and eventually earning her National Board Certification. Her extensive background as a participant in and trainer for professional development throughout the course of her career became an essential part of her professional identity:

I know I would be a totally different teacher if I had not had those key things in my development, and I’ve continued in all of them to grow and build. Those are very key parts to who I am as a teacher and how I operate. (Fran, Interview #1)

Returning to the primary research question, the participants described how their pedagogical reasoning improved over time as a result of their participation in purposeful and self-selected professional development experiences. Pedagogical reasoning, it seems, develops as
a result of traditional teacher professional learning experiences where the learning goals are set out by a curriculum. These learning experiences provide practitioners with opportunities to move forward intentionally in their professional knowledge, catalyze their thinking about classroom experiences, and to shape their professional identity.

**Pedagogical reasoning develops over time through identifying problems of practice through purposeful reflection and problem solving (Subtheme 2).**

In addition to professional development experiences, a distinct pattern across cases emerged as the participants described the ongoing nature of the development of their pedagogical reasoning as a function of problem solving. All participants described their pedagogical reasoning in terms of working to solve problems they identified in their practice through a cycle of purposeful reflection, followed by action steps intended to produce desired student learning outcomes. The ability to reflect and the awareness necessary to identify problems of practice developed out of a desire to improve their practice. Melissa related her desire for student success to her desire to become “that better teacher, developing the ability to identify things that need to be changed, then push for that change” (interview #2) She continued:

> Those things that are awareness…developed over time. I just remembered time management, like lessons where I would come up against failures or challenges…and the lesson wouldn’t have gone how I wanted it to go, and there’d be these gaps of time. And then it would be like, okay, why did that happen? What do I need to change? And so that just doesn’t happen…you know, after twelve years of teaching. There’s a lot of thought behind it. There’s a lot of coming up against failures and challenges and things you come up against where you have to adjust and reflect, and just try to work to change to get better.
Melissa acknowledged that experience alone wasn’t enough to produce growth in her thinking about instruction; rather, through a more heightened awareness of instructional problems, and an ability to reflect and adjust, she learned how to find solutions to those problems and improve her practice over time.

Diane described her pedagogical reasoning as thinking framed by problem solving. “It’s just problem solving,” she noted, “I problem solve.” This problem solving frame was evident in her description of a particular teaching experience:

Through teaching summer school one year…teaching the intensive math group, I remember that I was kind of jolted in the sense that when we were going through the lessons, I was like, oh – they’ve got it. Why was there a disconnect between what they are able to do here with me and how they perform on their tests and on their standardized assessments? Because there obviously was one. I’m like, these kids are not challenged or have major deficits. You know, the things you normally think about with struggling learners. And I’m like, what am I missing here? (Diane, interview #1)

Her awareness of her students allowed Diane to detect a discrepancy between how they performed in class versus how they performed on the standardized test, prompting her to figure out the reason the discrepancy. She eliminated the students themselves as the variable prohibiting their success, noting that they did not have the kind of deficits she might normally see in students labeled struggling. An intimate knowledge of her students and an awareness of their abilities allowed her to perceive the gap she noted between their classroom and testing performance. Her algebraic thinking shows that she has the ability to solve for x based on her knowledge of the other variables she identifies. The solution to her problem was realized in a school-based teacher training, linking her learning through problem solving to her learning through professional
development: “The more that I worked with my intensive math class, the more I realized that they could do the math, but over the long term, they didn’t believe they could do the math. It was that self-defeating” (Interview #1). Recognizing the students’ lack of confidence, she was struck by something she read in the training materials she received through a district wide teacher professional development:

It was almost like blurb almost to be overlooked. It broke down achievement, and it said 50% of achievement is self-confidence and self-efficacy, 25% is learning strategies, and the other 25% is ability. And so, my goal over the last few years has been to work on building that confidence because if they have that confidence combined with the strategies, they can be successful. (Interview #1)

As a result of her problem solving, combined with her engagement in a district training, Diane changed the way that she planned for and engaged in instruction with her intensive students to build their self-confidence in mathematics.

Both Melissa and Diane experienced their pedagogical reasoning as problem solving in that over time they were able to identify more of what students needed based on critical reflection about what was or was not working for their students. This led to engagement in problem solving activities, which include seeking new approaches or strategies for solving the problem, which then results in teachers experimenting to find what might work as a solution for their students. Fran, however, experienced pedagogical reasoning as problem solving in a slightly different way.

Fran seemed to perceive fewer problems of practice after her 27 years of teaching. While the problems she identified were fewer, and seemed overall less problematic, she was
nonetheless aware of problems of practice, and endeavored to find solutions. For example, she began to notice her students were coming to her without basic knowledge of grammar:

It dawned on me last year that all my talk within the vocabulary program about this being a noun, that being a verb - they were just giving me the head-shake. There was nothing going on upstairs as far as them knowing what kind of word went into that blank. That was no longer helping them figure out the vocabulary, the part of speech. (Fran, interview #1)

Her realization that the students didn’t know basic parts of speech forced her to come to terms with a deeply held belief that she formed as a result of a professional development experience:

My writing project training says you don’t teach grammar in isolation, and I believe that 100%. But I also know that at some point, you’ve got to do some direct teaching of the terminology, or you can’t have a decent conversation about revision. (Fran, interview #1)

Interestingly, Fran’s belief that grammar instruction can’t be taught in isolation, a belief she adopted as a result of a professional development experience, was challenged by the problem she identified in her students. Going against her own belief, she attempted a possible solution to the problem:

I actually went back to some direct teaching of grammar this year, and it’s been hurting us. It’s been hurting our heads a lot, and I’ve been learning about how to do that and better ways to do it.

Her problem solving frame allowed her to challenge her own belief about effective grammar instruction, and that frame continued to guide her thinking as she attempted a teaching strategy that she doesn’t really believe in. However, because the students’ lack of grammar skills prohibited their success in other areas of the curriculum, such as vocabulary and writing, she
decided to make an attempt to fill the gap she identified while continuing to reflect on ways to improve it.

In summary, a central feature of pedagogical reasoning described by all three participants is the ongoing nature of its development over time. Participants reflected on the evolution of their pedagogical reasoning as influenced by two types of professional learning: traditional teacher professional development experiences such as graduate course work, teacher institutes, and district training; and problem solving to find solutions to problems of practice they identified themselves. In some instances, their own problem solving efforts led them to traditional professional development, while in others cases, the traditional professional development enabled them to identify problems within their practice. Their engagement in both types of learning experiences was a result of their desire to improve their practice, and as a result, shaped their pedagogical reasoning over time.

**Pedagogical Reasoning is Constant and Operates in Two Distinct Modes: Deliberate and Spontaneous (Superordinate Theme 2)**

All participants described their pedagogical reasoning as constant, even outside of their work context. Melissa explained this in terms of her consistent desire to make learning clearer to students:

> It never stops…I’ll be at home, and then I’ll think, just with that, it’s not even conscious thing, that desire to constantly make connections with what they’re learning, how you’re breaking it down, what you need to do next, what would connect even deeper. Like right now, we’re in the Holocaust unit, and…they’re struggling because I decided to show them a chapter of *Mein Kampf* on propaganda. So, I’m like, alright, how the heck am I going to (laughs), how the hell am I going to get them to understand this? And then, I was
at home folding laundry, and it was like, oh, I’ll show them a video clip, the discovery video on Mein Kampf. (interview #1)

For her, the goal of providing a clear message to her students caused her to engage in pedagogical reasoning even as she completed household chores. Fran described the constancy of her pedagogical reasoning, as well:

Sometimes I can’t enjoy a damn book when I read for fun. It’s like, ooh, if I could teach this one to the kids, what would it be? And the next thing you know, I’m off in my head making lesson plans. Everything becomes fodder, if you will, or a new way of thinking about a kid I have, or back here in the classroom, and it’s like I can’t, I don’t think I can turn it off. (interview #1)

While the constancy of their pedagogical reasoning emerged as a pattern across all cases, it became clear that this thinking operated in two distinct modes relating to thinking during instruction and thinking in preparation for instruction.

**Pedagogical reasoning as deliberate decision-making (Subtheme 1).** Participants described the deliberate nature of their pedagogical reasoning with regard to preparation for instruction. This mode operated in the form of lesson planning and included decisions about materials to use, strategies to employ in lessons, the timing and sequence of activities, and what Melissa called the “nuts and bolts and organizational part of teaching” (interview #1). For all participants, deliberate pedagogical reasoning required the time to step back, reflect on previous instruction, and look forward to future instruction while considering specific student learning needs. Melissa described the nature of her deliberate pedagogical reasoning:

I think that because when you have that quiet moment and you step away and you are kind of reflecting back and thinking forward, and no one’s…bombarding you in any way,
then you can really sort of go outside of the box and problem solve and think what would work and kind of go through that process. If I’m about to teach something, then I’ll physically sit down and kind of hash it out. (Melissa, interview #1)

This hashing out involved physically sitting with her teaching materials and a calendar to deliberate over variables such as student background knowledge to determine a starting point, the time she could afford to spend on lessons, and what materials she would need to support the learning goals. Reflecting the problem-solving frame for the development of pedagogical reasoning, Melissa points out that part of deliberate pedagogical reasoning is problem-solving as a result of reflection on prior teaching experiences. During our interview, she shared with me an example of the calendar she was currently working with to plan the next unit of instruction. I noticed that she had earmarked several days for frontloading, a term she used to describe the kind of background knowledge her students would need to be able to understand the historical and cultural context of the novel she was preparing to teach. She explained that she had collected data on student background knowledge of the unit topic earlier in the semester in the form of a questionnaire. When I asked her why she then designated several days for frontloading that on the calendar, she responded:

Based on their utter lack of knowledge about the material, meaning, okay, this isn’t something I can just gloss over in a day or two, knowing that FCAT testing is coming up, so some of it’s organizational. Like how many weeks do I have that I can teach this? This FCAT test is coming up, so clearly, I don’t want to begin something, and then the have a whole week where we can’t touch on it. (Melissa, interview #1)

Part of the deliberate nature of pedagogical reasoning involves accounting for such things as ascertaining the level of students’ background knowledge, the time available for instruction, and
other factors that might influence the pace of the delivery, such as the timing of the state
standardized test.

Ample time to engage in planning activities emerged as an aspect of deliberate
pedagogical reasoning. In order to be able to create seamless classroom instruction that meets the
needs of different groups of students, Diane described the necessity of extended time to do so.

Because it’s like you start all over…not in terms of practice, but in terms of that planning
and looking at the big picture of, okay, I’ve got to get from here to there. That requires so
much time, and the content in a sense doesn’t change, but it’s the way you have to come
at it changes. It’s a different level to know that big picture and to know, okay, when I
start here, there is where I need to get, I only know that by spending time with the content
and thinking and planning, and oh, okay, I see how this is coming together. And I think
ahead so that it’s seamless in here. The kids don’t know that I may spend 4 or 5 hours on
a Saturday trying to make sure everything is going to flow the way it needs to. It took me
time, but the time I save in class is more valuable. (Diane, interview #2)

Diane notes that while the content itself doesn’t change much year to year, her approach each
year must change to meet the specific needs of her students. For her to create the kinds of lessons
that would result in seamless instruction, Diane requires time to deliberate about the content and
how she should approach delivering instruction related to that content. Putting in long hours on
the weekend was, for Diane, something that would pay off as time saved during classroom
instruction. Again, in addition to the often deliberate nature of pedagogical reasoning, Diane’s
anticipation of problems in instruction reflects the problem-solving frame of pedagogical
reasoning. Diane called this aspect of deliberate pedagogical reasoning her attempt to anticipate
barriers. She explains:
You start to make assumptions based on, okay, well, they had trouble with this before. Let me tweak that. Let me add this in. Okay, now I’ve got it. And then each time you do a particular lesson, or teach a topic, you try to anticipate all those barriers, although you never can. (interview #1)

Diane uses her knowledge of her students’ previous struggles to make adjustments to her plans in an effort to anticipate and eliminate barriers to their learning.

For Fran, like Diane, deliberate pedagogical reasoning also requires time to develop a personal knowledge of the material itself and create meaningful lessons based on that personal knowledge.

I don’t have time to recreate a curriculum every year. I need the chance to create. I’m starting with the 7th graders tomorrow The Last Book in the Universe. This is a book I’ve taught multiple times. I can do a much better, richer job matching these kids with this book and the experience of this book, and I’m helping them uncover the layers of this book because I’ve taught it before. Because I know the book, I know what’s coming in this book, I know the characters, I love this book, I have a great passion for this book, and I have activities already designed and ready to go with this book. I’m also starting To Kill a Mockingbird. I haven’t taught To Kill a Mockingbird. So, we’re going to read the book, and we’re going to enjoy the book, and I’ve got some background, but they are not going to get the experience with the book that next years’ 8th graders are going to get with the book because I have to develop that. I need a plan, I need an overview. I can’t do the whole year on exploratory mode. I don’t have that kind of energy anymore, that kind of patience with myself, and I demand more of me. And you know there are lots of times
I’m so tired I go, could I just give myself permission to phone it in one day or two and not give them 110%? (interview #1)

Fran’s years of teaching the same novel has allowed her to test and develop methods of teaching that novel that allow her to match her students with what she considers to be a deeper and more meaningful experience with the book. She contrasts this scenario with teaching a novel for the first time, a situation that for Fran requires time not only for her to develop lessons, but for her to develop a deeper personal knowledge of the text so that she can help students uncover layers of the experience that might be significant to them. Fran points to the need for extended time to create the kind of meaningful student experiences that she values, and she indicates frustration and even guilt for feeling exhausted by the demands of planning for instruction as well as frustration over a lack of time to engage in deliberate pedagogical reasoning. Teaching a new novel comes with the cost of a less meaningful experience for both her and her students given that her own experiences with the material has not yet developed through her experiences teaching it. This deliberate mode of pedagogical reasoning requires time to think, reflect, and plan; time to develop a personal knowledge of materials; time to test teaching strategies that deepen the richness of students’ experience with the material; and the energy to engage in it through what Fran terms exploratory mode. Similar to Diane’s attempt to anticipate barriers, Fran’s exploratory mode is deliberate in that Fran goes into teaching something for the first time with the understanding that she needs to learn from that initial experience, which indicates a link to Fran’s problem-solving frame through which her pedagogical reasoning develops. She explains:

I’ve got to develop that, learn from the mistakes with them. I’ve not done it with a group of 8th graders before, so I’m not entirely certain at this moment in time where their
misperceptions are going to happen. Where they’re going to love it, hate it, live with it, not live with it, get it, not get it, at this time. So, I’m literally going in exploratory mode.

(interview #1)

Fran is deliberate in her plans to enter exploratory mode as she teaches a new novel for the first time, which reveals her awareness that the instruction will be problematic in ways that she cannot yet anticipate with confidence. This awareness readies her to perceive problems as they arise and learn from them so that, like Diane, she can anticipate barriers to students’ learning and make adjustments to improve her instruction when next she teaches the material in the future.

**Pedagogical reasoning as spontaneous decision-making (Subtheme 2).** Two of the three participants, Melissa and Diane, provided examples of how her pedagogical reasoning operates as spontaneous decision-making in response to the unpredictable variables within the dynamic context of active instruction. While the other participant, Fran, didn’t describe her pedagogical reasoning in terms of spontaneous decisions within active instructional moments, her identification of teaching in exploratory mode reveals her awareness that she cannot anticipate how students will respond to lessons that she has not previously taught.

Both Melissa and Diane described the spontaneous nature of their pedagogical reasoning as triggered by an awareness of something problematic within the lesson. “You get the sense that something’s not going smoothly, and you get the sense, meaning they are looking at you confused, or have questions” (Melissa, interview #1). Diane described a similar experience.

When you plan it, you think, ‘I got it. I covered everything.’ So when they don’t get it, it’s a moment of ‘Aw, man. I didn’t accomplish my goal to teach this so they got it the first time. Okay, I need to say it a different way because we all learn differently.’ It’s about them, so if I need to come up with a different way, I come up with a different way.
It’s a challenge. I need to be able to explain it so everyone can get it, and it if it takes four tries, it takes four tries, but…I have to get to where they get it. (Diane, Interview #1)

Diane reveals how there is sometimes a disconnect between what she anticipated through deliberate planning and how students actually respond. While she tries to anticipate barriers to student learning, she acknowledges that she can never anticipate every problem. In spite of her efforts to make instruction seamless, when Diane recognizes students are not picking up on a concept, she doesn’t take it personally. Instead, she recognizes that everyone learns differently, and she accepts the challenge to find whatever strategy will result in meeting her students’ needs, regardless of how many tries that might take. In recognizing these moments, both Melissa and Diane described a strong desire to pause and redirect the lesson. “Stop. Slow down. We’re not moving on until…yeah, immediately, it’s what’s not making sense?” (Melissa, interview #1).

Melissa described a classroom experience where her pedagogical reasoning operated spontaneously.

While we’re reading, they’re filling in a graphic organizer. So they had this to fill in as we were kind of reading along. At first, I thought that of course it would be a no-brainer because it tells them exactly what to put in the box, and I wanted…just a way to make sure they’re charting their understanding as we’re reading the pages. (interview #1) Melissa thought she had provided an effective tool and a strategy for her students to utilize as they read the assigned novel. She was taken by surprise when she realized that the students were not using it the way she intended.

As we’re reading, I said, you know, ‘Keep this out. Of course, while we’re in our groups, we might take some time to reflect and see where we are, but you should be filling this out.’ And immediately, as we’re on page three, there’s nothing written. This isn’t
working as it was designed. Those are those little things that you look for to make sure things are going smoothly, and they hardly ever do, so then you’re like, okay, here’s my reality check. (interview #1)

Having noticed that the tool was not working as she intended, Melissa’s described her initial response as being deflated by what she perceived to be a “little bit of a failure,” (interview #1). However, that feeling of failure and disappointment after thinking that she had made a solid lesson plan motivated her “to do a better job at this,” (interview #1). Her next thought in the moment of instruction was to prompt the students to use the graphic organizer. Rather than tell them what to do, she felt it was important to give them a chance to figure it out on their own.

I’m going to give them a chance to kind of figure it out, in way that not’s like, you (students) should have already – but in a way that’s like, let’s pause, let’s take some purposeful time. They wouldn’t even know that I didn’t do it on purpose. Like, oh, end of page three, okay. Even though it was completely spontaneous based on them not having anything filled in. (interview #1)

Important to Melissa is not only being aware of how her lesson is going, but being able to use data from her students’ lack of expected progress to alter the lesson immediately and seamlessly. She stopped the students when she hadn’t planned to do so in order to prompt their use of the graphic organizer, and she did so in a way that didn’t indicate to anyone that something hadn’t gone according to plan. To the students, and likewise, to an observer of the lesson, there was no evidence that she was making adjustments to the original plan as the class period progressed. Additionally, she based her decision for how to proceed upon multiple factors including determining the breakdown of the students’ understanding, how best to move the lesson forward, and her desire to provide the students with an opportunity to catch on to the strategy on their
own, and maintain her role as facilitator by not telling them they were wrong or feeding them the correct answer. She decided to have them work within groups to begin fill in the graphic organizer based on what they had read so far.

I definitely wanted to give the opportunity to feel like they were figuring it out, and then, we’re going to come back together as a whole group and see what you discovered. Having that conversation puts it on them, which I think is really important…then I’m the facilitator with an end in mind. We need to hit on X, Y, Z, but let’s see if they can get there without me. And then coming back, then that’s when I sat and started to write down what they were sharing. And so, ‘okay, what did you find? Let’s hear from each group. What did you find with your questioning?’ And then kind of recording it so that they all could see it for the lower learners who didn’t write anything. (interview #1)

Her approach to making a necessary adjustment to her lesson began with her recognition of a problem, which was immediately followed by the decision to intervene; however, the way she chose to intervene and the action that followed was based on her ability to weigh several factors at once and select the action that would best suit the situation. In this case, her action was based on the following factors: her desire to move the lesson forward while preserving her role as facilitator, her desire to maintain student ownership of the learning activity, and her desire to utilize collaborative groups to enable struggling learners to receive supports from their peers. These factors were considered spontaneously, and her resulting action reflects her ability to decide on an instructional adaption without disrupting the flow of the lesson from the students’ perspective.

Diane also recalled an instructional moment where she found herself engaging in spontaneous pedagogical reasoning.
Last week with intensive math…we were working with tangrams. I was trying to get them to make connections between the pieces to understand…this triangle is half the area of this square. And they were kind of like, ‘I kind of get it, but I kind of don’t.’ Usually their body language, or that glazed-over look, or when you give the directions and they just sit there sort of staring at you like, ‘I’m sure you’re going to give me more information because I’m not quite sure I what to do.’ They give you just the look is how I describe it. (interview #1)

Like Melissa, Diane noticed that her lesson wasn’t going according to plan through her ability to recognize that her students were confused. Also like Melissa, Diane described her initial response to this recognition as a moment of panic, “because in your mind, you’ve planned it out, and you’ve thought through it, and all the possibilities,” (interview #1). For Diane, the panic only lasted for “two seconds because you don’t have much more time.” This unpleasant feeling, however, became Diane’s impetus to adjust the lesson for her students.

Then I had to go back through, and at first I was trying to let them be more self-directed. So I kind of gave the directions, there was a little visual on the handout, and I realized that they needed a little bit more. I realized that I needed to model it for them. So, I turned on the projector, I had the document camera, and I showed them the pieces. And once they saw it, and once they saw me manipulate the pieces and think out loud, they were like, ‘oh, okay.’ So then I gave them another example to do and they were able to think through it more easily than when I was just like, okay, here’s your task, here’s your pieces, here’s the instructions…okay, let’s work together in groups to get it done. That wasn’t enough for them. (interview #1)
Diane recognized that even though she’d taught this concept before, her approach had to be adjusted for this particular group of students.

The day before…we had done some manipulating of the pieces and making other shapes, so I thought that was enough, and I didn’t realize, because every group is different, I didn’t realize that the particular group I have would need that little extra bit of scaffolding before I kind of let them work. Normally what I’ll do is I’ll take an activity or an idea, and I may reuse it or tweak it from one year to the next, and in your mind you know, okay, every group doesn’t go the same, even every lesson plan doesn’t go the same. But you usually think, oh, I remember last time they struggled with this, so let me add in a layer here. But there’s always something new that pops up and you have to be ready to…(snaps her fingers). (interview #1)

This reveals a relationship between deliberate and spontaneous modes of pedagogical reasoning. In this case, Diane had deliberate plans to teach the concept of tangrams based on her previous experiences teaching it; however, because the particular group had needed more scaffolding than previous students had, she had to spontaneously adjust the lesson to accommodate the needs of these particular students. Like Melissa, she considered multiple factors in making the decision about what action she should take, including maintaining students’ confidence and allowing for the most self-direction as possible.

To summarize, all of the participants of this study described pedagogical reasoning as something they experience constantly, both within the bounds of their professional settings and during otherwise personal time. While all three participants described pedagogical reasoning as deliberate in relation to taking time to plan for instruction, only two participants described the spontaneous nature of their pedagogical reasoning in relation to making adjustments to planned
lessons during active instruction. Deliberate pedagogical reasoning emerged as occasions to step back and reflect on previous teaching experiences while looking forward to hash out ideas, lessons, and other nuts and bolts such as materials and organization of units over available instructional time. For all participants, deliberate pedagogical reasoning requires extended segments of space and time, often beyond the hours of the school day, as well as a level of energy to create new lessons. Two of the three participants described spontaneous pedagogical reasoning as occurring during instruction and following a similar pattern. Spontaneous pedagogical reasoning begins with an awareness and recognition of something problematic within the lesson, followed by feeling of unpleasantness, which then prompts a decision to redirect students and the lesson towards a better result. Both participants discussed a momentary feeling of failure or panic when they recognized a problem in the lesson; however, that moment of disappointment was the lynchpin in their ability to respond to the situation effectively. In both examples given by Melissa and Diane, spontaneous pedagogical reasoning involved the necessity of considering multiple factors at once in order to make a seamless adjustment to instruction. Some examples of such factors included preserving student confidence, allowing students to self-direct and maintain ownership of the learning, and providing enough scaffolding and/or modeling to allow for student success.

**Pedagogical Reasoning is Oriented Towards Achieving Multiple Goals at Once**

*(Superordinate Theme 3)*

In addition to its development over time, and its operation in two distinct modes, the participants in the study also described their experience of pedagogical reasoning in terms of setting and achieving goals. All three participants pointed to disciplinary content as central to their goal setting; however, they also expressed their decision-making in terms of different types
of goals: goals for students, goals for themselves as practitioners, goals related to their personal identity, and goals related to meeting the needs of individual students. Further, they described their experience with the phenomenon as oriented towards achieving multiple goals at once. Their description of their goals for students revealed a complex relationship among variables including the desire to extend student learning beyond the foundational goal of acquiring disciplinary knowledge. Goals for students beyond discipline-specific knowledge was influenced by each participant’s self-perception of her role in student learning, which was also tied to her individual personal and professional identity. Finally, all participants described the necessity of building relationships with students in order to achieve their various goals as a key aspect of their pedagogical reasoning.

**Pedagogical reasoning is oriented towards goals for students beyond the acquisition of discipline-specific knowledge (Subtheme 1).** While each participant described a focus on teaching discipline-specific knowledge as a central goal for student learning, they each described their pedagogical reasoning in terms of goals for students beyond disciplinary content. Melissa described her desire to have her students *transcend knowledge* (interview #1):

> I feel like of course I could get through a school year and teach certain concepts that need to be covered, you know, looking at standards; but to go beyond simply being exposed to a concept and testing well…if you were looking at the data, for them to truly…go beyond just learning a concept, and becoming someone who really, genuinely is a learner, and appreciates knowledge and can go take all these skills and continue to apply them.

Her goal for students to transcend the understanding of a concept to the continued application of a variety of learned skills includes an additional goal: that students become a type of person who is a *genuine learner* and has appreciation for knowledge. She contrasts these goals with the
notion of staying close to the standards with a focus on her students’ success on standardized tests, which shows how her pedagogical reasoning involves goals beyond those set by the state and district. Additionally, Melissa’s goals for her students’ learning include and incorporate qualities of character that she values, which relate back to her desire to create the kind of environment where students feel safe:

If I have them for class, then it’s my goal to have them leave a better person, a better individual. Like to have benefitted beyond just learning material. One of the things we talk about is that you can’t really write well if you’re not honest, and you can’t be honest if you don’t feel comfortable. And so, that cycle of being kind. That’s like just a – they don’t have a choice in the matter. Like that’s set out that we’re respectful and that we’re kind, and if nothing else, we have tolerance for each other no matter whether we agree with their choice, or anything like that. And that there’s a space carved out for each of them to be who they are, and that there’s no judgment in that. And that when they understand that they can exist in that space, then I, too, feel that comfort.

Tied to her goal to deepen her students’ learning is the need to teach them how to be kind to one another, tolerant, and nonjudgmental so that each student as well as Melissa as their teacher can feel comfortable to engage in the kind of activities that are necessary to achieve her goals for student learning. She acknowledged that goals such as students leaving her classroom better, kinder, more tolerant individuals were beyond the scope of her job. When I asked her if she felt that it was her responsibility to teach those kind of virtues, she responded:

I think all of this doesn’t have to be, when you look at the…what the job description entails, but I think it can be, if you decide to take that on. I know that I can have an effect, or not. I could choose to not do anything, or…I could get involved and help in a positive
way while they’re learning. You’re helping to shape people. It’s a powerful thing.

(interview #1)

Diane described her goals for student learning beyond discipline specific in several ways as well. First, she pointed to her overarching goal of building student confidence as crucial to their learning in combination with teaching them strategies.

My goal over the last few years has been to work on building that confidence because, if they have that confidence combined with the strategies, they can be successful. That self-confidence is so key, but it’s not just that. It’s giving them the tools and the strategies, and using the best practices, and giving them graphic organizers, so it’s all lumped into one. But we so often focus on just, oh I’ve gotta teach the strategies. (interview #1)

In addition to her overarching goal of building student confidence, Diane also pointed to her desire to make mathematics appreciated, relevant, and doable.

A lot of people don’t see the value in math outside of math class…and what I really like the kids to see is that they use math so often, and they don’t even think about it because it’s just a part of what we do. It’s just a part of everyday life and finding those things and bringing it to life in a sense. (interview #1)

Diane’s goal of helping students become more confident in their math skills was also linked to her goal of making math more accessible to them by showing them they ways they use math in their daily lives without realizing it. Her goal to make math appreciated and relevant supported her overarching goal of building student confidence be demystifying the discipline specific content itself.
Like Melissa, Diane also described her goals for students in terms of developing in them character qualities such as ownership of learning, responsibility, and independence as a means of empowering them to be successful in math and elsewhere.

Fran described her overarching goal for her students as preparing them for life after middle school and beyond.

What we’re accomplishing here isn’t about whether or not you can call it a verb or a noun, and it isn’t about whether or not you can name the 50 states. I mean, that’s important stuff, but…content wise, it’s not about that. It’s about the life skills that come from the work habits, from the critical consumption of information. It’s about preparing them for real life. In middle school, I’m sorry, that might sound pompous or grandiose, but I don’t think it’s something you wake up as a junior in high school and suddenly go, oh, I know how to study, and I know how to break things down, and I know how to manage my time, and I know how to get what I need by going to the people and researching the information and all that stuff. (interview #2)

She added that her overarching goal to prepare students for real life influenced the way she made decisions about how to teach her students.

I needed to give them reasons to learn those things here. And yes, I could give them all the tests, written information on how to manage your time. I could teach a unit on how to manage your time, and they could memorize the steps, and they could regurgitate it, bubble it in, and still never turn anything in on time. I don’t’ know any other way to teach them these life habits other than to give them reasons to use them while they’re here.

(interview #2)
For Fran, teaching her students life habits includes finding ways to design instruction in such a way that such skills are integrated into the way the students learn discipline-specific content. Her overarching goal of preparing students for real life relates to the specific needs of the gifted learner. Her keen understanding of that type of learner shapes the goals she has for them.

Gifted kids learned early on that school isn’t hard. School is a place they can go and shine and get things easy, and they [get to] me, and I kind of take it as my personal mission in life to make school a little hard here because I don’t want AP and honors classes to be the first place it’s hard for them. (interview #1)

Making school tough for her students relates to another of Fran’s goals: preparing students to be resilient regardless of what challenges they might face in high school.

I want so much for them to be able to leave here and go to high school and be prepared for whatever high school could throw at them, knowing that the four years of high school is so much growing and so much changing that they’re going to do, so that they’re prepared. I want them to understand that they shouldn’t ever be thankful for the easy things. If they get a class, and they call it an honors class, and they’re not moving forward, that’s a bad thing. Because they won’t be prepared for the next level that really is an honors class. So trying to get them to buy into the idea that they should be working for their learning, that they should be earning their education, that they should be stretching and growing themselves, so that if they ever end up in a class where it seems too easy, is it number one easy because they were well prepared, or is it easy because the teacher’s not doing their job? And they should never be grateful for that kind of thing. That’s a hard one, especially when they’re 12 and 13. Really, you want me to go after the
hard stuff? Yeah, I want you to go after the hard stuff. You’re going to get so much better results from that.

Like both Melissa and Diane, Fran’s goals for students beyond disciplinary content include teaching them character qualities: “I want them to be autonomous, and independent and accountable. Their parents want the same thing” (interview #2). Additionally, Fran wants students to become advocates for their own learning.

I teach them how they learn, and try to do those sorts of communication things with them. There’s so much information out there. I have to teach them what to do with it, how to filter it, how to make ethical decisions, how to live with themselves, how to build relationships so that they can reach their goals, and how they can keep all of their doors of opportunity open. (interview #1)

In summary, all three participants described their pedagogical reasoning in terms of the goals they set for their students’ learning beyond the content learning goals set out for their discipline by state standards. For Melissa, her experience of pedagogical reasoning was influenced by her overarching goal for students to transcend the basics of content acquisition to become genuine learners capable of extrapolating skills from her class and applying them elsewhere in school and life. For Diane, her overarching goal to build confidence in her struggling students in addition to teaching them strategies and skills influenced her pedagogical reasoning in such a way that subverted what was previously a focus on teaching only skills and strategies without considering students’ needs for self-confidence. Fran’s overarching goal to prepare students for life influenced her pedagogical reasoning in such a way that, considering the specific needs of gifted learners, resulted in her finding ways to ensure that learning was not an easy enterprise for her students. All three participants also discussed their goals for students in
terms of teaching them character qualities and virtues that, while not reflected in state standards
or tested on state exams, and rather than as a result of a moral obligation to do so, were important
to creating the kinds of learning environments and experiences these teachers desired for their
students. For example, as means to these ends, they discussed the need teach qualities such as
kindness, honesty, tolerance, autonomy, independence, responsibility, accountability, ethical
decision-making, and resilience.

Pedagogical reasoning is oriented towards goals for self in terms of one’s role in
student learning (Subtheme 2). In addition to an orientation toward goals for student learning
beyond discipline-specific content, the participants’ descriptions of these student goals revealed a
link to their perceptions of their roles in student learning. Consequently, each participant
described a shift in her focus from discipline-specific content delivery to a focus on the needs of
individual students as prioritized over content. For each, this shift occurred as a turning point
later in her careers and in connection to the development of her pedagogical reasoning over time.
As the participants’ pedagogical reasoning developed through experiences, the focus of their
pedagogical reasoning shifted away from concerns about content delivery and towards concerns
about individual students. This shift prompted the participants to reflect on their roles in student
learning, and likewise, their goals for themselves as practitioners.

Melissa described a shift in her pedagogical reasoning as it related to a sharpened focus on
students rather than just the content she teaches:

I think there’s that natural progression when you first teach, and you’re still kind of self-
centered, and you’re learning the job, and then I think as maturity kicks in, and you start
to realize [that] in order to be really effective, that becomes outward and more student-
centered. I think as that happened, that’s when I started to be able to reflect. I think at
first...you’re going through the motions more, like, this is what teaching entails, and...I go to this meeting, and this is how you do it. And then starting to think of the connective, ‘Why am I doing this? What’s the benefit for the students?’ I feel like once I kind of wrapped my brain around just the more surface level...and tried to get a little bit deeper, into...more reflective [thinking], like, ‘Well, okay, what did I do to cause this lesson to go well? What did I not do? What did these kids need? When I break it down and do it this way it seems to work for them.’ That shift in thinking from so surface level to kind of a more deeper thinking process, when that, I guess maturity, or center happens, I think that’s when I started to connect more with the heart of teaching. (interview #1)

Melissa used the phrase the heart of teaching as a way to describe a space where she resided within her perceived role as a professional, and this shift towards the heart of teaching brought changes to the way she approached instruction connecting back to her overarching goal of students transcending knowledge. She explains:

I think that kids want to be seen and appreciated and treated with kindness and respect and all the things that I would want. I think that’s important for them before you ever...(pause). If I were you say, “you need to learn this because I said so,” with that whole approach, I think some of them have had those experiences. Again, a lot of it is unspoken. It’s things from positioning the desks so that we’re all near each other in circle, and then I’m part of it sitting amongst them because I’m a part of this group that we’re about to create together, instead of that idea that I’m in charge or I’m all the negative things they might be thinking. Instead it’s less, it’s more a part of something and less, you know, intrusive. (interview #2)
At the beginning of the year, right away, they’re…up sharing. They’re up with “this is what we discovered as a group,” so, I think that they know that they’re constantly going to be discovering some knowledge, and it’s going to be on them, and “what is it that we came up with?” and to think. I think it lets them know that ineffective model of…some of the teachers kind of talking at them and lecturing at them, and them not being actively engaged, that’s not going to happen in here. That they’re going to be called to the carpet right away, but they are going to be learning, and we are going to be constantly checking in and sharing. That they’re an active, engaged member of the group. (interview #1)

Melissa begins in the earliest interactions with her students establishing her role as a member of a group along with them rather than the sole individual in charge. This posture as facilitator and member of the group allows Melissa to create the kind of classroom environment that she must create in order for students to be able to meet her goal of transcending knowledge:

I think it’s really important to me to feel like I’m a part of a community of learners that, more than anything…I can be who I really am, that the kids can really open up, especially in the subject area, and that, of course they look to me for guidance on where we going, but that over time they’re taking it on and that they, themselves, once they’re handed a concept and once we start to delve into something, that they take it on and that they extend out and go beyond what we started with. (interview #1)

Melissa’s goal for her students to learn beyond the basic content of the discipline rests on several other goals. First, she notes the need for a classroom community in which both she and the students feel safe to be themselves. Next, she mentions her goal that the students take ownership of their learning. Both of these goals relate to her role in the students’ learning as a member and facilitator of that community. As such, her overarching goal for her students to transcend basic
disciplinary knowledge depends on her goal that students take ownership of their learning, which likewise depends on her goal that students feel safe to be themselves and take risks, which likewise depends on her creating such an environment. To create such an environment, Melissa must take on the role of a facilitator and member of the class group, as opposed to what she calls the ineffective model of lecturing students, which is one of her main professional goals for herself.

Like Melissa, Diane described a shift in her focus from teaching content and strategies to teaching in ways that met the specific needs of individual students. Having reflected on a moment in her career when she realized there was a disconnect between what her students could do with her in class and how they performed on tests and state exams, Diane recalled the feeling of being jolted. In turn, her desire to figure out the cause of the problem resulted in her learning about the importance of student confidence to their achievement. This understanding caused her to shift her focus not only from simple content delivery to addressing student learning needs, namely self-confidence to perform the skills independently on tests, but also from her role as a provider of strategies and skills to one who must build student confidence. This shift in her perceived role changed the way she approached instruction with her intensive students. Prior to this shift, she described her approach to instruction as linear and task-oriented:

> It’s funny, because even when I started the masters program, I said to somebody…that being the math person that I am, and I can laugh about it now, being the math person that I am, you know, you’re very goal driven. “I’ve got to get to the end,” you know. “I have to make sure I teach this lesson, I have to be sure I give them a quiz, I have give them a test. Okay, I have to analyze the data”, and say, oh, okay…very much stepwise. “Okay, I got that done.” And what I realized is that there is so much more out there, you know,
that it helps to make those connections with students, to build those relationships, and I think that’s what I realized when I started to teach intensive math. (interview #1)

Diane’s realization that her intensive students needed more of her in order to build their confidence changed the way she viewed herself in relationship to her role as their teacher. She explained:

I don’t know if it was the opportunity with intensive math, but also with me being more open to it, because I don’t consider myself to be a very outgoing person. So, it wasn’t a natural thing for me to really get involved in the kids’ lives. It was, “Okay, I’ve got this lesson to teach, I need to get to the end, I need to assess, I need to look at my data, and I need to move forward.” And I realized that I couldn’t take that same approach with that particular group of kids because that’s not what they needed. Whereas before I might have gotten frustrated in a sense where it’s like, okay, I’m wanting them to do this problem, and they’re wanting to interact with me about what they’re doing over the weekend or whatever. And sometimes, I’d be like, “Okay, let’s get back to this,” not realizing that they needed that attention from me in order to move forward and say, “you know what, I can do this because I know you are concerned about me, and being concerned about me means that…(pause)” – I’m going to teach them, I’m making a connection with them, and they are in turn going to do their best.

Even as unnatural as it was for Diane, who by her own admission does not possess an outgoing personality, and who looked at attempts by students to engage her in conversation of a personal nature as distractions from the lesson, she came to realize that it was those very attempts to connect with her that would engender a sense of confidence in her students. She realized that in order for her students to gain the confidence they need to be successful in performing the math
skills she teaches them, they first need to know her and trust that she is genuine in her concern for them. Even further, Diane realized that in order to build student confidence, she must adjust her role with students to prevent being seen as an expert authority.

I did intend to create more of that ownership and responsibility and, too, I’ve said before to parents is that I want to empower the kids to be successful. I don’t want it to be like I’m the only one that knows how to do anything. It’s, “Here, I’m giving you what I know, I’m empowering you with the tools that you need to help you be successful.” (interview #2)

Her goal of empowerment and confidence for students depends on her professional goals to be a teacher who is personally involved with her students and, rather than holding privileged her knowledge, a teacher who shares her knowledge in a way that enables students to grow in independence.

Fran’s shift towards a focus on students was a subtle shift, aided by the fact that by the time she started teaching gifted students, she had a gifted son who also attended the middle school where she taught. Key to the orientation of Fran’s pedagogical reasoning towards the needs of individual students over the content itself is her specialization in gifted learners. Having had early teaching experiences with gifted students, training in the gifted population by earning gifted endorsement, and raising a child in the gifted program, Fran’s focus on the specifics of the population were already established when she began her career. Nonetheless, she recalls a learning curve in becoming adept in meeting the needs of the gifted learner, which she contrasts with her experience teaching drop out prevention, a population for whom she did not have specific training.
The first couple years I taught gifted without the training while I was getting it and stuff like that. I mean, I made mistakes, but I was raising a gifted child, so I think I made some lucky guesses sometimes, too. But knowing that, and the fact that I teach the endorsement classes for teachers that want to be teaching gifted kids keeps me fresh in the literature and the research, so I don’t have a chance for those skills to go stale even if I wasn’t teaching them every day. But, it’s incredibly important to know the population. The two years I taught dropout prevention, I was a dishrag. I was an emotional dishrag because I kept feeling like I was failing them because I had no clue. I’d had no specific training in the population, where their strengths and weaknesses lay as a group, and I kept pushing in the wrong places, or not doing the right things with them and just feeling very frustrated all the time. So that background training, that knowledge, because you build off of that. That’s just the basics. (interview #2)

Fran found that knowing the specific characteristics of gifted students helped her to reach them in ways that enhanced their learning experiences; this reveals her priority of student needs over just content. “I don’t have a clue about what to do specifically content-wise until I know them as people, and it’s a lot more than just a pretest and that kind of stuff,” (interview #2). For Fran, knowing students as people precedes her ability to instruct them well. This notion reveals the parental role Fran perceives for herself in regards to her academically gifted students:

Again, get out of the way, let them take a test, they’re going to be fine; but meanwhile, they’re also battling depression or starvation or the other things poverty brings, or the family’s crumbling around them, so trying to be never be that teacher that’s more about the assignment than the kid. Trying to always remember that the kid is the most important
thing. Always. Teach every kid as if it were your own. I’ve had a kid, and now I have
grandkids. I understand what it means to be responsible for that kid. (interview #2)

For Fran’s overarching goal of preparing her students for real life, she prioritizes knowing
them as people before creating the instructional learning experiences that she will employ to teach
disciplinary concepts. Additionally, these goals reveal how she perceives her role as a teacher
and is linked to her identification of the parental nature of the responsibility she feels for her
students and aligns with her professional goal to always make the students the most important
thing.

In summary, all participants in this study described their goals for students in relationship
to their own professional goals with regard to their roles as teachers. For Melissa, her goal for
students to transcend knowledge was revealed to be dependent on her personal goal to be a
facilitator and member of a classroom community of trust that she must build before getting to
the business of content. For Diane, her realization that her intensive students needed more of
personal connection to her in order to feel safe enough to take risks with instructional concepts
and build confidence in their abilities caused her to engage with students in ways that are outside
of her reserved personality. Finally, Fran’s deep knowledge of her specific gifted population over
many years developed in conjunction with her parenting of her gifted son. Fran’s goals for
students to be prepared for life reflects her parental wishes for her own child; therefore, her
desire to know students as people before she begins instructing them on content, her desire to
always make the student the most important thing, and her goal to teach every kid as her own
reveals the parental nature of her role with students. Each participant described her goals for
students beyond disciplinary content knowledge in terms of her goals for herself and her role as a
teacher. This orientation towards goals for self in relationship to goals for students reveal important facets of pedagogical reasoning as it operates to make decisions about instruction.

**Pedagogical reasoning is related to individual personal and professional identity** (Subtheme 3). In addition to identifying goals for student learning and goals for themselves as teachers with regard to the roles they perceived for themselves, all of the participants in the study made a connection between their personal and professional identities, indicating a high degree of personal investment in their professional lives.

Melissa became emotional and had to stop several times to cry when she described the connection between her personal and professional identity. When I asked her what made her emotional, she shared:

I think so much of yourself can be, clearly, infused into your profession in this forum that, and I think clearly so much of who I am is a part of how I teach that I think that that’s where all of the emotion comes from. The emotional piece of teaching? I guess that’s to me the most important piece. It’s not, like, when you think of the, the term education, the paperwork, and the stuff your boss asks you to do. That’s the least interesting part to me, and of course, I’ll do it, but it’s the instructional piece, that’s where that [emotion] lies. You know, the direct relationship with students and the craft itself, and I think that the emotional piece comes from being so deeply invested in it, I guess, just really doing what I love, and really caring about it, and it being more than a profession, I guess. It’s an extension of who I am at this point. (interview #2)

Additionally, Melissa pointed out that her personality has a lot to do with how she makes goals for her students and herself as their instructor.
I guess for me it is just care, concern, and what can I do to be even better at it. What’s that one last thing I can do to, you know? Be more help, or you know, I think that’s where that comes in. I think that a part of just my makeup and who I am, like outside of education, just no matter what it is that, like even, it could even be accounting. Whatever I chose to do, I have to be the very best at it, and I can’t stop ever, and I’m never going to feel that I’m the best at it. I think so much of that is intrinsic. I mean, it’s a personal desire want to do well in the job, in the profession. I think there’s a big relationship with just being inherently motivated to do well. (interview #2)

For Melissa, her intrinsic motivation to be the best at what she does is met with the humility of knowing that she will never feel the best, which then provides the push to become better. In this regard, her personal drive influences the way she approaches her craft. She also noted her belief that teachers’ unique qualities inform their relationships between themselves and their students: “We are all so different, and so there’s no two alike, and that is what makes it so difficult to define because it’s this intimate relationship that you forge with someone saying, ‘trust me,’” (interview #2).

Diane described herself as having been math person with a math personality, whose approach to teaching followed a stepwise pattern of checking things off a list. While that changed after she realized that there was more to teaching to her intensive students than getting through content over time, she became more engaged with the students as well as totally committed to finding ways to meet their needs, regardless of how much time that took. Part of Diane’s personal and professional identity she described in terms of being a workaholic.

I think in some cases I think I am a workaholic. I’m not at 7:40 to 3:10 type of person. It’s like if I’ve got to get something done, I get it done. If it takes me two hours, it takes
me two hours. If it takes 30 minutes, it takes 30 minutes. And I know at this point in my life, I don’t have kids, and I think about that often, because when I start thinking, “Why doesn’t everybody else do this? Why is this so hard?” I think back to, there’s a lot of time I spend doing this, and I know that not everybody has that time to commit to it, so before I become extremely judgmental about, you “Why don’t you do this, or why don’t you do that, or why can’t we collaborate?” I know that everybody’s situation isn’t the same. And because I have that time, it means it’s my responsibility to put it to good use.

Diane associates the time she puts into lessons outside of school hours as a responsibility she has because of the free time available to her since she doesn’t have children. Because her time is not otherwise required for tasks associated to motherhood, she believes that it is her obligation to spend that time devoted to working on instructional pursuits. She also sees this additional time not taken up by familial responsibilities as reason to avoid being judgmental of colleagues who do not commit as much time and effort as she to the development of instruction for their students. Yet, it is clear that her professional commitments are as much a part of her personal identity as she believes her colleagues’ children must be.

In terms of personal investment and time, Diane also acknowledge that while she may not have children, the time she spends in her commitment to preparing instruction for her students has come at a cost to her relationship with her husband.

I mean, going in, he knew I was a teacher and all that, but I think that helps to not feel guilty and because I know when I was working on my masters, I felt guilty a lot because it was so much more of a time commitment and I’m like, oh, I’m sorry, you know. Sorry I’m not having dinner with you, or sorry I’m working while we’re eating. I always felt guilty that I was neglecting that relationship because I was working, but they seem, I
don’t want to say equally as important, because in the end, my husband is more
important, but I’m glad that he’s understanding so that I’m not torn to the point that I’m
like, oh, what do I choose? (interview #2)

While Diane is grateful for her husband’s support and the fact that he doesn’t make her choose
between her career and their relationship, she indicates that he knew what he was getting into by
marrying a teacher. As such, Diane suggests that being married to a teacher is something that
comes with a particular set of conditions, and she justifies her level of commitment to her
profession in that way. She indicates the degree of her commitment to both her relationship with
her husband and her commitment to her profession by her indication that she would struggle to
choose between them, if she were forced to do so.

I mean, in the end I would chose that relationship, but it would, I would be torn. I would
still feel like, but, oh, I’ve got to do this [career]. So, I’m glad I don’t have to make it
because if I felt like I had to, yeah, that relationship wouldn’t have lasted.

Diane’s first statement indicates an allegiance to her husband, but contradicts that by indicating
that if he had forced this issue, their relationship wouldn’t have lasted. The degree to which
Diane is invested in her career is revealed even further by her delaying having children and her
conflict it.

That’s something that I struggle with now, because, you know, I see my window of
opportunity shrinking, and I’m like, okay, I need to make some adjustments, and I need
to try to be more efficient and trying to maybe, definitely not do the same thing that I do,
or at the same level, because, I know I’m not going to have more hours in a day, but I
need to be more efficient so that I could feel like I was meeting the all the responsibilities
of those roles. I think there would be a sacrifice. To what level, I don’t know,
but…honestly, I don’t think I’d be able to spend as much time thinking about what I do in those deliberate things as I do now. Because I’ve got that time, I’m not pulled in 10 different directions. I can sit and focus. I can spend a Saturday afternoon just thinking and planning and, oh, let me try this, or let me do it this way. I have that time.

She also recalled reflecting on the difficulty of starting a family around her changes in her curriculum, including the adoption of a new textbook several years back and her current challenge to adapt her curriculum to the common core state standards.

It’s funny, because I was looking at the big picture, which I don’t normally do very often. I’m very, okay, do this, do that. But I’m like, when we started [the new textbook], we’re three years in, I’m like, okay, I’ve got three years. If I get a good handle on it the first two years, I’ve got four years worked out. It would be a prime time to have kids. And then when common core came around, I’m like – up, that’s wrench in my plans. (interview #2)

Diane’s personal and professional identity are so much the same thing that the sacrifice she’d have to make to the quality of her instruction seemingly discourages her from starting the family she would like to have.

So much of my personal time is spent planning and thinking, and oh, let me try this. But without that time, when it comes down to that personal time, it’s like, do I spend time with my family, do I plan a lesson to the level that I want to plan it at – eh, you know? I mean, family’s going to have to come first. It’s going to win out every time. (interview #2)

Diane also noted the importance of the relationship between an individual practitioner and his or her approach to teaching.
I think that different people have different paths to teach. In other words, I, in my class, might teach a concept one way. Someone down the hall might teach that same concept very differently. And, yes, there are best practices, and yes, there are those research-based things we know we should do, but at the same time, it’s almost like we’re being driven to a cookie-cutter type system where everybody has to do the same thing the same way, and it kind of takes that personality and it takes the fun out of why we wanted to teach in the first place.

Diane links being able to teach in ways that allow her to reflect her personality to the enjoyment she finds in teaching and what drew her to the career initially. She continued:

We work pretty much by ourselves. We collaborate as we plan, but the actual teaching, you do on your own. It’s independent, and you have to make it your own, otherwise, you know, you wouldn’t be very productive with it. Because you can get to the point where it’s just, “Okay, here’s your assignment,” you know, “Do it.” You have to be engaged with it. That’s so much of it. You have to enjoy what you do, and if I had to go teach science, I could probably find a way to teach it according to all the things I know about teaching, but that passion, and that enjoyment, and that understanding that helps you get that point across would be gone for me.

Fran also described her personal and professional identities as inextricable from one another. “It would be really, really hard to tell you where the teacher ends and the woman begins, because everything in my life becomes an example I can use in my classroom,” (interview #2). For Fran, the constancy of her pedagogical reasoning is part of her identity, no matter where she goes.
I go to Colorado and I do nothing but play with grandbabies for a month, and it’s phenomenal. But…the teacher brain is still going, and a lot of that comes back with me, and it just – like I said, it all ends up back here [in the classroom]. (interview #2)

When I asked Fran if there was a difference between Fran the person and Fran the teacher, she compared how she identifies as a teacher to other professions:

I don’t think there is. I mean I hear these people say, they never put on a tombstone I wish I spent five more hours in the office. And I always heard that statement, and I’d go, that’s true, but I think there are some professions where it’s not an office. I think preachers, and I hear preachers refer to being preachers as a job, that always strikes me kind of funny, like, you’re called by God, aren’t you, preacher. And doctors, if they’re really healers, aren’t they pretty much doctors all the time?

For Fran, part of being a teacher all the time has to do with the melding of her professional identity into her personal identity. Like Diane, Fran’s relationship with her husband puts this into perspective. After over 20 years of teaching, she feared she was nearing burnout due to the level of her personal investment in it. Her relationship with her spouse gave her a reason to live outside of teaching.

I was effective in the classroom. I was doing fine. I had been National Board Certified. I was going to do my renewal. I was still doing conferences. I was still engaged in the profession, but I think by the end of the year I was a little harsher. I was a little harder. I think I was headed for burnout, I really do. And then these other life things came in and chipped away at it, chipped away at it, and then I found Bob, and now I drive an hour one way to get to this school, because I love this school. This is family school. And an hour home at night to get to him, and I actually take weekends off and don’t grade or I don’t,
you know, we do other things - yard sales, stuff like that. So I’ve learned to have a life outside of teaching, but it’s actually just made me a better teacher. I was really clear with him about that upfront. It’s like, I’m a really busy woman, and I’m involved with all these things, and my ideal guy will want to be involved in some of these things, too. He comes and does Relay for Life, he does Odyssey of the Mind, he does these things, and he loves them and he has a good time.

Like Diane, Fran approached the commitment to her husband by giving him the caveats and expectations of what that entailed, indicating the high level of commitment she has for her professional life. For their relationship, his ability to join in some of the activities she engages in through school and her willingness to take some time during the weekend for leisure activities has provided a more balance than she experienced before. Even so, she described her professional and personal identities as deeply intertwined:

Here’s how I feel about me as a teacher. Richard Bach wrote Jonathan Livingston Seagull. I don’t know if you’ve read that or not. Well, he wrote another book called A Bridge Across Forever, which is essentially an almost autobiographical love story. And in that he espouses the theory, much like in Jonathan Livingston Seagull, that this life is preparation is preparation for another life and so forth, but in a Bridge Across Forever, its that we live multiple lives. And the character in the story put forth that in every life that he thinks in every life he’s ever lived, his core identity had been this soldier. And the minute I read that, it just clicked for me. I think in every life I’ve ever lived, I’ve been some kind of teacher. It might not always be in front of a classroom, maybe it was just someone that passed on knowledge in another way, but I think, if in fact we get multiple chances at this existence, that it is such a part of me, it is such a core of me to be a teacher.
that I’ve been a teacher in every lifetime across all dimensions. It’s just, like I said, even as a little kid, I was teaching school the minute that school was out. It’s just who I am. And it’s not about a classroom and four walls. It’s about, someone outside of class, summer vacation or whatever, someone doesn’t understand something, I’m often having to bite my tongue to keep from explaining it to them. (interview #2)

In summary, all three participants described their experience of pedagogical reasoning as related to their personal and professional identities. All three indicated a high degree of personal investment in their professional lives, and they all noted a sense that there was little to no distinction between themselves as individuals and themselves as teachers. Interestingly, the personality traits discussed by the participants as those influencing their professional lives, such as motivation to be the best, workaholic tendencies, and high levels of commitment to professional activities, were shown to cause conflict and emotional distress in the personal lives of the participants. Diane and Fran expressed a desire to maintain high levels of professional commitment, even if it came at a cost to their relationships with their spouses; further, they both viewed their identities as teachers as something for which their spouses must make space in order for the relationship to succeed. For all three participants, their descriptions of the level of personal investment in their careers points to a fusion of their personal and professional identities into one unified way of being.

**Pedagogical reasoning is oriented towards developing relationships with students in order to understand specific learner characteristics and needs and earn student trust** (Subtheme 4). Common across all participants’ descriptions of their pedagogical reasoning in terms of instructional goals was the necessity of building relationships with students in order to understand their unique learner characteristics and needs, and to establish relationships of trust.
The relational orientation of pedagogical reasoning emerged as foundational to other aspects of pedagogical reasoning such as achieving goals for students beyond the acquisition of discipline-specific content knowledge, and maintaining instructional environments where their instructional goals could be met.

For example, Melissa’s overarching goal of her students transcending knowledge to become genuine learners able to apply skills beyond language arts and into other areas of life depends on her ability to create a classroom atmosphere and community conducive to risk taking. Such a classroom community depends on her role as the teacher; likewise, her role as the teacher depends on her personal and professional identity. Finally, all of these: her goals, her classroom community, her role as the teacher, and staying true to her personal and professional identity, depend on Melissa’s ability to develop relationships with her students. In a way, it is a circular relationship. In order to get to know her students, Melissa must create learning experiences that will enable students to reveal themselves to her and each other, but in order that the students feel safe to reveal themselves, they must feel somewhat safe to begin with. She described:

I mean, it’s all about the community before we can ever get to the lessons. Well, for me every year, it is building community. It’s a lot of unspoken [things]. It’s things from positioning the desks so that they come in, and we’re all near each other in a circle, and then I’m part of it sitting amongst them. So something as simple as where I am. And I think that another thing that’s important to communicate at the beginning of the year is that we are all learning, that we’re all writers, and we’re all learning from each other. And to jump in and get – you know, become a part of this. Let’s see what you can do, and just that I’m not – I’m constantly telling them that the depth and richness of the
discussion is based on what you’re willing to actually share, and that of course, I can provide the bare bones of what you need to hear, but ultimately, if you want to go beyond that, you have to be willing to give of yourself.

Melissa also connected the students’ willingness to enter that kind of relationship with her as helpful to them at their developmental stage and as a means to connect with the content of the course.

I think that especially with middle schoolers, when so often they’re held hostage by their hormones, if you don’t make the connection on a personal level with them, then there’s a possibility that you could never get through to them. That really helps also with connections with actual material we are learning. Because I think sometimes they think, “no one understands me,” or, “I’m alone,” or, “no one gets how I’m feeling,” and to be able to say, “yeah, I mean, I was there.” Middle school is the toughest years I ever had. Just having someone remind them that it’s a rite of passage, and we’ve all gone through it, and you’re going to be okay. I think that can help for the educational setting, but also for who they’re developing into. (interview #2)

For Melissa, a beneficial outcome of developing relationships with students is their willingness to partner with her in their learning experience. She explains:

I think part of it is community and them being real honest. And a lot of times they’ll just say, “we got it,” you know. Basically, and there’s this constant communication. Luckily these kids are, for the most part I think that they’re very open, and so they’re real honest. (interview #1)

For Diane, developing relationships with students became crucial to achieving her overarching goal of building their confidence in math. She realized over time that her reserved and task-
oriented focus on the content was working against her in helping her intensive students become successful. Once she recognized that the students’ desire to know her on a personal level had more to do with their need to trust her than their desire to distract from the lesson, Diane committed to coming out of her comfort zone in order to develop more meaningful relationships with students. To begin, she became more open about herself during instruction, as well as more humorous and engaging in an effort to present herself as an authentic, real person to her students.

When we go over word problems, for example, I’ve tried to, I’ve gotten more comfortable interjecting here or there. We’ll read a problem, and I’ll be like, ‘Oh, man, that’s a silly problem. Who would want to ride in the car for this many hours and figure that out?’ or “Hmm, this sounds like a problem for a calculator,” rather than we wouldn’t stand in the store and figure this out, we’d pull out the calculator. You know those little asides that engage them, moments when you’re trying to be funny. It kind of keeps them focused and attentive, and just like a real person. Because sometimes I think that they see us as okay, you’re my teacher, but not a real person, so when they do see you out, they’re like, “Oh, my gosh! You shop in public?” Yeah, I go grocery shopping. And so those little things just to seem more human to them and more real and something that they can connect to. I try to in my own way make those connections to them. (interview #1)

In addition to making efforts to reveal more of herself as a real person, Diane began utilizing math journals with students both to extend their learning with regard to math concepts, but also as a means of building personal connections with students.

I’ve done this thing called a math journal. I usually only do it with eighth graders, and it kind of gets them thinking about, you know, what they learned, or how does my family use math, how is math used in my favorite sport, how will what I’ve learned help me in
the future. Just getting them thinking, reflecting in a non-intimidating way. There’s no right or wrong. It’s just tell me what you think, tell me what you feel, and it gives the opportunity to share that part of themselves. You learn do they have brothers and sisters, and just by reading what they have, okay, do they live with just their mom, do they live with their dad, what is their family interaction. I think, and again, I think it goes back to my personality, where I say I’m not the most outgoing, so I’m not always going to go up to them and say, hey, you know, what you are you doing this weekend. It’s kind of for me like and afterthought, where I know for them it’s usual at the forefront of their mind, so by getting them to write about it, reflect on it, make those connections, it gives me a way to open up that communication, like it forces me in a sense, but if I wouldn’t necessarily go up to them and strike up that conversation, I can write back to them in their journal and make a little note, and say, “Oh, I’ve been to that place,” or “this is my favorite sport, too.” Just giving them those little pieces of time that make that connection. And it’s funny, when I give them back their journals the first time, they start flipping through it to see what I wrote. I tried to make sure I take more time to, even if it’s just a quick little something or a smiley face, or underline and ask them to elaborate, just so they know that eyes saw it, and that I read it, and I think it means a lot to them. (interview #1)

Taking the time to respond to students in their math journals accomplishes Diane’s goal of engaging with them on a more personal level without her having to take time to make conversation in class, something with which she isn’t comfortable. Even the time expended in responding to the journals is worth it in the value she finds in the relationship they engender.

Some kids are like, “Well, why do we have to do it this way? What about this?” and “Last year my teacher told me this.” I’m like, “Trust me. I’m not going to lead you
astray.” But they don’t know me. And as the year goes on, I might say, ‘Okay, we’re going to do this, and there’s not so much, “Why do we have to do it this way?” They’ve begun to trust me so there’s not that, “I don’t really want to do that.” They trust. They know that I’m leading them to the right place. (interview #1)

The result of making strides to be more authentically herself with her students, make connections with them, and earn their trust is the elimination of their reluctance to try the exercises she wants them to attempt. Once they trust her, they are no longer resistant; rather, they are willing to trust her to help them grow.

For Fran, relationships with students are essential. “I’ve got to tell you,” she said, “at this age group, it’s all about the relationship,” (interview #1). Knowing students as people is Fran’s first order of business at the beginning of the year.

I know my content, and I know what fits in language arts, so yeah, I’m going to spend that time at the beginning of the year doing specific activities, writing activities, speaking activities, that are going to uncover who they are for me, and me for them. That’s going to build the community, build the trust. It’s also going to build skills. See, I don’t have time to teach things one thing at the time, so we’re going to do a poem right off the bat, or we’re going to do a speaking activity right off the bat. It’s still going to work for language arts, but it’s going to work for us to uncover. (interview #2)

Fran learned over time the importance of establishing relationships with students early in the year as a means to establish authority. Early in her career as she taught drop-out prevention, a population for which she had no training or experience. She recalled feeling worthless at the time because she was constantly trying to establish authority.
I’m still trying to figure out all my teaching stuff, plus working with this population that I’d gotten no training in, and I don’t have a strong affinity for it because I do feel so worthless with them, like I’m still establishing authority with them all the time. If I’m stuck in establishing authority mode, you never get to relationship mode. And so much, now, my authority comes naturally through establishing relationship, that even then I didn’t get the cart before the horse idea, like what needed to really come first. Like, I would do things in the beginning of the year to build team and build community, but the minute it would start to derail or someone was for whatever reason frustrated, misbehaving or whatever, now I’m all about the misbehavior and stuff.

Early in her career, even as she tried to establish classroom community, that spirit was too easily derailed by student frustration or misbehavior, which would cause her to shift her focus from maintaining the community to managing misbehavior as an authoritarian. Later in her career, establishing relationships became Fran’s method of establishing authority. Like Melissa and Diane, developing relationships with students reveal important knowledge about the people they are outside of class; however, all three discussed developing relationships of trust with students as a means to gain their respect and establish authority within their classrooms. In doing so, students are more willing to engage in the kinds of learning experiences and activities that support the teachers’ goals for students. The pedagogical reasoning of all three participants was revealed to be linked to developing relationships with students as foundational to all other modes of engagement with them and influencing both their deliberate pedagogical reasoning as they devise instruction for students, as well as their spontaneous pedagogical reasoning as they engage with students during active instruction.
Pedagogical Reasoning as Professional Phronesis

To make visible the relationships among the features of the constructs of pedagogical reasoning and professional phronesis, I created a matrix that incorporated the essential features.

Figure 4. Alignment of pedagogical reasoning and professional phronesis

<table>
<thead>
<tr>
<th>Features of pedagogical reasoning across cases by theme</th>
<th>Superordinate Theme 1 – PR develops over time</th>
<th>Superordinate Theme 2 – PR is constant and</th>
<th>Superordinate Theme 3 – PR is oriented towards achieving multiple goals at once</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subtheme 1-PD Experiences</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Subtheme 2-ID Problems of practice, reflection, and problem solving</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Subtheme 1-PR is deliberate</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Subtheme 2-PR is spontaneous</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Subtheme 1-Goals for students beyond disciplinarian content</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Subtheme 2-Goals for self regarding role in student learning</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Subtheme 3-Goals related to individual personal/professional identity</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Subtheme 4-Goals depend on relationships with students to be achieved</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

| Feature #1 – Depends on aspects of the individual practitioner | X | X | X |
| Feature #2 – Implies reflection, requires interpretive judgments (situation/context dependent) by weighing generalities and particulars in concrete situations | X | X | X | X | X | X |
| Feature #3 – Requires action based on judgment that is Morally committed | X | X | X | X | X | X |
| Feature #4 – Recognizes the problematic nature of practice: uncertainty, complexity, aporias and paradoxes of practice | X | X | X | X |
| Feature #5 – Is dialogic and relational | | | | X |
| Feature #6 – May be circumscribed by mechanisms of professionalism that prescribe certain actions | X | X | X | X | X | X | X |
of both. The features of pedagogical reasoning were represented by the themes and subthemes that resulted from the first-order analysis of participant hermeneutic data. The features of professional phronesis were adapted from a review by editors Kinsella and Pitman (2012b) of the suggested features of professional phronesis by contributing authors of the text *Phronesis as Practical Knowledge: Practical Wisdom in the Professions* (2012).

The completed matrix revealed clusters of intersections between pedagogical reasoning of the highly competent participants of the study and features of professional phronesis. Worth noting is the fact that: 1) the data in this study show relationship between the pedagogical reasoning of highly competent practitioners and professional phronesis; and 2) pedagogical reasoning and phronesis are not the same thing. While there is a clear relationship among the constructs, it is also clear that the pedagogical reasoning of highly competent practitioners cannot be fully described by professional phronesis; however, all aspects of pedagogical reasoning were found to reflect some aspect of professional phronesis, and all aspects of professional phronesis were found to reflect some aspect of pedagogical reasoning. The following relationships among the features of each construct emerged from the second-order analysis of data.

Feature #1 of professional phronesis, which points to the dependence of professional phronesis on individual practitioners’ histories, experiences, and dispositions relate to pedagogical reasoning in that pedagogical reasoning develops over time through experiences (superordinate theme 1), and one’s experiences and disposition inform the goals for students and self upon which pedagogical reasoning focuses (superordinate theme 3). Feature #2 of professional phronesis asserts that reflection is implied in and required for interpretive judgment through the weighing of generalities and particulars in concrete situations. Reflection, which is implicit in professional phronesis in order to make judgments, is also implicit in the development
of pedagogical reasoning (superordinate theme 1), its operation in both deliberate and spontaneous modes (superordinate theme 2), and in its orientation toward goal setting and achievement (superordinate theme 3). This suggests that reflection is a fundamental and requisite function of pedagogical reasoning, without which pedagogical reasoning cannot operate or grow. Feature #3 of professional phronesis, which involves the requirement for morally committed action, was evident in superordinate theme 2, which describes pedagogical reason as constant operating in both deliberate and spontaneous modes; and superordinate theme 3, which deals with the orientation of pedagogical reasoning towards goals for students (subtheme #1), self (subtheme #2), and the relationship of personal/professional identity to goals (subtheme #3). While the moral commitment of the action required by phronesis is not necessary for action in pedagogical reasoning, the orientation of those actions towards goals for students and self described by the participants of this study were morally committed to right, prudent and wise action. Further, instructional decisions in both deliberate and spontaneous modes revealed a willingness and desire on the part of the participants to take moral and ethical action and to stand by those decisions out of a personal responsibility based on their sense of expertise. In this way, the relationship between the moral dimension of professional phronesis and the pedagogical reasoning of the highly competent practitioners in this study is clear, in so much as their pedagogical reasoning in both deliberate and spontaneous modes was oriented toward goals with moral and ethical overtones. Feature #4 of professional phronesis, which deals with the recognition of the problematic nature of practice, aligned with pedagogical reasoning in regard to superordinate theme 1, the development of pedagogical reasoning over time through experiences. Clearly, the development of pedagogical reasoning through experiences, particularly those related to identifying and working to solve problems of practice, reveal recognition of the
problematic nature of practice. Likewise, pedagogical reasoning involves solving problems of practice in both deliberate and spontaneous modes (superordinate theme 2). As such, the pedagogical reasoning of highly competent practitioners such as the ones in this study might be described in terms of professional phronesis. Professional phronesis feature #5, that professional phronesis is dialogic and relational, aligns with superordinate theme 3, subtheme 4, which describes pedagogical reasoning as dependent on relationships with students in order for them to be achieved. Feature #6 of professional phronesis deals with Pitman’s (2012) notion of the paradox of practice: professional phronesis may be circumscribed by mechanisms of professionalism that prescribe certain actions. That professional phronesis may be circumscribed by mechanisms that prescribe practitioners’ actions applies to all three features of pedagogical reasoning: its development (superordinate theme 1), its operation (superordinate theme 2), and therefore, its focus on setting and achieving goals (superordinate theme 3). If actions are prescribed for practitioners, there is then no need or occasion to utilize or develop one’s pedagogical reasoning since the prescription of actions eliminates the need for pedagogical reasoning to operate, and as such, precludes a practitioner from setting and achieving his or her own goals. The relationship between the reflection implicit in professional phronesis and the necessity of reflection as foundational to pedagogical reasoning further suggests that not only is professional phronesis circumscribed by mechanisms of prescriptive action, but such prescriptive action renders reflection itself unnecessary, thereby circumscribing pedagogical reasoning, as well.

To summarize, each of the six features of professional phronesis is aligned to at least one and up to all of the features of pedagogical reasoning. Of particular note are the relationship between the reflection and judgment required by professional phronesis and all features of
pedagogical reasoning, and the relationship between the paradox of practice regarding professional phronesis and across all features of pedagogical reasoning. These relationships suggest that in addition to professional phronesis, both the reflection implicit in decision making and as a result, pedagogical reasoning itself, may be circumscribed when practitioners’ actions are prescribed. Additionally, the relationship between the morally committed action of professional phronesis and the nature of the goals on which the pedagogical reasoning of the practitioners in this study were oriented clearly points to the moral and ethical dimension of pedagogical reasoning. Finally, direct associations between professional phronesis and pedagogical reasoning were identified in regard to the dependence on individual practitioner’s experiences and disposition, the recognition of the problematic nature of practice, and the dialogic and relational nature of both.

In the narratives that follow, I share stories from each participant in the study from their conversations with me about their experience of pedagogical reasoning. These stories are not the only stories from their experiences that they shared with me during our interviews; however, I chose these stories because they capture the participants’ experiences of pedagogical reasoning in ways that reveal their professional identities and illustrate their professional phronesis. In each instance, the participant identified a problem of practice and took actions in the pursuit of reaching her self-identified overarching goal. The excerpts included here are not necessarily presented in the chronological order in which they came up in our conversations; however, all the excerpts in each narrative came from a single conversation with each participant, either from the first or second interview. I reorganized some of the excerpts from the order that they appear in the transcripts and into the order that they occurred in participants’ experiences so that they could be understood as cohesive stories rather than broken into thematic categories like
presented earlier in the chapter. It is my hope that this organization will allow the reader to sense the ways in which each participant’s pedagogical reasoning reflects professional phronesis in a variety of circumstances in which phronesis is evident in practice as well as the way each individual expressed her professional phronesis in unique ways tied to her professional identity. Throughout the stories, I act as a first person narrator retelling the story as it was told to me. Additionally, as researcher, I include footnotes to highlight examples of pedagogical reasoning as professional phronesis. Most importantly, wherever possible, I allow the participants’ words to tell their stories.

**Melissa’s Pedagogical Reasoning as Phronesis: “I Don’t Want to Fail Them in Some Way”**

By the time Melissa had reached her eleventh year as a language arts teacher, she felt confident in her abilities, and her connection to her role had become deeply emotional. This deep emotional connection to her craft was a source of great distress when she found herself late in her career forced to co-teach with an individual who was unwilling to collaborate on lesson plans or during active teaching, yet still insisted on acting as lead instructor for the majority of their shared time.

To more fully understand the conflict in this story as an illustration of phronesis, the story must begin with the aspects of Melissa’s personality that informed her professional identity. One of Melissa’s greatest motivators as a professional was her desire to remain credible and authentic in the eyes of her students, which she connected to her desire to avoid failure.

I just know for a fact, since I was young, that I am a perfectionist. So the least amount of experiencing that, the better. I don’t want to feel that way. I don’t want to feel that way for my kids. I don’t want to lose the credibility or their respect. I don’t want to fail them
in some way, and so there’s that consistent song and dance to not experience that – that’s a motivator for sure¹.

Her motivation to avoid failing her kids and remain credible in their eyes also had to do with showing them humility.

And I know that, because these are flaws, you have to be aware of what you’re good at and what you’re not good at, and I know sometimes this kids will say, they’ll express that they sometimes feel insecure. Or they’ll say, “you’re really smart, and I feel really dumb – like, you are one of the smartest people I know.” And I’m like, “phhhh,” and if it’s a private conversation, I’ll say, “I want you to know that actually I feel like one of the…” I’m going to cry. I don’t know where this is coming from. I’m sorry. But I’ll share with them that I always feel like the least smart, least intelligent (crying)². I don’t know where this is coming from. But just that, even though that’s coming across – it’s because I don’t want them to feel like I’m failing them. So, they’re usually shocked when I, you know, because the desire is to mask, you know. Whew, I’m sorry. So, yeah, there’s that as a motivator. Insecurities, and masking. And I’m sure to share that with them. That it’s not really that I’m the smartest person; it’s because I don’t want you to know that I’m not the smartest person.

Something emotional happened when Melissa discussed the relationship between knowing what she is and is not good at and using that as motivation to strive for perfection. Melissa’s tearful response in talking about her desire to not fail her students, along with her desire to be open about her own feelings of inadequacy, comes from a deeply held emotional commitment to her

¹ Melissa reveals her sense of personal responsibility for her students’ learning based on her expertise, which is characteristic of phronesis.
² Melissa’s emotionality shows the way in which phronesis straddles reason and emotion, cognition and affect (Sellman, 2012).
profession, as well as a deeply felt sense of responsibility to do right by her students. In what
seems a paradox, Melissa’s perfectionist nature motivated her to work hard in designing and
delivering meaningful instruction so that her students see her as flawless; however, her
perfectionism was met with her desire to be honest with her students about her own insecurities
so that they are not intimidated by what they perceive as her vastly greater intelligence. In that
way, like the great and powerful Oz, she pulls back the mask of perfectionism to reveal humbly
her own insecurities to the very students whom she doesn’t want to fail. Melissa’s personal
feelings about success and her desire to avoid failure are emotionally charged on a personal
level, which translates to her thinking about teaching on an instructional level. Who Melissa is as
a professional is deeply tied to who she is as a teacher.

Problems arose for Melissa when she faced a group of students whose needs were
particularly great. She recalled when they first came to her classroom.

They came with a lot of baggage for the subject area. They, I was told by [the principal]
that they were coming in as seventh graders even though they were eighth graders, and
that for two years they had used their backpacks as pillows, and they had been read to.
And so, when they walked in, it didn’t matter who I was, it was the subject, so…it wasn’t
until probably spring break that I felt like I was breaking through with some of them.
They were finally taking the pillows off the desks.

Unchallenged by their previous teacher and turned off to the subject area in general, these
students needed more than language arts skills. For a teacher whose teaching style relies heavily
on student engagement and classroom community in order to get students to be active members
of a group of learners, these students posed a significant challenge. Even so, since these classes

\[3\] Melissa’s awareness of the students’ “baggage” shows her recognition of the uncertain, complex, and problematic
nature of practice characteristic of phronesis.
contained high numbers of exceptional student education (ESE) students, Melissa faced an additional challenge of sharing her instructional role with an ESE co-teacher.

There were a lot of elements at play. Some schedules were changed, and I ended up having three co-teach classes. They all got loaded, and the co-teacher was in there for three periods, changed those schedules, wanted to take over the class, wanted her own classroom. So, there was [the student’s] learning needs. There was this desire for someone to be teaching content. Trying to figure out a way to – I would become the ESE teacher just so that – I have honestly never felt more damage was done by the set up. It was tough. It was really tough.4

Even though Melissa felt that she was responsible to teach the language arts content, she made a concerted effort to allow the co-teacher to instruct the classes after watching her in the first hour, in spite of the fact that she knew her students were missing out on important elements of instruction.

Yeah, [she] had the PowerPoint present, and yeah, [she] watched me for an hour and wanted to take over for the next two. But, what I ended up doing, because I have my bachelor’s in ESE, so I ended up taking on her role, and then when she was teaching when I had taught the previous class period, I would try to take notes whether or not [the students] were processing, if they were having questions, and if I felt like, I didn’t want to slow the lesson down, but if something needed to be clarified or interjected, I would

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4 Again, Melissa is aware of the complexity of the situation, the many elements that came to bear on it, which reflects phronesis.
try to make sure that it ran smooth for the kids and that they were getting it, and if they weren’t, then, whatever, I’ll be the ESE teacher (laughs).\(^5\)

Rather than collaborating, Melissa found herself in a situation where she had to step aside as the instructor to allow another person to enact her instructional role. She recognized the difference between her own working knowledge of the language arts curriculum and the lack of working knowledge on the part of the ESE specialist co-teacher.

If you are hired on as the content specialist, and so you’ve done the research, especially after NWP, you do the research, and you pull this material for specific reasons, and you get them active immediately, and you know why you’re doing what you’re doing, and someone takes that on, you definitely feel like you’re being less effective because this is the role you were meant to serve under.\(^6\)

Even though the co-teacher observed Melissa teach, she was unable to instruct the students in a way that connected to the goals for the instruction as it was designed, since Melissa had designed the instruction.

I got defensive for the kids because they didn’t have the connective “why?” That translation – getting lost in the translation. And just, when that occurred, knowing that was overall how the kids, you know…Is it better to fight with this person for ultimate control of your class, or is it better to allow them to fill whatever need they have to fill…with the understanding that its ultimately the kids learning the best that they can

\(^5\) Melissa’s interpretive judgment, the result of implied reflection, illustrates phronesis in that she weighs the generalities and particulars of the situation and then takes the action she believes is the best one given the circumstances.

\(^6\) Melissa’s feelings of ineffectiveness due to her inability to enact her professional role illustrates her sense personal responsibility for her students’ learning based on her expertise, as well as her commitment to wise action, both characteristics of professional phronesis.
learn in this difficult situation? So, yeah, I had that compelling “why?” but it’s kids centered. That compelling, like “I’ve done this, I’ve planned this knowing this groups of students, knowing what standards you need to hit on, what they need to learn,” all of those factors combined together. Not having this person come in and planning with me or understanding where I’m coming from…I tried to have that happen. Well, first I tried to have that happen so that I got to be the content teacher, but that was not going to happen after flat out saying it, and then I tried to invite that person to plan with me, and that didn’t happen. So at that point, it becomes, “Okay, how can they learn the best? What’s the least damage they can have?” I mean, really, these kids came in damaged, and then it was like, “what the heck am I going to do for them?”

Without the cooperation from the co-teacher to engage in collaborative planning, Melissa remained in charge of planning all the lessons, which were tied to her specific knowledge of the students, her experience, her research, and her specialization. When the co-teacher attempted to teach from Melissa’s lessons, even after observing her, the lessons were disconnected from Melissa’s purposes for which they were designed. Melissa’s feelings of defensiveness emerge from her feeling that she was not serving in the role she was hired to serve, combined with her deep desire not to fail her students. However, instead of fighting the co-teacher for ultimate control, which would be to commit the same act as the co-teacher by demanding control, Melissa realized that she would have to shift her role to mitigate the damage to the students. She felt

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7 Illustrates Melissa’s reflective deliberation in order to make a prudent judgment, which is characteristic of professional phronesis.

8 The level of ownership that Melissa has over the design of her lessons, and the degree to which aspects of her personal and professional identity are imbued within the lessons illustrate the personal connection to the product of one’s pedagogical reasoning as professional phronesis, as well as the distress caused when the personal connection is stripped from the lessons themselves.

9 When Melissa’s initial action, her effort to collaborate with the co-teacher, fails, she reassesses what next action would be the least harmful for the students. This interpretive judgment and consideration of least harm in the particular situation are characteristic of professional phronesis.
obliged to uphold the co-teach arrangement since she was given the assignment by her principal; yet, she also felt responsible for her students’ learning, which she felt was threatened by the arrangement. She was willing to subjugate herself to an outsider in her classroom who forced a non-collaborative situation in which Melissa could not enact her professional role. Because she believed it would be in the best interest of the students, she worked to support the co-teacher’s efforts by filling in gaps in instruction when and where she could, even though she was the content specialist licensed to teach the course.

**Pedagogical reasoning as Professional Phronesis in Melissa’s Story**

Melissa’s story reveals the way in which an individual’s pedagogical reasoning operates as a function of his or her identity\(^\text{10}\) and what happens when an individual is dissociated from his or her role in the process of planning for and delivering instruction. She found herself in a situation where she was unable to actively teach the lessons she planned. Rather, Melissa ultimately handed over her plans to a co-teacher with no background in language arts, and Melissa relegated herself to the role of observer in her own classroom. In what follows, I provide a recap of the features of professional phronesis evident in Melissa’s story of pedagogical reasoning.

**Feature #1: Professional phronesis depends on aspects of the individual practitioner, including one’s history and experience and one’s disposition.** From childhood, Melissa’s personality as a perfectionist was met with her feelings of insecurity about not being good enough. This disposition influenced her pedagogical reasoning as it applied to how she set goals for student learning and how she engaged with students, and her desire not to fail her students served as her motivation to constantly improve in her practice. Additionally, her emotionality shows how deeply her personal identity was imbued into her professional identity. This became a factor when she was assigned classes for the year, which included the

\(^{10}\)This aspect of pedagogical reasoning is characteristic of professional phronesis.
responsibility of co-teaching with another instructor whose background was ESE. First, in order that the classes qualified to have a co-teacher, the number of students with learning disabilities was high. Ideally, a content teacher and an ESE co-teacher collaborate to design instruction that would meet the diverse needs of the learner population. When the co-teacher refused this kind of collaboration and insisted instead on acting as lead instructor for at least two of the three shared classes, Melissa’s professional identity was assaulted, and the lessons she created lost much of their meaning. While she continued to plan the lessons and create the learning activities that they both would teach, she was aware that the co-teacher lacked understanding of what Melissa called the “compelling why” behind the lessons. As such, the lessons as presented by the co-teacher lacked the depth that Melissa designed them to have. This incidence shows how the degree to which Melissa’s phronetic thinking, in terms of planning for her students’ specific needs based on her experience, history, and knowledge, was imbedded within the lessons themselves – to the degree that the goals for the lessons were lost in translation when someone else attempted to follow them.

**Feature #2: Professional phronesis implies reflection and requires interpretive judgment by weighing generalities and particulars in concrete situations.** The reflective interpretive judgment characteristic of phronesis is clearly evident in Melissa’s awareness that she needed to design instruction and find ways to connect with these particular students. Additionally, in deciding how to handle the conflict that arose when the co-teacher refused to collaborate in planning and further insisted on taking the lead in instruction, Melissa considered what course of action would result in the least damage to the students.

**Feature #3: Professional phronesis requires morally committed action.** Melissa decided to allow the co-teacher to take the lead on instruction for the majority of their shared
time, and instead, act as a support to the lead by assessing the students’ learning as a participant observer and filling in gaps when she felt it was necessary. This illustrates Melissa’s sense of personal, moral responsibility to adapt to the situation in a way that would produce the most good by mitigating what she perceives to be the potential damage to student learning that resulted from the disconnect between how she designed the instruction and how those plans were enacted by the co-teacher who hadn’t participated in their design.

**Feature #4: Professional phronesis recognizes the problematic nature of practice:** uncertainties, complexity, aporias. The complexity of teaching a large number of students with diverse needs as struggling learners was clear to Melissa. She was prepared to face those uncertainties; however, when she realized that the co-teacher didn’t want to collaborate on planning for instruction, but still wanted to act as lead instructor, Melissa realized that they were at an impasse. This problem of practice was, for her, unsolvable; yet, she strove to find the means to uphold her responsibility to the co-teach arrangement while mitigating the damage to her students. Melissa was aware that providing her students with what she believed was an ideal instructional experience would be impossible. However, after reaching this conclusion, and considering the complexity of the situation, Melissa made a decision to act in a support role to the co-teacher so that she could respond to individual students’ needs within the instruction as she observed them.

**Feature #5: Professional phronesis is dialogic and relational.** The relational approach to Melissa’s instruction is evident in her description of her desire to be open with her students with regard to her own insecurities and her role as facilitator to their learning. When she made the decision to allow the co-teacher to act as the lead instructor, she was removed from direct relationship with the students and was thus unable to utilize her relationships with students as a
core feature of her pedagogical reasoning and lessons she prepared for them. She was aware of the disconnect between what she intended as learning outcomes and what she observed in the students’ learning. For Melissa, without the ability to relate the instruction to the students through direct communication, student learning suffered.

**Feature #6: Professional phronesis may be circumscribed by mechanisms of professionalism that prescribe certain actions.** In Melissa’s situation, her professional phronesis was circumscribed by the impasse between herself and the co-teacher. Without the ability to collaborate on both planning and instruction for the students, Melissa was relegated to an observer in her classroom during active instruction even though she remained the designer of instruction. She was pained by observing the co-teacher, whose limited knowledge of the subject matter and lack of input during planning translated into what Melissa perceived as things lost in the lessons she planned.

In theory, the presence of a co-teacher to support the needs of struggling learners should work to enhance the learning experience for them. However, neither Melissa nor the co-teacher entered the arrangement voluntarily. Both were assigned the classes by the principal as a result of the school’s inclusion policy and co-teach model. In spite of Melissa’s willingness to make the arrangement beneficial to students, she was unable to engage the co-teacher in a collaborative partnership – which resulted in what Melissa considered a damaging setup. The result was Melissa’s feeling of ineffectiveness in the role she believed she was meant to serve.

In summary, Melissa’s story illustrates the ways in which pedagogical reasoning and professional phronesis depend on the personal and professional identity of the practitioner. All six features of phronesis are evident in her reflection, which tells the story of how Melissa worked to overcome a problem of practice that cut to the very heart of her professional role and
identity. Due to the circumstances of the co-teach arrangement, Melissa’s pedagogical reasoning process was cut off by her inability to teach the lessons she designed, her relationships with students were limited, which circumscribed her professional phronesis. Melissa’s awareness of the practice problems within the situation, and the actions she took based on reflective, interpretive judgments did not prevent damage to her professional identity within the situation, which created in Melissa a sense of being ineffective in spite of her confidence in her expertise.

Diane’s Pedagogical Reasoning as Phronesis: “I Wish I’d Figured That Out Nine Years Ago.”

Diane had been working as a middle school mathematics teacher for nine years, the entirety of her professional career to that point, when an experience teaching summer school changed the way she thought about effective instruction, her role as a teacher, the needs of her students, and what it would take to help them succeed in math. Up to that point, her thinking about her work, her role, and her students had evolved. As an undergrad, she considered herself a “math person” whose affinity for the subject matter served as her initial motivation to teach. Later in her career, she began to recognize how her struggling students seemed to need more of her. After recognizing that her students could perform well on tests in class with her present, but still failed standardized tests, she sought to determine what was missing. She came across a piece of research found in her district-provided materials that affirmed what she had sensed: that confidence represents a huge portion of students’ achievement, and that without that confidence, there is little to no chance that they would ever be successful. It was then that many pieces of the puzzle started to come together for Diane through her masters program.

It was through a variety of experiences. It was not one single thing, it was just everything kind of coming together, but it all seemed to come together around the same time through
the masters program…it all seemed to – I’m like, “Wow. I wish I had figured that out nine years ago,” but you only know what you know when you know it.  

What pieces? First, through identifying a problem of practice – her students’ lack of confidence in their ability to perform mathematical problems on tests – she also identified a need specific to her struggling learners: the need for a relationship with her. She explains:

I enjoy [teaching] more because I think I’ve figured it out. I mean, not everything of course, because we never know…I think that was the piece that was missing, where you have this kid that doesn’t perform, and you’re like, okay, well, I explained it, or I gave them the strategy, but there was something else missing. And it’s like they needed me to draw them in. And I have to do that by forming a relationship, not by just, okay, we’ve got this math to do…come on, let’s get back to it.

She recognized connections among building student confidence, using the best strategies to teach them, and engaging students in relationships so that they knew she cared. All three of these things became professional goals for her.

I mean, that self-confidence is so key, but it’s not just that. It’s giving them the tools and the strategies, and using the best practices, and giving them graphic organizers, so it’s all lumped into one; but we so often focus on just, “Oh, I’ve gotta teach the strategies.” [Relationship] is the biggest piece, because I can give them all the strategies in the world, but if I don’t engage them, the strategies don’t mean anything, because they’re not going to use it, because they’re like, “why do I care?”

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11 This reflects Diane’s commitment to right, prudent and wise action in her regret that she didn’t figure out the solution to this problem earlier in her career.

12 Diane’s focus on developing relationships with her students in order to help them succeed in building confidence points to the relational nature of her professional phronesis.
Diane realized that in order to help her students succeed in learning the best mathematical strategies, they needed to develop self-confidence in their abilities; and in order for them to develop self-confidence, they needed to first trust that she cared about them and would support them. This would require that she develop relationships with them, and it meant for Diane more than just making time in class to talk. One of the ways she began to gain access to her students was to incorporate more of their personalities into their projects.

I try to incorporate opportunities for them to show their personality in some way, because, you know, that’s telling, too. For example, we have this Math Man project where they have do the area and the perimeter, and they have to classify, but then they get to take that triangle and make a little personality out of it. You know, give it eyes, and a face, and hair, and you can tell so much about a kid sometimes just by what they’ll do when they’re able to think outside the box. And so, it creates that chance for me to get to know, you know, oh, this person is very creative, or sometimes they’ll include things about themselves on their project.

Another way she started to get to know her students was to give them choices in what they do for certain activities: “Giving them choices in what they do, you kind of see, oh, this person usually gravitates toward this kind of thing.” In addition to learning about them, by giving students choices, Diane’s math projects give students opportunities to connect to mathematics in a way that builds relevance, another important aspect of building their confidence.

Getting them to kind of see [math]’s everywhere. You can’t escape it no matter where you go, whether it’s a commercial, whether it’s an ad, or whether it’s just a building. Whatever the case may be. When they’re at the grocery store trying to figure something out, math is everywhere they go. And trying to do the projects gets them to see that.
Because they have to build that appreciation, so by giving them those opportunities, and then also giving them chances to reflect on it, it helps them, I think, make that connection and see the relevance. Even if they don’t like it, to see the relevance.

By helping her students to see that math is everywhere they go, even if they don’t realize it as the same math they are doing in class, she was able to demystify math for them. Not only did she want them to see math everywhere, she wanted them to reflect on it, which led to another teaching strategy that allowed her to get to know her students: math journals. Like the projects she created, the math journals not only allowed her to extend the students’ math knowledge while giving her insights into their personal lives, these journals also became a means by which Diane could begin revealing more of herself to her students. Diane uses these different instructional opportunities to address multiple aims at once: the teaching of the mathematics with the best strategies she knows, ways for students to reveal themselves through the activities and projects so that she can learn more about them, and ways for her to reveal herself to her students. All of these aims serve her goal of building student confidence so that they can be successful on assessments such as the state standardized test. Ironically, the intensive students she teaches are the ones identified as at risk for failing the state standardized test; however, Diane shifted the focus of her instruction from the content itself to the students. In that shift, her primary goal became building student confidence, something she identified herself as a problem of practice relating to this specific group of learners. They could do the math, but they didn’t believe they could do the math, and Diane realized that while she could give them all the strategies in the world, what they needed was not more strategies. What they needed was

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13 Diane utilizes various activities to accomplish multiple goals at once. This shows professional phronesis in her recognition of the complexity of practice. Additionally, her overarching goal of building confidence reflects her willingness to take action with moral overtones in that she is teaching her students the virtues like openness, courage, and self-efficacy.
confidence, and that confidence required that they feel safe to take risks. In order to feel safe to take risks, they needed to trust Diane, and in order for them to trust her, they needed to know her. Diane was willing to change her goals for instruction, her role as a teacher, her methods of achieving the results she sought, in order to give her students what they needed to be successful. She believed it was the right thing to do. Interestingly, part of Diane’s sense of responsibility to meet the needs of her students beyond the course content came from the accountability measures tied to the state test.

Part of that sense of responsibility is from the whole accountability that we’re all driven by, our evaluations, our test scores. We’re ranked. Oh, this teacher had this many percent of kids that scored in this area. I mean all of that. You take on that ownership of “what can I do to help these kids succeed?” because what I do has an impact on them, whether it’s having to take additional coursework, or they get so defeated that they drop out of school. I mean, you take that and you say, “What can I do?” and when you start to explore and you dig, and you think you’ve figured it out, it’s like, “I’ve got to try it, because if I don’t, then if I know that there’s something I could do, and I don’t do it, then that’s my fault.” But if I’ve done everything I can do, and they’re still not successful, I can say that I’ve done everything I know to do, but still keep looking for other things to do.¹⁴

Diane’s commitment to her students’ success, whatever that would take, comes from a deeply felt sense of responsibility to keep trying to find ways to meet their needs. She described this ongoing adaption to her lessons in terms of layering instruction and scaffolding students learning.

¹⁴ Diane’s sense of personal, moral responsibility to do whatever it takes to help her students succeed reflect professional phronesis. Not only does she see it as a moral responsibility, she sees it as her responsibility based on her expertise to do what she knows to do if she thinks it will possibly make a positive difference.
It’s more so about layers in a sense, where you start out with, okay, here’s what you know, here’s where you’re at. Okay, let’s add on just a little bit more. And then, okay, I got it. I’m learning it. I can answer these questions. Okay, let’s add on a little bit more. And also, that self-confidence comes from, I think, and I always say this to my intensive math class, I’m like – we’re not doing baby work in here. We’re not focusing on let’s focus on how to add and subtract. Let’s not do flashcards.

Not only was it important to Diane to scaffold her students success by adding in a layer at a time, it was important to her to maintain her students’ dignity. They couldn’t grow in confidence if they believed that their curriculum was being watered down or wasn’t on grade level.

And so, I tell them, we are doing grade level work. We are doing the same thing that everybody else is doing. I’m giving you strategies, I’m giving you time. You need the opportunity to ask questions, but you’re doing grade level work. And I sometimes, I’ll show them, “Here’s where I got this resource from.” There have been times where when I had an advance and an intensive class at the same time that I would give them work that the advance group did, but I would layer it in such a way. And I’m like, my advanced class did this last week, and now you’re doing it. Or, just trying to get them to understand that they can do it, and sometimes the way that they get there may be different, whether it’s through more time or more scaffolding, but they can do it. And that – I’ve seen great results from it.15

The ability to adapt the curriculum in such a way that preserves the dignity of her struggling students while still scaffolding their learning layer by layer so that they can build confidence requires some degree of freedom to choose what to do, how, when, and for what purpose.

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15 Diane shows phronetic judgment based on her knowledge of what her struggling students need. In this case, she builds their self-esteem by reassuring them that they are doing grade-level work.
The flexibility to teach – I mean, just real simple, like instead of doing, “you have to do this on this day, you have to do this chapter at this time, and this has to come before that,” sometimes it’s like, “you know these two things really go together. I want that flexibility to be able to blend them together in such a way that I’m still covering everything that I need to cover content wise, but just in a different way.” And I think that the timelines are great. They are a great guide, but sometimes a little bit of deviation is warranted, and I think we’re getting further and further away from that. Everything has its pros and cons. Like, we’re moving towards common assessments, and it’s a great idea when it comes to data analysis, and you know, “okay, what was the trend in this classroom versus this classroom?” I mean, I get it. But at the same time, if there’s something within the course of my lesson that, okay, we’re talking about area, but this rounding thing seems to keep tripping us up. I want that flexibility to put rounding on my assessment. Because if we’ve spent that much time on it, and clearly it was an area of need, I want to be able to include that. But if we’re having a common assessment, and that wasn’t something they needed down the hall, that can’t go on the common assessment because it’s not valid to the other class, but it really is valid to mine. So, those types of things, you’re like, wow. Common assessment – great idea in one sense, but in another, its like can we have a semi-common assessment? Can we agree on five questions? Can we agree on ten?16

Diane recognized that in order to teach her students in they ways they needed, freedom and flexibility to make decisions in their best interest is necessary. Knowing what her students need,

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16 This reveals a way by which Diane’s professional phronesis is circumscribed. Her inability to take the actions she feels are in the best interest for the learning of her particular students point to the paradox of practice Pitman (2012) describes when mechanisms of professionalism prevent individual practitioners from acting autonomously in situations that demand judgment.
Diane wants the flexibility to act on her knowledge to design instruction in ways that are best for her particular students, not necessarily the students down the hall.

To know our kids…that doesn’t mean to lower standards. It simply means that when you know your kids, there are certain things that you want to be able to include, or ways that you want to phrase things that you don’t always want to be locked in.

Diane’s experience on a teacher evaluation illustrates this concern.

My evaluation (laughs), you know we have these 41 domains, and we have the planning part and the content, and the on-the-spot thinking. And you know, it’s research-based. I get it. But my last evaluation I did with my intensive class because I just, I just love that class, and I really wanted the administration to see that dynamic of that class. So, we have to do a learning goal, and so, I had the goal, I had the benchmark. The goal was they had to interpret slope, x-intercepts and y-intercepts, and they had to score three out of five from – they had a pre-assessment, and on the post assessment they needed to score three out of five correct. Well, in my intensive class, my goal with them is to try not to put these arbitrary, you know, you have to get a 75%, you have to get this many right, because they’ve already got that internal pressure that they’ve been fighting against for so long. So from their pre to their post, I simply said, “You know I stated this is what we’re doing today, this is our focus. Your goal is to improve. I just want you, if you had a 2/5 last time, your goal is to get a 3/5; if you had a 4/5 last time, your goal is to get a 5/5 this time; but your goal is simply to improve.” Because for them, improving for them is such – that’s a big deal. We celebrate that. We get excited over that. Well, on my evaluation, I was rated as developing, which is a step below good, I guess. Not horrible, but eh, this is an area that needs improvement, I guess I should say. And it was because I didn’t clearly
state what the goal and what the target was in a very clearcut – “3/5, this percentage,” so on and so forth. And I kind of chuckled when I saw that. I’m like, but for that class if I say you have to get this many right, they’re in their minds thinking, oh, I can’t get that many right, because I know last time I only got one right, and oh my goodness, now I’ve got to get two more right. They’re so focused on that, they’re not thinking, okay, what did we learn about interpreting the slope and the intercepts, so I simply said you need to improve. Our goal is just, we’re working towards improving. And this was where I was like, “Oh my gosh!”

Her own experience, her own expertise, told her that it would not be a good idea to tell the students what the specific target was because it would distract them from the learning and undermine their confidence. Furthermore, she invited the administrator to come into that particular class for her evaluation lesson so that the richness of what they were doing in there could be observed. She was blindsided by the low mark on her evaluation, and so in the post-conference with her administrator, she explained her reasoning.

I mean, I accepted the fact that on mine, I had mentioned that the reasoning behind why I had, I had mentioned here’s the reason why I said it that way, and here’s the reason why I took that approach. The person that I was meeting with understood, but according to the rubric and the model, the guidelines, it was not considered “applying.” And it’s like, you know what, for my kids, I’m willing to take a “developing” over an “applying” because that’s what they needed.

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17 This shows how professional phronesis can be circumscribed by mechanisms of professionalism.
18 Diane’s willingness to stand behind her instructional choice, and her commitment to doing what was right for her students shows how her professional phronesis protected her professional identity.
Diane was willing to take the hit on her own evaluation, in spite of the fact that what she did was best practice supported by the very research the district supplied in the training materials on the evaluation system. Regardless, if she had it to do again, she wouldn’t change a thing.

I would do it the same way. If I were doing that same lesson in my other class that was not intensive, sure, I would tell them, this is your target, but because that particular group of kids just needs to focus on the goal, and you know it’s funny because my professional development area this year was celebrating success. So I had to read the research from the person that designed our evaluation system, and it said celebrate the progress you make as you work towards the goal. And I’m like, wow, you know, because that’s what I’ve been trying to do, is “okay, we may not be where everybody wants you to be, but we’re making progress to that point, so we’re going to celebrate that, so we are going to get excited about that.” At first I was like, let me justify to the point of changing it, and I’m like, you know what, in the grand scheme of things, I did what was best for my kids. So, I’ll take it.

Her overarching goal remained the focus of her thinking even as she was knocked on a teaching evaluation for employing a strategy that she believed was in the best interest of her students’ learning for their success.

I want them, of course, to achieve, and to meet those preset guidelines, but I really want them to focus on what they’re doing along the way. And one of the things I tell them is you are doing grade level work, and you are doing the things everyone else is doing, but sometimes you just need more time, and there’s nothing wrong with needing more time. And I give them the example of, well, if I need glasses to see, is that a horrible thing? No. That’s what I need. And I go through that – what we need may not be the same for
everybody, and so when I emphasize to them that sometimes you just need a little more
time, sometimes you need to hear it again, that’s okay. I’m trying to build for them that
idea that they can do it even if it doesn’t, the way they get there doesn’t look like the way
everyone else does. And when I look at the data, though, because I don’t want to knock
the data and totally disregard data. When I look at the data on how they perform, they
meet or exceed the other classes, and you would think on paper, “oh my gosh,” you
know, “these kids are on level.” But they’re right there with everybody else, and they’ve
gotten that boost in confidence to realize, “I can do this. If I need 15 more minutes, then I
need 15 more minutes, but I can still get it done.” And the data is showing me that it’s
working. So, it’s confirming everything I’ve been doing along the way. That is the key to
helping those low achieving students to get on level. That idea of figuring out what they
need and giving it to them so that they can be as successful as everyone else.

Undeterred by the deceptively poor mark on her evaluation, even though it was the lowest
evaluation she’d earned since her early career, Diane stood firm in her instructional decision and
was affirmed by the data on her students’ achievement. What was the payoff?

Well there’s two. The one is that I know that at that moment, I did what was best for
them. But in the long run, because at that moment what we were doing is we were two
weeks away from FCAT. So if me focusing on them improving is going to in the long run
help them be successful on that standardized test, then that’s going to reflect in my
evaluation, because that’s 50% of it as well. So it’s like, well, I’ll take the hit if I can get
the growth over there, and in the end, it will all balance out. (Laughs). So, that’s my
goal.\textsuperscript{19}

\textsuperscript{19} Diane’s professional phronesis is revealed in her assertion that she did what was right for her students.
For Diane, achieving balance is a matter of finding ways to work around what is expected of her and what she knows her students needs; however, she has the confidence in her own instructional decisions to stand behind them, knowing that they will pay off for the students and likewise for her overall evaluation when their growth in achievement is factored in. Once again, this points back to the necessity of relationships with students.

I mean, just in general, we know as teachers, at least over time we learn as teachers that building those relationships is important, making those connections, you know, being involved in the kids’ lives in the sense that they know that you want what’s best for them. We know that that’s great, but now there’s not so much time for that anymore. It’s okay, you’ve got this lesson, you’ve got this assessment, you’ve got to do this, you’ve got to do that, where you feel that you’re almost driven to that disconnect, but in order to accomplish what we need to accomplish, we need to find that balance.\(^{20}\)

An additional payoff for Diane is the reward of seeing her intensive students change as people. With advanced math, it’s almost not as rewarding because whether I really teach them anything or not, those kids are going to be okay. And I know that sounds horrible if somebody super analyzes, but they’re going to be okay in the sense that those kids are driven to do what they need to learn what they can because they want to make that A. Whether they understand anything or not, they want to make that A, so they’re going to be okay. I have to work to get those intensive kids where they are and it’s best practices, but it’s also figuring out what do they need? What does this kid need to get them where they need to be? And it’s just a nice experience when they reflect in their journal and they say, “you know, I wasn’t real sure about this whole intensive math class at the beginning

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\(^{20}\) Diane’s professional phronesis allows her to remain committed to doing what she thinks is right for students and finding balance between what is expected of her and what she defines as goals for her students to help them be successful.
of the school year, but I realize its value and I see that it’s important, and I’m learning things.” And when they talk about learning not only math but learning to work with others, and when you see the kid that used to sit by herself at the beginning of the school year would not talk to anybody, wouldn’t interact with anybody, and we built that community, and now for her to have to sit by herself would be like, oh my gosh, for real? Diane recognizes that helping kids change for the better in ways other than mathematics is not technically in her job description, but she believes it’s one of the benefits of being a teacher.

Yeah, because in building that community, it’s getting them to feel safe. Safe enough to ask questions, safe enough to make the mistake to improve. Safe enough to say, “I really don’t get it, but I’m going to keep trying.” I mean, they have to feel safe, and building that community is what sometimes keeps you going. When they get it, and when that class as a whole outperforms everybody else, it’s just like, “this is why I teach.”

Pedagogical Reasoning as Professional Phronesis in Diane’s Story

Diane’s story reveals not only the ways in which she experiences pedagogical reasoning, but also the ways in which her pedagogical reasoning reflects professional phronesis. In what follows, I provide a recap of the features of professional phronesis evident in Diane’s story of pedagogical reasoning.

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21 Diane’s commitment to helping her students grow as individuals, not just in their ability to do math, shows the moral focus of her professional judgment, which is characteristic of professional phronesis.
**Feature #1: Professional phronesis depends on aspects of the individual practitioner, including one’s history and experience and one’s disposition.** Diane’s history as a struggling learner informed the way she approached teaching students. Her disposition as a “math person” influenced her instructional style in the first 9 years of her practice until she was “jolted” with the realization that her struggling students needed more from her in order to build their confidence. Her experiences teaching advanced students in the past served to juxtapose her experience teaching struggling learners, pointing to the influence of her specific teaching history in her ability to identify problems of practice. These aspects of her unique personality influenced the goals she then set for her students and herself, shifting away from a step-wise approach to cover content and towards relational engagement with her students in order to achieve her goals.

**Feature #2: Professional phronesis implies reflection and requires interpretive judgment by weighing generalities and particulars in concrete situations.** That Diane’s pedagogical reasoning involved reflection is clear. She reflected on her the particular traits of her intensive students and made interpretive judgments to identify specific problems and find suitable solutions. Her recognition that her intensive students, unlike her advance learners, needed more attention from her is based on reflection and interpretive judgment. Later, her realization that what her intensive students lacked the most was not background knowledge or ability, but confidence was likewise a product of her reflection on the specific needs of her intensive students. Similarly, when Diane was faced with a consequence, a low mark on her teacher evaluations in response to an action she made which she believed was in the best interest of her students, her ability to reflect and weigh the generalities of the evaluation process and teacher accountability and the particular needs of her students allowed her to preserve her own professional identity.
Feature #3: Professional phronesis requires morally committed action. Diane’s commitment to take action towards solving the problem of practice she identifies as her students’ lack of confidence is evident in her willingness to go outside of herself in order to develop the relationships with them that she believes are a prerequisite to her helping them develop confidence. Her pursuit to build student confidence takes initial priority over covering content, and as such, reveals the moral commitment to respond to her students’ needs, rather than a strict commitment to compliance. Diane also takes on the responsibility for teaching morals with regard to the values she believes are necessary for her students’ academic success. Her willingness to stand by the decision, which resulted in her low mark on her evaluation, shows a moral/ethical responsibility for her actions. Finally, her assertion that if she doesn’t do everything she can to help her students succeed, then it is her fault if they do not suggests her deep sense of personal responsibility based on her expertise, which is characteristic of phronesis.

Feature #4: Professional phronesis recognizes the problematic nature of practice: uncertainties, complexity, aporias. The problem-solving frame of Diane’s pedagogical reasoning shows her recognition of the problematic nature of practice characteristic of phronesis. Her ability to sense that she may be missing something with regard to her students’ achievement on tests acknowledges her awareness of the complexity of learning. While her summer school students were successful in performing the math concepts she worked on with them in class, she realized there was a disconnect in how that learning translated to their performance on tests. Once she figured out that student self-confidence was essential to their achievement, she continued to problem-solve various methods of building their confidence. Her ability to layer assignments to build in ways for students to reveal their personalities and lives as well as
opportunities for student choice shows her ability to manage complexity in the pursuit of student success.

**Feature #5: Professional phronesis is dialogic and relational.** Diane’s pedagogical reasoning became oriented towards building relationships with students as a means of uncovering access points by which she could learn more about them. Learning more about them served the purpose of engendering their trust, helping them take risks, and building their confidence in the math abilities. Without the communication that comes with relationship, Diane may not have been able to provide for her students the kind of learning environment in which their confidence could grow. So important to her was this relationship piece that she was compelled to step outside of her comfort zone as a reserved person in order to open up dialog with her students about herself, about them, and about the math concepts she hoped they would master.

**Feature #6: Professional phronesis may be circumscribed by mechanisms of professionalism that prescribe certain actions.** Diane shared two examples of how her pedagogical reasoning was circumscribed by prescribed actions as a result of mechanisms of professionalism: first, her inability to revise common assessments so that she could tailor them to the work her students were doing; and second, the fact that she was marked down on her evaluation for making an instructional decision that conflicted with the evaluation tool on which she was being scored. In the first example, she expressed her desire to align her instruction with how her students would be assessed; however, because the way she approached instruction for her intensive students required more review, more time, or additional remediation on certain skills, and since the common assessments for her department were fixed, she was unable to align her instruction with the assessments. She was aware that what is required for her students may
not match what is required for students down the hall, indicating her intimate knowledge of her students’ learning needs. Similarly, her decision not to state a specific testing target for her intensive students during her evaluation observation was based on her knowledge of how her students learn and what they need to be successful. She chose a strategy, (celebrating success along the way to a goal by focusing on improvement), that was supported by the training materials that accompanied the evaluation tool; however, because the specific tool also indicated that she should have provided a specific numeric target, Diane was marked as “developing,” a level of proficiency associated with beginners. Ironically, it was her highly developed sense of her students’ needs, her expertise, her professional phronesis, which guided that instructional choice; nonetheless, the mechanism of professionalism prescribed a different approach, and Diane’s expertise was disregarded.

Interestingly, while Diane’s phronetic action was rebuked, she stood behind her decision because she believed it was what her students needed. For her, it was the right decision based on her expertise, her commitment to act wisely on behalf of her students, and her willingness to accept the consequences of her actions. Additionally, her awareness that her students’ success on the state test just two weeks away would not only justify her choice, but repair her overall evaluation, since her students’ achievement would count for the other 50% of her evaluation. She reflected on the fact that student test data support that what she has been doing in her pursuit to build student confidence has been working. This points to another feature of phronesis – the commitment to moral/ethical action. In this case, her belief that she did the right thing was so strong that she was able to preserve her professional identity in the face of criticism.

In summary, Diane’s story illustrates the ways in which her pedagogical reasoning can be described in terms of professional phronesis. All six features of phronesis are evident in her
reflection, which tells the story of how she transitioned from a content-driven teacher to a student-focused teacher. She describes the development of her pedagogical reasoning over time and shows how through classroom experiences and professional learning experiences, she acquired knowledge that enabled her to be increasingly aware of problems she encountered. She reveals how her disposition has informed her pedagogical reasoning over time, even as her role shifted towards a more student-focused approach. She reveals her recognition of the problematic nature of practice in her awareness of things missing through making interpretive judgments based on reflection by weighing generalities and particulars in situations specific to her intensive students. She also describes how she moved on to take action based on morally committed judgment to do what was she believed was best for her students, which for her, involved developing more engaged relationships with them in order to gain their trust so that they would feel comfortable taking risks. In this way, her relational and dialogic approach to instruction reflects phronetic awareness of communicative interactions as the most effective means of gaining the insights necessary to make the best decisions for instruction.

**Fran’s Pedagogical Reasoning as Phronesis: “My Flow is Off.”**

Over her 22 years of teaching gifted language arts at the middle school level, Fran had refined her craft. She had developed a method for designing instruction to meet the needs of gifted learners on multiple levels, and after years and years of tweaking her activities as a result of learning from mistakes, Fran experienced few problems in her practice. Fran shared a wealth of strategies that exemplified the kind of layered assignments she creates in every area of the content to meet her learning goals for her students.

The best lessons or the best learning has lots of layers to it. Almost anything I ask them to do is going to be intricate and complicated. It can’t be something that they can finish.
quickly, because that just defeats the purpose of what I’m trying to get them to do, which is to persevere and develop those study and work habits and things like that. It also has to be opened enough. For, example, my independent study projects, my vocabulary program, my writing program. I discovered probably doing National Board the power of reflection. I thought I’d been a reflective teacher, but I always reflected at the end of the unit, would ask the kids what they thought, how it went, but we’d reflect on the content. National Board forced me to look at individual students, and make a plan for that individual student, and as a secondary teacher, I’d been trained in content, not in students. So, by going through that process, it totally, that’s another big change for me, the total change in focusing on them as individuals. So, knowing that I didn’t possibly have enough hours in the day to teacher 85 individual students, or 122 individual students, or whatever I had, I had to start thinking about what I was asking them to do in a way that they could continue to show growth in it, and when they had mastered it, that I would be able to offer them either a reward out of that not to keep doing that, but what else would be meaningful beyond that.

Over time, and specifically through the reflective process required by the National Board Teacher Certification program, Fran realized that her gifted middle schoolers needed layered assignments that were intricate and complex enough to require them to persevere and develop life skills, but open enough that the could grow as individuals.

What I started seeking out, finding, holding onto, getting rid of other things was the, were assignments that had enough depth to them that I could score them the same way format

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22 Fran’s shift towards reflection as a means of differentiating instruction resulted from a professional development experience. Both her reflective stance, and her learning from experience are characteristic of professional phronesis.
wise, but the content could grow and change. For example, the vocab lessons. So, my vocabulary program, Scholarship Vocabulary, the book, there’s lessons, and that’s the introduction to the words, and it gives them all this practice with the words, and the lessons are formatted the same throughout the book. The words change, 20 words here, 20 words here, 20 words there. Alright, so the book has some fill-in-the-blank parts, then it has a little paragraph – read the paragraph, it has some of the vocab words in it, then these two questions you have to answer. Well, I expect answers to be a certain way: power of three, give me three details from the reading, this kind of stuff. Paraphrasing is one way, summarizing is another way, and main idea’s another way. And then I’m scoring them, and so we turn them in. There’s two halves of the lesson. There’s what we call the book part, which is the fill-in-the-blank, then the on-your-own-paper part - that’s the writing. On-your-own-paper part’s much harder than the fill-in-the-blank part. Each part’s worth 25 points. If you score 21/25, on 4 of the on-your-own-paper parts, you don’t have to do those anymore. You’ve mastered summarizing, paraphrasing, but it’s not easy to get a 21/25 because I’m a very critical grader. So, if they really work at it, if they read their feedback, if they grow, if they ask questions, if they get good at it, then maybe they only end up having to do half the book on the harder part. They’re still going to have to do the easier part because there are still other things to do with the words. So, I still look for ways to reward them for sustained persevering effort while still building on the skills that I needed them to have.

In keeping with her overarching goal to prepare her students for life, Fran constructed ways to build in the need to persevere, a quality that gifted kids don’t often have because most of the

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23 Fran’s search for the best assignments to meet the specific needs of her gifted learners as well as differentiate for their individual learning needs reflect professional phronesis. Additionally, her desire to layer her assignments to build in complexity reflects her phronetic awareness of the complexity of practice.
things they try come easy to them. Fran’s goal, then, no matter the content, is to encourage her students to sustain perseverance in order to earn an exemption from having to do that tough task any more. Another example of her method to build in complexity into assignments is her independent study project. She explained:

Independent study is a 200-point project. It’s a full quarter research. It includes an oral presentation. It includes research. It includes a bibliography. All skills that I’ve taught separately that have to come together. Then the rubric is broken down 20% for the oral presentation, 15% for the paper work, 15% for how you’ve packaged it with pride, 50% depth and effort on the finished task, which might be board games and models and mobiles and things like that. Actually, independent study projects are something I’ve done since the first year when I was training, taking those classes about how to teach gifted. It was one of those things that was suggested was good for gifted kids. The first year we did them I didn’t have rubrics and things to grade them, and I was taking hours and hours (laughs) to narrative comment and things like that. And so what I learned was certain things were getting written all the time. You need to, you need to, you need to… So, that’s how I learned to create rubrics – is all those things I was finding I was having to write over time. And then, then next few years, and I would keep sample products, and so the next few years when I was introducing it to the next group, I would take out all these sample products, make them grade them, and tell me what was good and bad, and I would take that and build the rubrics until eventually the rubrics didn’t change anymore because every group kept saying the same things.

Fran’s adjustments to her assignments year after year show how her experience informs her pedagogical reasoning, which is characteristic of phronesis.
Fran shared that her independent study project evolved over 22 years through Fran’s learning from the mistakes of each year and applying those lessons to the next year. The process continues still. Finding ways to keep pushing her students’ growth as well as their autonomy has remained a priority.

I continue to tweak the rubrics somewhat, just in case, and trying to help them, because one of the skills I tell them from the minute they step in the door that I want you to have before you leave for high school is that you self-grade using the rubrics.

As a cumulative review of their growth over the year, Fran’s students also conduct student-led conferences, a showcase of their work that they share with their parents.

I ask them at the end of the year to do something called a student-led conference, where their parents come in and they lead their parents through a conference. And they are going to show them all their work samples and their rubrics and things, because we keep them in notebooks and stuff. And that was another thing that came out of the gifted trainings, but I wasn’t – I think I’ve been doing student-led conferences for about 8 years now, and again, after going through National Board, finding that’s probably like a basic ed teacher, “what do I do with my top end gifted kid? How do I push them forward?”

I’m constantly looking for ways to push the upper without breaking the back of the lower, because they will make a decision about whether or not they can try for something. So, there has to be a range in there. So, for me, when I’m trying to choose what I put out in front of kids to do, one, it has to be deep and complex enough that they can do it multiple times in order to show growth, and two, that I’ve gotta have an end ideal in mind that if a kid has reached that, and they seem to be doing it with ease, what am I offer that kid

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25 Again, her professional learning experiences inform her pedagogical reasoning, which is characteristic of phronesis.
next? There have been a couple of kids over the years that they seem to just whip out independent study projects with very little effort. They love them. They have a lot of enthusiasm for them. So I have probably a half-dozen times over the years gone to them and said, “are you burning out on independent study projects? You seem to have mastered them. You are getting these good grades. Would you like to do something else?” Well, one said, they were brothers, they were doing that, so I had them create a guide, a written guide for other kids how to get good grades on independent study projects, and they took it and ran with it. They did all these helper sheets and things, and they created this whole little thing, we bound it up, published it, their names were on it, and that was – they got the grade for that. Another couple, they went through the entire independent study files, they organized them, created a list of them, we took it beyond the research and went a little more secretarial almost, but it was a good use of their time. They had to work on the computer, they had to create a database. They had to do a lot of things that they wouldn’t have done otherwise. And I’ve had some that say, “no, we’re fine.” They like them. So they enjoy them, they’re still giving presentations, the other kids are still learning from them, and I’m okay with that. But they know they had the option to go deeper, to go a little more.

As she explained how she creates depth, complexity, and openness in her writing program, she also revealed her discovery of a problem of practice that emerged within her otherwise well-oiled program.

With their writing assignments, I use the same rubric for all writing assignments, again, so they can show growth. “Am I growing in ideas and growth and organization, regardless of whether it’s a piece of poetry, or a research paper, an essay, or things like
that?” And then keeping these portfolios and asking them to look at it. So, this year the school went learning journals, and my learning journals have not been for my CAB – content area based - reading. It has been for ongoing analysis and reflection. So, we set goals at the beginning of the year, and we would write in them about once a week, and we’ve been tackling grammar this year. They used to come to me with some basic grammar background, and they don’t anymore, so I actually, went back to some direct teaching of grammar this year, and it’s been hurting us. It’s been hurting our heads a lot, and I’ve been learning about how to do that and better ways to do it.26

In response to recognizing a lack of basic grammar knowledge in her students, Fran chose to use the school-wide learning journal to assist her in her attempt to teach grammar, a prospect which she shared was hurting them all. As she started to describe the problems she’d been having with the grammar instruction, it occurred to me this situation was inconsistent with the other smooth-running strategies. In all the other areas she described, she knew exactly what she wanted to do, the reasons why, the short and long term goals, the ways to reach the students, what the students need, and how to build in complexity to accommodate all those goals. She knew what to do when the students were done and still needed more to do. It was all working well with few problems. I asked her to explain.

Bottom line, I, we, had a phenomenal system that worked really, really well for my program, and that was the STREAMS. The whole district was on the STREAMS, and it was this big idea every quarter, and there were 12 of them for 6th grade through, and it worked great because I had the kids 6th grade through, so I could tie in the content, I had a science fiction unit, I had a this, I had a that. It was wonderful. We were

26 In spite of the fact that Fran experiences fewer problems after 22 years of problem solving her practice, she recognizes new problems when they arise, which is characteristic of professional phronesis.
interdisciplinary, and they went all LFS, and went curriculum maps, and went all content – straight. So I held on to my STREAMS for a few years. And finally, actually the last two years, all of that is has completely falling apart, and I’ve been busy trying to figure out, “okay, of the old curriculum, what do I want to hold on to? Which units really resonate well with the kids?” I kept the independent study, I kept the vocab – because those were not topic dependent, they are skill based. So, I decided I would pick two core novels and try to build my new curriculum around that. And then it dawned on me last year that all my talk about, within the vocabulary program, about his being a noun, that being a verb, they were just giving me the head shake. There was nothing going on upstairs as far as them knowing what kind of word went into that blank. That was no longer helping them figure out the vocabulary, the part of speech. So I went, “Shit. I’ve gotta teach them grammar.” And I’m a firm, I gotta, I’m a firm believer that they’re not brain-ready for grammar yet. Grammar is one of the most abstract things there is. I was just telling them this yesterday, again, I said we’re talking words about words, and words are already very abstract. And yes, gifted kids get to abstract before other kids, but it’s still tough stuff. So I promised them that as much as we’ve been working on that this year, that in 9th and 10th grade, someone’s going to do grammar with them again, and it’s going to be easier, not just because I’ve laid a little foundation this year, but because their brains are going to be ready for it. A few years ago, back when I was first started with the language arts gifted classes, I did diagramming with kids, and I still have one or two that write me from time to time that remember diagramming sentences, and they love it. And what I know about diagramming is that one, I’m a geek about it. I love it myself. Two,

27 Characteristic of professional phronesis, Fran makes reflective, interpretive judgments about how best to adjust her previous curriculum to meet the needs of her students.
it’s really good for spacial learners. It’s not good for every learner, but it’s really good for spacial learners. But even to talk diagramming, you’ve gotta have a basic understanding that words have labels and structures and stuff like that within a sentence. And I’ve known for a little while that they weren’t understanding in their writing why some sentences were fragments and some were run-ons, so I knew we had some basic holes in our background knowledge. It wasn’t enough to cause them in any great pain in their grades or worry, but, and those that cared enough about it to come and ask about it, I was doing the individual thing with during independent work time or when we’d conference. So this year, and my Writing Project training says you don’t teach grammar in isolation, and I believe that 100%. But I also know that at some point, you’ve got to do some direct teaching of the terminology, or you can’t have a decent conversation about revision. So my 7th graders this year, and my 8th graders got the same instruction in grammar. And what’s been killing me is the assessing end of it because I started off thinking nouns would be the easiest things. I did nouns, adjectives, and pronouns. There was a chapter in the grammar book. We did the grammar book chapter, we did all this, and I gave them a sentence and I said identify all the nouns, pronouns and adjectives. They couldn’t do it. The test scores were awful. And we were doing the assessment, and it was my created

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28 Fran shows that she has an understanding of both her students’ preferences and the benefits of certain activities to particular types of learners, which reflects professional phronesis in its recognition of the particular characteristics of her learnership.

29 Fran’s decision to teach grammar explicitly rather than in the context of writing was a result of a reflective, interpretive judgment that weighed the generalities of what she believes is sound grammar instruction against the particulars of this concrete situation, which she decided warranted her attempting to teach grammar by a method she didn’t believe in 100%. This also reflects her professional phronesis by her commitment to take the action that she believes is the wise action, even if it means going against her belief about instruction. In order to do whatever it will take to help her students be successful, she is willing to compromise on her beliefs based on her sense of professional responsibility and commitment to her students.
assessment, what I had not done was match – I had not assessed – I did not create an assessment that looked like any of the practice.\footnote{Fran’s realization that her assessment didn’t match her instruction reveals the reflective nature of her practice.}

After realizing that some intervention was necessary on her part to fill in the gaps in her students’ background knowledge of basic grammar terminology, Fran decided that some explicit instruction would be necessary, even though her professional development training had taught her otherwise. She believed that she couldn’t move forward teaching grammar in the context of writing until the students had a better understanding of grammar terms, and this problem represented a barrier to teaching writing. Having started with what she thought was the easiest grammar forms, she was surprised when the students weren’t understanding the concepts well enough to pass her test. She then realized that she had not provided her students an opportunity to practice the grammar concepts in the same format that they would be tested. When she was grading the assessment, she knew something didn’t go right. “The immediate thought is we can’t move forward. This didn’t work. We didn’t get there. They don’t get it.” Fran’s frustration grew.

I have all of these mixed feelings about teaching grammar to begin with, that frustration just continues to build. Okay, I underestimated what they knew, overestimated what they didn’t know.\footnote{Fran took personal responsibility for the failure of the grammar lessons based on her expertise, which is characteristic of phronesis.} Didn’t match the assessment. Maybe I’m asking too much on the assessment, because, yes, they can pick a noun out, but I asked them to tell me if it was a proper noun, a compound noun, a collective noun, let see – all this stuff. So, should I just back off all the subcategories? I asked myself. Should I just go flat out noun, adjective? But see, then, you’ve got the 8\textsuperscript{th} grade grammar book, and I’ve got a 8\textsuperscript{th} grade textbook that’s a different publisher, and they use different terminology for things, and they’re not exactly the same as I used to know them by under how I learned grammar, and now I’m
frustrated there, too. So, I’m scrambling. I’ve got other materials. I feel like I’m building a plane a trying to fly it, and not frustrate them. I don’t want to turn them off from grammar, but my plan was to get through all the parts of speech this year at a base level, and so finally at the end of the year, I did verbals with the 8th graders. I’m doing verbals with them right now, and I’m finding that they still, like we left if for a while – we were working on other things, so we were doing verbals this week, because I wanted to start To Kill a Mockingbird with them tomorrow. Oh, yeah. Time to do it, and you can’t do it every day, day in and day out. You gotta rotate around, and that’s another thing that’s killing me about not having my whole years’ – I need an overview of my year to feel comfortable so that my flow can – My flow is way off right now.

In her attempt to figure out what she should do next, Fran weighed various options like starting over at the beginning and removing subcategories of terms, in addition to dealing with further complications from the resources she has at her disposal from which to teach the concepts that use different terminology for the same concepts and present different rules of grammar than Fran remembers from when she learned it. Desperate to find materials that would work, she felt pressed for time to get it all done and uncomfortable operating in without an overview for the whole year. Having to adapt the grammar curriculum to meet the needs of her students after being forced to abandon the program she felt worked best caused a disruption to the seamless flow of the program, which up until that point, had been growing without major problems. She explained the difficulty as a product of change.

Change from the old. Trying to build for the common core, to understand what the common core is really going to expect, what the tests are really going to expect so that

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32 This illustrates Fran’s reflective, interpretive judgment within the situation by weighing generalities and particulars within the situation, which is characteristic of phronesis.
they’re well prepared for them and I don’t send them in unprepared. They’re smart – it’s not about the content. It will be about for them, can they understand the question the way it’s worded? Can they actually give them the detail that they need? So, making sure that I don’t waste my time creating new curriculum that isn’t going to serve all these needs. I don’t have time to recreate a curriculum every year. I need the chance to create. What I hate is doing something that I know I’m never doing again. It feels like a waste of time for me and for them, and I don’t want to do that. That’s why I’ve just been throwing everything I’ve been doing with grammar this year just in a file so that this summer I can go through the file and go, “That didn’t work. Ain’t doing that again, but this I could build on, this I can work with, this I can fix, this I can take – oh, this, and this, and maybe I can tweak it and do this.” So, I need a plan, I need to overview. I can’t do the whole year on exploratory mode. I don’t have that kind of energy anymore, that kind of patience with myself, and I demand more of me, and you know there are lots of times I’m so tired I go, could I just give myself permission to phone it in one day or two and not give them 110%. It feels dishonest. It feels like malpractice. It feels like letting them down. Now, that’s not to say that if I’m bone-ass sick, or tired, or completely out of it, you know, just to keep my head on my shoulders, but they’ll never be two of those in a close proximity of time. I just, it’s a waste of their time, and time is something I can’t ever give them back, and I can’t get it back either. And, you can’t do that too much with kids before you set up an expectation of “less than,” and I have to keep the expectations higher, or there’s nothing for them to reach for. They’re only going to go as high as you go.

Fran recognizes the problematic nature of adapting to new curriculum and the uncertainties that the transition will bring. Likewise, she reveals her sense of personal responsibility to meet the needs of her students based on her expertise. Both are characteristic of phronesis.

Fran expresses a moral obligation to not let her students down, maintain high expectations for them, and model those same high expectations for herself, which is characteristic of professional phronesis.
same is true for me and my administration. I’m going to go as high as I’m allowed to go, or encouraged to go, and you know, that – it’s, so all of that is connected, too. Where I feel the freedom, where I feel the encouragement, then I can turn around and give it to the kids. When I feel like I’m having to stand between the kids and something horribly oppressive, then I’m defensive and I don’t get the chance to push them as much because I feel like I’m protecting them from something awful. There have been times where that’s been the case, but mostly, I call it the trickle down theory of education, Reaganomics had the trickle down theory. So, bottom line is I have to protect them\textsuperscript{35}, and if I’m always in protective mode where I’m trying to keep the ugly away, then they’re not getting the best I can give because I don’t have the energy, and I’m trying to push them as much as I can within the restrictions, as opposed to when I have the freedom and the autonomy to really push forward.\textsuperscript{36} And right now with the common core, we’re just in this, and we all feel it. The last five years there were the first part of it. I felt a little. I felt, we all felt, beleaguered and oppressed. The last two, I haven’t felt beleaguered and oppressed, but I’ve felt tired because I’m in flux. I need to get out of flux and get where I can see a path. I’ve gotta get my path clear, so this year was the last of it. When I start next year, I’m going to at least on, I’ll have the first few steps on paper.

For Fran, the transition to new standards brings with it the need to consider the changes against many exiting variables, particularly with the complexity she aims to build within each assignment.

\textsuperscript{35} Fran’s sense of moral responsibility to “protect” her students reveals her willingness to take action with ethical and moral overtones and stand behind those actions.

\textsuperscript{36} Fran’s freedom and autonomy to make instructional decisions based on her expertise is circumscribed by mandated curricular restrictions, which is likewise characteristic of professional phronesis.
And that’s the thing. When they change it all up, it affects so many things in terms of how I do it, and maybe I should be looser, maybe I should be more flexible, and just be able to fly by the seat of my pants, but I have to sacrifice, in my mind, I have to sacrifice credibility, authenticity to grow. If I can’t ask them to reflect and analyze their growth, if I can’t build a program that moves them forward, and I’m just giving them a series of random activities, they might be having fun bouncing from here to there, but nothing that we can then point back to and say, “I’ve grown here, here, and here.”

Fran’s many years of reflective practice had allowed her to operate for an extended period of time with few problems. When she recognized a problem – her students’ lack of knowledge about basic grammar – she was faced with a dilemma that required her to make decisions about what action to take. Through reflective, interpretive judgment, Fran determined that she must teach grammar explicitly, even though she believed wholly that grammar should only be taught in the context of writing. Nonetheless, she made a decision based on her understanding of the specific situation – that without basic knowledge of grammar terminology, teaching grammar in context would be impossible. She must challenge her own belief that explicit grammar instruction is ineffective, but her sense of moral responsibility to make sure her students were prepared for the next levels, and even life, prompt her to attempt explicit instruction. Throughout the process, she was unaware of problems until the students failed her test, which prompted her to once again reflect and interpret what the next step should be. Fran connected these difficulties with the uncertainty that had resulted from the transition to new standards, and she explained the difficulties of creating new curricula that reflect the kind of complexity and layered purposes that she believes works best for her gifted learners while accommodating new restrictions.

Fran’s desire to have the freedom to create the kind of program she believes produces the best growth in her students reveals the relational and dialogic nature of her reasoning, which is characteristic of professional phronesis.
Pedagogical Reasoning as Professional Phronesis in Fran’s Story

Fran’s story provides a glimpse at the way that the pedagogical reasoning of a 22-year veteran operates when so much of what she does has been tested and problem-solved over many years. She explained at length the cohesive design of what she calls her program. She deeply invested in the structure of the program, her experiences with gifted learners, and her relational approach with regard to establishing relationships with students in order to learn what they need specifically. The design of her program itself reflects her professional phronesis: having solved problems over the course of many years, and having made adjustments and adaptions based on her informal research, she had no trouble explaining the reasons for why she did the things she did. Striking in her story is how she responded when she found herself facing an instructional and curricular problem that required her to create new instructional methods to address the problem and meet students’ needs. In what follows, I provide a recap of the features of professional phronesis evident in Fran’s story of pedagogical reasoning.

Feature #1: Professional phronesis depends on aspects of the individual practitioner, including one’s history and experience and one’s disposition. The very nature of Fran’s ability to discuss the depth of her reasoning behind the structure of her language arts program reveals the depth of her personal connection to her instruction. The history she provides in regards to the development of certain activities over time shows how her pedagogical reasoning has evolved over time through experiences. She also reveals the ways in which her participation in professional learning experiences such as Nation Board Teacher Certification informed shifts in her thinking. Fran’s openness about what she needs in order to feel effective and successful shows an awareness of her individual strengths and weaknesses as they relate to her role as a curriculum designer and instructor.
Feature #2: Professional phronesis implies reflection and requires interpretive judgment by weighing generalities and particulars in concrete situations. Fran’s reflective, interpretive judgment is evident in her descriptions of her learning activities. The ability to provide reasons for such things as making assignments complex enough so that the students don’t finish them too quickly shows her understanding of the particular traits of gifted learners; as such, this understanding informs her judgment when designing activities for them that will meet their developmental and learning needs. Fran’s reflective stance is also evident in her deliberation about how to address the problem of her students’ lack of background knowledge in grammar. Her interpretive judgment includes making a decision to pursue an instructional method that she previously didn’t believe in after considering the specifics of the current situation.

Feature #3: Professional phronesis requires morally committed action. The moral quality of Fran’s pedagogical reasoning and actions is evident in her belief that she owes her students a rigorous experience that will prepare them for life without wasting their time. The same sense of personal responsibility is evident in her statement that she feels responsible for protecting her students from practices that she believes to be harmful. With regard to her decision to teach grammar explicitly, even though such a method conflicts with her personal belief about effective grammar instruction, shows her moral commitment to the students’ success, even if that means working within a method she doesn’t prefer.

Feature #4: Professional phronesis recognizes the problematic nature of practice: uncertainties, complexity, aporias. While after 22 years, the problematic nature of instruction seemed overall less problematic for Fran, she still shows a keen awareness of the problematic, complex, and uncertain nature of practice, both in her examples of the assignments and in her
identification of her students’ lack of grammar knowledge. Her descriptions of the assignments she had created over time which meet her goals of being both complex and open reveal how she worked over time to solve problems she encountered with them. When she is faced with the problem of teaching grammar, she is not only aware of the problem itself, but once she identifies it, she considered the uncertainties and problems she faces as she goes.

Feature #5: Professional phronesis is dialogic and relational. Fran’s language arts program was developed over time by means of learning about the gifted learner through relationships and dialog. Fran’s understanding of what students will or will not do, how they like or do not like certain activities, and what things are particularly important for gifted learners – like perseverance through difficult tasks, and seeking help from others – all come from the relational and dialogic nature of her practice.

Feature #6: Professional phronesis may be circumscribed by mechanisms of professionalism that prescribe certain actions. Fran was clear that she felt circumscribed in her ability to make and enact decisions regarding instruction based on the restrictions placed on her by her administration as well as the adoption of new standards. Believing that her previous method worked well, it became difficult for her to create a means of teaching grammar to her students after having to abandon her old method. Additionally, Fran’s professional phronesis was assaulted by the restrictions she felt associated with the new standards that prevented her from pushing her students in the directions she had determined were necessary for their learning experience.

In summary, Fran’s story illustrates the ways in which pedagogical reasoning and professional phronesis operate for a veteran teacher. All six features of phronesis are evident in her reflection, which tells the story of how Fran worked to overcome challenges posed by her
students’ lack of background knowledge, as well as being restricted from using a program that she believed was effective in the past. Fran’s desire to protect her students “from something awful” shows the almost parental way in which Fran related to her students, acted in their best interest, and made instructional decisions for them based on instructional goals based on her expertise and her sense of moral responsibility to prepare them for life after middle school.

**Conclusion**

In this chapter, in order to capture the richness and complexity of the phenomenon, I presented the results of the interpretive phenomenological analysis in two parts. In the first section, I presented the three superordinate themes and the eight subthemes emerged from the cross-case analysis of the rich data provided by the participants regarding their pedagogical reasoning (Question 1). The first superordinate theme, “Pedagogical Reasoning Develops over Time through Experiences” to organize the two subthemes, “Pedagogical reasoning develops over time by means of professional development experiences” and “Pedagogical reasoning develops over time through identifying problems of practice through purposeful reflection and problem solving.” The second superordinate theme, “Pedagogical Reasoning is Constant and Operates in Two Distinct Modes: Deliberate and Spontaneous” organized the two subthemes, “Pedagogical reasoning as deliberate decision-making,” and “Pedagogical reasoning as spontaneous decision-making.” The third superordinate theme, “Pedagogical Reasoning is Oriented Towards Achieving Multiple Goals at Once,” organized four subthemes: “Pedagogical reasoning is oriented towards goals for students beyond the acquisition of discipline-specific knowledge;” “Pedagogical reasoning is oriented towards goals for self in terms of one’s role in student learning;” “Pedagogical reasoning is related to individual personal and professional identity;” and, “Pedagogical reasoning is oriented towards developing relationships with students
in order to understand specific learner characteristics and needs and earn student trust.” Excerpts from each participant transcript explicated variations among the participants’ experiences of each theme based on the participants’ unique contexts.

In the second section, I presented the six traits of professional phronesis adapted from Kinsella & Pitman (2012b). Professional phronesis: 1) depends on aspects of the individual practitioner and is informed by her history and experience as well as her disposition; 2) requires discernment and implies reflection in order to make interpretive judgments by weighing generalities and particulars in concrete situations; 3) requires action based on such judgments, and this action is linked to a moral commitment responsibility to act rightly; 4) is relational and dialogic; and fifth, professional phronesis recognizes the problematic nature of practice; and 6) may be circumscribed by mechanisms of professionalism that prescribe certain actions. Given these features, I then compared these six features of professional phronesis to the features of pedagogical reasoning that emerged from the participant data. Following a discussion of the intersections between the features of professional phronesis and pedagogical reasoning, I presented three illustrations of pedagogical reasoning in terms of phronesis in the form of individual narratives based on stories shared by each of the participants. These case-level presentations of the data allow for a deeper understanding of the complexity of the participants’ pedagogical reasoning as lived and elucidate the themes across cases as examples of professional phronesis. The cases begin with a description of each participant’s professional identity and overarching goals for instruction.

While in this chapter I withheld interpretive narrative in light of the literature discussed in Chapter Two, in the chapter that follows, I take up the discussion of the data in terms of the literature to provide insights into the ways in which the data brings new understandings and
interpretations. I first present a discussion of the each superordinate theme that resulted from the data analysis by considering the ways in which each reflects extant models of teacher reasoning, as well as ways in which the findings inform new insights regarding teacher reasoning.

Following this discussion, I discuss the significance of the study, discuss limitations, reflect on the research processes, and suggest directions for future research.
Chapter Five

Discussion

I undertook this study of teacher pedagogical reasoning in response to a growing concern that something of fundamental importance is missing from the vision of what it means to be a professional, particularly in the field of education. The literature suggests that a view of teacher knowledge that acknowledges phronesis as a significant way of knowing in teaching, and which compliments episteme and techne to provide a balanced framework for teacher knowledge is necessary (Flyvbjerg, 2001; Kinsella & Pitman, 2012a; Polkinghorne, 2004; Schön, 1983; Van Manen, 1977; Zeichner, 2012). Considering the teacher-as-technician view and the instrumentalist values that pervade professional schools, practices, and policy decisions (Kinsella & Pitman, 2012a; Zeichner, 2012), the aim of this study was to examine the pedagogical reasoning of highly competent teachers with the hope of identifying characteristics of professional phronesis within participants’ accounts of their experiences. In this chapter, I present a discussion of the findings for each of the two research questions guiding this inquiry.

1) How do highly competent teachers perceive and describe their experience of pedagogical reasoning?

2) In what ways can the knowledge that highly competent teachers employ in pedagogical reasoning be described in terms of phronesis?

Following the discussion of the findings for each question, I discuss the significance of the study, recommendations for future research, recommendations for practice, limitations of the study, and finally, reflections on the research process.
Research Question #1: How Do Highly Competent Teachers Perceive and Describe Their Experiences of Pedagogical Reasoning?

The analysis of data for question #1 resulted in three superordinate themes that emerged from the participants’ experiences of their pedagogical reasoning. These three superordinate themes reveal how pedagogical reasoning develops over time, how it operates within practice, and the goals upon which it is focused.

**Pedagogical reasoning develops over time through experiences (Superordinate theme 1).** A central feature of pedagogical reasoning described by all three participants is the ongoing nature of its development over time. Participants reflected on the evolution of their pedagogical reasoning as influenced by two types of professional learning: traditional teacher professional development experiences such as graduate course work, teacher institutes, and district training; and problem solving to find solutions to problems of practice they identified themselves. In some instances, their own problem solving efforts led them to traditional professional development, while in other cases traditional professional development enabled them to identify problems within their practice. Their engagement in both types of learning experiences was a result of their desire to improve their practice, and as a result, shaped their pedagogical reasoning over time.

**Formal professional development.** The fact that pedagogical reasoning develops over time through experiences may seem obvious. It is worth noting, however, that as each participant talked about her pedagogical reasoning, each made a comparison between how she reasons about her instructional choices in the present versus how she reasoned early in her career. This points to an awareness that the participants’ thinking had evolved over time as a product of certain types of learning experiences. All participants attributed the development in their pedagogical
reasoning to various types of formal, self-selected professional development such as graduate studies, summer institutes, district in-service, and the process of advanced certification. A commitment to improving their practice through self-selected, purposeful study was evident in the fact that all three of the participants either held or were working toward a master’s degree at the time of the study. It may be that self-selected formal learning opportunities provide practitioners the opportunity to reflect on their practice in ways that they might not otherwise. While one participant did discuss meaningful learning as a result of mandatory district in-service, it was self-selected professional development to which the participants attributed a transformation in their thinking. These self-selected professional learning opportunities such as graduate studies, National Writing Project summer invitation institutes, and National Board Professional Teacher certification, unlike most mandated teacher inservice training, all center on developing what Cochran-Smith and Lytle (1999) call knowledge-of-practice.

Knowledge-of-practice refers to knowledge-making as a pedagogic act that is constructed in the context of use. This knowledge-making within the context of use reflects the active way of knowing characteristic of professional phronesis. In this conception, the teacher is viewed as agent and teaching as agency in the classroom and in larger contexts. Formal professional development opportunities that cultivate knowledge-of-practice include occasions for teachers to challenge their own assumptions; identify salient issues of practice; pose problems; study their own students, classrooms, and schools; and construct and reconstruct the curriculum. The participants in the present study sought the kind of learning opportunities that promote a growth in knowledge-of-practice (Cochran-Smith & Lytle, 1999), which points to their identification as learners with a motivation to build their knowledge of practice in ways that were specific to their contexts.
Additionally, the knowledge acquired through formal professional development may become a foundation for new understandings of practice to emerge. For example, Fran contended that her extensive professional development prior to her first independent teaching experience provided her with a foundation upon which to draw in making her decisions early in her career. Later in her career, the knowledge she acquired through the process to obtain National Board Professional Teacher certification had a profound influence on her pedagogical reasoning, sharpening her focus on the needs of and differences among individual students. Melissa described how she adopted aspects of the National Writing Project model and philosophy in her classroom, having had a meaningful learning experience herself during a summer institute. In the experiences of these participants, formal professional development provided an occasion and purpose for them to engage in focused reflection on their practice, and an opportunity to gain new ideas for how to improve on areas they then identified as needing improvement.

**Informal professional learning as problem solving.** Learning as a result of problem solving was evident in the experiences of all three participants, and this type of informal teacher learning catalyzed the development of the participants’ pedagogical reasoning. As occasions for reflection on practice, informal professional development is reflected in Shulman’s (1987) model of pedagogical reasoning in that Shulman suggests teachers arrive at new comprehension of content and purposes for instruction by looking back over the actual outcomes of instruction versus the intended outcomes. It is likely that new comprehension of teaching occurs as a result of reflection on following instruction; however, Shulman’s model does not acknowledge the value of informal professional development as the mechanism for continuous reflection.

Schon’s (1983, 1987) model of reflective practice locates professional learning in the context of the teaching situation as a result of a problem-solving frame. For the women of the
study, solving problems of practice was an especially powerful means of developing their pedagogical reasoning. Like Schon suggests, all three participants described professional learning experiences that occurred as a result of a disruption to what had previously been routine. These instances when a puzzling outcome in the learning situation emerged became occasions for reflection in the action-present. For example, both Melissa and Diane talked about reading student body language for signs of confusion during lessons and reading these signals as an indication that their intended outcomes had not occurred. These were occasions that required immediate response in order to arrive at the intended outcome. Immediate adjustments to the lesson were the result of reflection-in-action, and while they didn’t take more than a few seconds to decide what to do next, the actions they undertook retrieved their original intention, albeit with additional steps that they had not anticipated. These additional steps, then, became part of a new routine in considering ways to design instruction to address the needs of the specific learners for whom the original lessons had been inadequate.

Other problems were not realized as ones requiring immediate action within a lesson, but showed awareness of broader problems. For example, Diane recognized a significant problem of practice when her struggling math students were successful in performing mathematical problems for tests in the classroom, yet they still failed standardized tests. This realization did not result in a real-time adjustment to her lessons, since those lessons were effective in teaching the math skills as evidenced by the students’ ability to perform on class tests. Rather, this identification of a disconnect in their ability to perform in certain situations led her to search for a reason beyond their abilities or her techniques. This led her to discover the role of student self-confidence in student achievement. Diane’s solution-seeking reflects Schon’s (1983/1987) notion of problem framing through reflection-on-action, and while this kind of problem framing
occurred outside of an immediate instructional moment, it extends beyond the type of reflection on instruction that Shulman describes. This type of reflection involved Diane’s desire to help her students be successful in a setting outside of her control by incorporating the building student confidence into her instructional goals. In order to build student confidence, she realized that her role must shift to allow for a more open relationship with her students that would result in trust. She also realized that her instructional strategies must incorporate more intermediate steps that would allow for students to experience success on increasingly difficult tasks, thus building their confidence, even if doing so took more time within the daily schedule. This type of problem solving goes beyond adjustments to lessons within the teaching situation to involve solutions that require systemic changes to the pedagogical reasoning and professional identity of a practitioner.

**Development of pedagogical reasoning over time through experiences and phronesis.**

The development of pedagogical reasoning over time through experiences reflects professional phronesis in that it is informed by one’s history and past experiences. The participants in this study identified both formal professional learning and learning as a result of reflection on problems of practice that emerged during routine practice activities as shaping their pedagogical reasoning over time. Both of these types of experiences: 1) had a cumulative historical effect as a foundation of knowledge that they brought to new teaching experiences; and 2) became catalysts for reflection on new problems of practice. These types of experiences also point to professional phronesis in that making context and situation specific judgments for what should be done is essential for both formal professional learning as well as informal learning by identifying problems of practice. The problem-solving frame described by each of the participants reflects the recognition of professional phronesis that practice is problematic, complex, and often uncertain.
Pedagogical reasoning is constant and operates in two Distinct Modes: Deliberate and Spontaneous (Superordinate theme 2)

All of the participants of this study described pedagogical reasoning as something they experience constantly, both within the bounds of their professional settings and teaching situations, and during otherwise personal time. While all three participants described pedagogical reasoning as deliberate in relation to taking time to plan for instruction, only two participants described the spontaneous nature of their pedagogical reasoning in relation to making adjustments to planned lessons during active instruction. Deliberate pedagogical reasoning emerged as occasions to step back and reflect on previous teaching experiences while looking forward to hash out ideas, lessons, and other nuts and bolts such as materials and organization of units over available instructional time. Spontaneous pedagogical reasoning involved the necessity of considering multiple factors at once in order to make a seamless adjustment to instruction, beginning with an awareness and recognition of something problematic within the lesson, followed by a feeling of unpleasantness, which then prompted a decision to redirect students and the lesson towards a better result.

Deliberate mode of pedagogical reasoning. The deliberate mode of pedagogical reasoning described by the participants operated in the form of lesson planning and included decisions about materials to use, strategies to employ in lessons, the timing and sequence of activities. For all participants, deliberate pedagogical reasoning required the time to step back, reflect on previous instruction, and look forward to future instruction while considering specific student learning needs. This type of planning, which included reflection on previous lessons in relation to future lessons, resonates with the transformation stage of Shulman’s (1987) model of pedagogical reasoning and action where practitioners prepare and interpret text materials,
consider appropriate analogies and metaphors to represent lesson content, select instructional methods and adapt them for the characteristics of the students being taught, and tailoring to the individual needs of specific students.

For all participants, deliberate pedagogical reasoning required extended segments of space and time to reflect and create, often beyond the hours of the school day, as well as a level of energy to create new lessons. If phronesis is the ability to take right action based on moment-to-moment interaction within a living exchange, then, according to Coulter and Weins (2002), there must also be time to retreat from one’s role as an actor to reflect as a spectator. Based on Hannah Arendt’s notion of the necessity for one to be both an actor and a spectator in order to make good judgments, Coulter and Weins (2002) argue that in education, teachers are the actors, the ones doing the acting for a variety of others who are spectators, the ones theorizing based on reflection that is often disconnected from the realities of practice. They further argue that without time to retreat from action into the reflective world of spectators of their own practice, teachers are never able to think deeply about the consequences of their actions, and they are likewise limited in their ability to create and test their own theories of practice. This tension was evident in the experiences of the participants, who all discussed the necessity of extended time for deep reflection in order to design instruction that aligned with their purposes and goals.

Diane shared that this type of planning took considerable time away from her husband; however, she believed it was worth spending five hours on a Saturday afternoon engaged in this type of deliberate preparation because it would result in time saved through effective and efficient instruction in the classroom. Melissa shared that in the absence of extended time to reflect and plan, ideas would emerge for her while she completed household chores like folding laundry or washing dishes - necessary tasks in her day-to-day life that allowed her an occasion to
also reflect on her past lessons and create new ideas and strategies for future lessons. For Fran, the energy and time required to “reinvent the wheel” was a source of frustration given the limits of her time within the school day and year.

**Spontaneous mode of pedagogical reasoning.** Two participants, Melissa and Diane, also described their pedagogical reasoning as operating spontaneously during active instruction. In both examples given by Melissa and Diane, spontaneous pedagogical reasoning involved the necessity of considering multiple factors at once in order to make a seamless adjustment to instruction. Some examples of these factors included preserving student confidence, allowing students to self-direct and maintain ownership of the learning, and providing enough scaffolding and/or modeling to allow for student success. They both described a similar spontaneous reasoning process for their pedagogical reasoning in these spontaneous occasions.

The process begins with the awareness of a problem in the lesson, which reflects the problem-solving frame through which pedagogical reasoning develops over time. The fact that Melissa and Diane were attuned enough to recognize when the intended outcome of a lesson was not occurring according to plan reflects a phronetic recognition of the uncertainties of practice, as well as reflection-in-action (Schon, 1983/1987). Following Schon’s (1983/1987) model of reflection-in-action, the spontaneous mode of pedagogical reasoning described by the participants in the study involved reflecting in the action-present on their initial understanding of the lesson’s design, giving rise to an on-the-spot experiment during which one thinks up and tries out new actions. This was evident in Melissa’s adjustment to a reading lesson in which she intended for students to use a graphic organizer to record their thoughts as they read. When she realized that the students were not utilizing the graphic organizer as she intended, she considered why, refocused the students, and decided to have them work together in groups to provide the
class a model for what should occur in their reading activity. For Diane, a realization that students were not understanding how to work with tangrams to make other shapes caused her to model the process on the overhead, which scaffolded the students’ understanding of what she was asking them to do.

In both examples, both Diane and Melissa described the initial feeling that occurred when they realized that their lesson was not progressing as intended: a feeling of failure. While temporary, this feeling of failure reflects a personal desire to get it right the first time and not fail the students in some way. These teachers experienced a personal disappointment in their own failure; however, their ability to accept and overcome the feeling of failure was the result of a sense of confidence in their ability to make the necessary to make the adjustments that were required. This reflects Schon’s (1983/1987) notion that the adjustments within lessons are experiments that may fail to produce the results they sought to achieve. The ability of the participants to overcome the tinge of personal discomfort as a result of the failure of the lesson plan, a product of their deliberate pedagogical reasoning, reveals a sense of humility. As such, it may be that humility is a key disposition in one’s ability to make effective spontaneous adjustments to lessons. Both Diane and Melissa spoke to their desire to always be learners. Diane shared:

If you think of yourself as knowing everything then you miss the opportunity, and it happens all the time, when I have kids, and they’re explaining how they came up with their answer, and I’m like, “Okay, what’d you do?” And they’ll say, “I did this and this,” and I’m like, “Oh, my gosh, I never even thought about doing that way.” And then I’ve got another strategy for the next class.
Here Diane reveals her sense of humility by acknowledging that even a student might have a better means of communicating a concept than she might herself. A relationship between humility and confidence was evident in all of the participants’ discussion of their pedagogical reasoning – humility in accepting that they still had much to learn, and confidence in their ability to resolve problems in their lessons swiftly and effectively. This may point to humility and confidence as essential dispositions for the continued instructional experimentation and growth exemplified by Schon’s reflective practice model (1983/1987).

**Exploratory mode versus spontaneous mode.** While both Diane and Melissa described their pedagogical reasoning in terms of spontaneous responses to unexpected outcomes within active lessons, Fran did not describe her pedagogical reasoning this way. She did, however, describe going into that she called *exploratory mode*, which involved approaching new content or new strategies with an awareness that she would need the initial experience in order to learn from her errors. In exploratory mode Fran expected to make mistakes, and she approached these experiences already attuned to identifying those mistakes so that she could then learn from them to improve her instruction the next time she taught the material. As reflected in Schon’s (1983/1987) reflective practice model, as well as the Dreyfus and Dreyfus (1986) and Berliner (1994) models of skill acquisition, Fran’s level of skill after 22 years of teaching gifted middle school students is such that she has experienced so many similar situations over time that her practice has become overall less problematic, and she experiences few unexpected outcomes in her lessons. Schon (1983/1987) suggests that practitioners like Fran, who operate almost entirely intuitively, spontaneously, and automatically, risk “over learning,” in which they are selectively inattentive to problems within their practice. To the contrary, Fran’s awareness of problematic nature of practice is so great that she purposefully sets out to find problems in teaching new
materials as built-in means of improving her instruction of that material in the future. This points to Fran’s capacity for phronetic thinking in that her continued awareness of the complexities and problems inherent in teaching keep her from overlearning.

**Deliberate and spontaneous modes of pedagogical reasoning and phronesis.** Both the deliberate and spontaneous modes of pedagogical reasoning reflect the recognition by professional phronesis of the problematic nature of practice. Through a continuous recognition of the complexity of practice and the problematic nature of practice, practitioners are able to identify problems and seek solutions, thereby continuously developing their pedagogical reasoning. In this way, the connection between the development of pedagogical reasoning through problems of practice and the operation of pedagogical reasoning as both deliberate and spontaneous processes is clear. Additionally, both modes rely on the kind of reflection characteristic of professional phronesis in which practitioners consider the generalities and particulars in concrete situations to make interpretive judgments. Likewise, the judgments made by the participants in both modes clearly reflect the kind of action that is characteristic of professional phronesis which includes a willingness commitment to wise, prudent action out of a personal responsibility based on expertise and out of a moral commitment to do their best for students.

**Pedagogical reasoning is oriented towards achieving multiple goals at once**
*(Superordinate theme 3)*

In addition to its development over time, and the constancy of its operation in two distinct modes, the participants in the study also described their experience of pedagogical reasoning in terms of setting and achieving goals. All three participants pointed to disciplinary content as central to their goal setting; however, they also expressed their decision making in terms of
different types of goals: goals for students, goals for themselves as practitioners, goals related to their personal identity, and goals related to meeting the needs of individual students. Further, they described their experience with the phenomenon as oriented towards achieving multiple goals at once. Their description of their goals for students revealed a complex relationship among variables including the desire to extend student learning beyond the foundational goal of acquiring disciplinary knowledge. Goals for students beyond discipline-specific knowledge were influenced by each participant’s self-perception of her role in student learning, which was also tied to her individual personal and professional identity. Finally, all participants described the necessity of building relationships with students in order to achieve their various goals as a key aspect of their pedagogical reasoning.

While Shulman’s (1987) model of practitioner reasoning captures aspects of how pedagogical reasoning operates, it does not provide insight into the kinds of things that teachers actually consider as they select materials, determine appropriate metaphors and analogies, choose instructional strategies, and adapt them to the general and specific characteristics of their learners. Likewise, while Schon’s (1983/1987) model of reflective practice provides insight into how practitioners reflect in and on their actions to produce better outcomes over time, the nature of the purposes for which routines are established and subsequently disrupted remains unclear. The participants in this study provided insight into the substance of the knowledge that was generated as their pedagogical reasoning operated over time, which is lacking in both the Shulman (1987) and Schon (1983/1987) models. The substance of the participants pedagogical reasoning reveals the knowledge practitioners use in making decisions, which Flyvbjerg (2006) identified as the product of phronesis.
**Pedagogical reasoning as goal setting.** The relationship among the participants’ goals for students, goals for themselves, their personal/professional identities, and their relationships with students emerged as overlapping and interconnected. Each participant identified her overarching goal of her practice, which for each was broad in scope and reached beyond teaching discipline-specific content. For Melissa, her goal was to help students transcend basic knowledge acquisition to become genuine learners and better people; for Diane, her goal was to help students build confidence in their ability to perform math and to see the relevance of math in their lives; and for Fran, her goal was to prepare her students to face whatever challenges they might encounter throughout the rest of their school lives as well as prepare them to become citizens in a democratic society. Each of these goals goes beyond learning the content of the discipline, although all three participants acknowledged that discipline-specific content-related goals were of fundamental concern. Nonetheless, each participant used her discipline-specific content as both reason for and conduit of achieving her overarching goal beyond teaching content.

To illustrate the complex relationship among the goals towards which the pedagogical reasoning of the participants was oriented, consider the case of Melissa. In order for Melissa to achieve her overarching goal of helping students transcend learning, she determined that students must be more engaged in and accountable for their learning process. In order for students to become more actively engaged and accountable for their learning, she realized that they must be willing to take risks. In order for her students to be willing to take risks, she recognized that she must create a classroom environment in which students felt safe, which for Melissa also meant that she would need to engender their trust by participating as a member of the classroom group in the role of a guide or facilitator. Her role as a guide and her desire for students to be engaged
and accountable for their learning required that she design discipline-specific content lessons that would satisfy all of these goals, which support the achievement of her overarching goal.

**Personal and professional identity and goal setting in pedagogical reasoning.** Melissa’s personality and professional identity are reflected in her goals. By her own admission, she values the kind of learning which she endeavors to create for her students. Her perfectionism and fear of failing her students also relate to her desire to continually improve, which is reflected in her overarching goal for students that they become genuine learners. Her intrinsic motivation to be the best at what she does is met with the humility of knowing that she will never feel the best, which then provides her the push to become better. This personality trait fuels her desire to become better at her craft, thereby providing the impetus for her pedagogical reasoning to develop as well by seeking opportunities to learn through formal professional development and by solving problems of practice. The achievement of these various instructional goals depends on her ability to create relationships of trust with her students so that 1) she can learn about them, their personalities, their learning styles, and learning needs in order to design learning experiences that will meet those needs; and 2) students will be willing to take risks and be more actively engaged in their learning, even if that means risking the exposure of their weaknesses to their peers.

**Pedagogical reasoning as goal setting and phronesis.** In order for Melissa to achieve her overarching professional goal of helping students to transcend knowledge, she described a variety of other prerequisite conditions that she must establish. Establishing these conditions become goals that she must achieve in pursuit of the kind of learning experience she desired for her students. These goals represent decision junctures that require her to engage her knowledge through phronesis. First, she must establish a classroom environment conducive to relationships
among all of the members of the class, including herself. Only after these relationships are established does she then begin to design instruction that will satisfy her instructional goals. In this way, Melissa reveals her ownership of the instruction of her students. While her lessons are guided by her commitment to the content standards, how she designs instruction to teach those standards depends on who her students are as well as who she is. The orientation of her pedagogical reasoning to these goals and the means of achieving them, which depend on the individuals who make up her classes of students, reflect professional phronesis in that her goals: 1) are informed by her personal history, experience, and disposition; 2) reveal her reflection on the particulars of her contexts regarding individual students; 3) include actions that reflect a personal responsibility for her students’ learning based on her expertise and a moral obligation; 4) indicate the uncertainty of practice by allowing space for and anticipating differences among students; 5) are relational in nature; and 6) require professional autonomy to act.

Goal setting in pedagogical reasoning as professional autonomy. It is important to note the connection between the way pedagogical reasoning develops over time through experiences and its constant operation as both deliberate and spontaneous. The participants of this study attributed the development of their pedagogical reasoning over time to the kind of formal professional development that allowed them to reflect on teaching within the context of their individual practice, which enabled them to make changes relevant to their situations. Even more than formal professional development opportunities, they pointed to the development of their pedagogical reasoning as a result of solving self-identified problems of practice. That their pedagogical reasoning was described as constant and operating both deliberately in preparation to teach, and spontaneously to adapt lessons in response to students during active teaching, reveals the manner in which these teachers were able to call upon their previously acquired
pedagogical knowledge to inform their deliberate and spontaneous instructional decision.

Furthermore, this reveals how these teachers’ pedagogical reasoning operated as function of continuous experiential learning. Specifically with regard to autonomy to act, Sellman (2012) notes that professional phronesis may be circumscribed by mechanisms of professionalism. The necessity of professional autonomy is evident in the degree to which Melissa’s goals for student learning, which are imbued with her personal and professional identity, require the freedom to make choices that she believes best suit her goals for student learning.

The school district in which all three participants were employed does not utilize a scripted curriculum package; however, several neighboring districts do. If Melissa had been required to teach from a scripted curricula package like her colleagues in neighboring districts, she would have been unable to set her own goals for student learning, which in her case, go beyond the content standards for her course, since those goals would be set out by the curriculum. She would be unable to select materials or design instruction that met the needs of her students or reflected their interests; rather, she would be left to make what adaptations she could to the lessons outlined by the curriculum. The curriculum itself, having been designed by someone else for a general population, might not reflect the needs of her specific students. Without the ability to create learning experiences based on her goals and the specific needs of her students, relationships with her students for the purpose of understand their individual learning needs would not be necessary. Furthermore, her personal and professional identity would not necessarily be reflected in the lessons.

Without the ability to set her own goals and design instruction that is responsive to the unique needs of her students, not only is Melissa’s phronesis circumscribed, but the circumstances necessary for her pedagogical reasoning to grow are circumscribed as well, thus
preventing her from utilizing her professional wisdom and developing both technical and acquired adaptive expertise necessary to exercise discretion and judgment in the classroom (Zeichner, 2012). Without the kind of pedagogical relationships with students that inform the way she designs lessons, and by teaching scripted lessons and materials chosen for her and her students, the deep and emotional connection Melissa has to her profession might also be circumscribed. This became clear in her description of her relationship to the co-teacher with whom she was required to share her classroom. When she was forced to watch someone else teach the lessons she had prepared based her knowledge of the students and the layered purposes with which she had designed them, it was clear to her that the students were missing out on important pieces of the lesson. She used the phrase lost in translation to describe the inability of the co-teacher to communicate the message of the lesson in its fullness, since it was written in the language of Melissa’s pedagogical reasoning and founded upon Melissa’s phronesis.

**Goal-setting in pedagogical reasoning and phronesis.** While I used Melissa’s case here, each of the participants’ experiences exemplified the complex relationship among the kinds goals toward which pedagogical reasoning is oriented. The nature of the goals described by the participants of this study was product of their experiential learning over time, which is characteristic of professional phronesis. Likewise, the constancy of its operation, regardless of mode, reflects the kind of ongoing reflection necessary to navigate the problematic and complex nature of practice. However, the goals that these teachers set with regard to students and themselves reflect the deep sense of personal responsibility based on their sense of expertise, as well as a moral obligation to take wise and prudent action with regard to their goals for students learning and accepting the consequences of those actions. For each teacher, her overarching goal pointed to the need to teach towards building qualities of moral character. In Melissa’s case, this
meant teaching kindness, honesty, and tolerance of others. In Diane’s case, this meant teaching in ways that were sensitive to students’ self-concepts in order to build their confidence. In Fran’s case, this meant teaching work habits so that her students could develop independence and autonomy, as well as skills like perseverance through tough tasks, humility, and self-advocacy.

The standards that guide instruction for these teachers do not require these qualities of character to be taught explicitly in any way. Nonetheless, these teachers recognized the importance to their overall pedagogical goals of teaching in ways that allowed students the opportunity to acquire such qualities. None of them considered it a part of their job to teach moral qualities to their students, nor did they endeavor to promote a moral agenda in their work with students. The orientation of their goals towards these qualities of moral character was ultimately pedagogical. In other words, these teachers found that in order to achieve their instructional goals, they must incorporate some education on the kinds of qualities that make positive and productive human engagements possible.

**Summary of discussion for research question #1.** The analysis of data on the experience of pedagogical reasoning described by the participants of the study revealed multiple aspects of the phenomenon: 1) how it develops; 2) how it operates in practice; and 3) the content on which such thinking is oriented. Like Shulman’s (1987) model of pedagogical reasoning in action, the pedagogical reasoning of the participants in the study reflected their effort to transform their personal knowledge into knowledge to be obtained by students. Like Schon’s (1983/1987) model of reflective practice, the pedagogical reasoning of the participants in this study reflected the kind of ongoing reflection in and on action that results in growth in expertise. Given the connections among the pedagogical reasoning of the participants in this study, the instructional knowledge transformation process described by Shulman (1987), and the problem-
solving frame of the reflective practice described by Schon (1983/1987), this study reveals pedagogical reasoning as more complex than either model adequately captures. This supports Orton’s (1997) balanced Aristotelian model of teacher reasoning in which phronesis is a complement and requirement for the full operation of episteme and techne.

The nature of the phenomenon of pedagogical reasoning revealed in the participants’ experiences was influenced by contextual factors such as student achievement level, as well as characteristics of individual practitioner’s personal and professional identities. This suggests that the experience of pedagogical reasoning is likely to vary from individual to individual and from one context to another. Given that this study focused on the experiences of three participants, the relationship among contextual factors, individual characteristics, and pedagogical reasoning could be further developed by examining greater numbers of participants. Likewise, aspects of pedagogical reasoning such as its development over time through formal and informal learning experiences could be developed further through explorations into the specific types of professional development and their influence on pedagogical reasoning. Deepening our understanding of pedagogical reasoning as it is experienced by teachers in a variety of contexts adds value to our understanding of teacher knowledge by virtue of the fact that teacher perspectives are rarely considered as valuable research data. However, for this study, the most notable result of research question #1 is that the analysis of data revealed that for the participants of this study, the experience of pedagogical reasoning reflected professional phronesis. As a result, I was able to answer research question #2 in a way that provided the evidence of and illustrations for phronesis as a viable construct and significant way of knowing in teaching, which Orton (1997) suggests describes the dimension of practitioner knowledge and reasoning.
beyond propositional and technical knowledge that is rarely acknowledged in the current paradigm of teacher accountability and evaluation.

Research Question #2: In What Ways Can the Knowledge That Highly Competent Teachers Employ in Pedagogical Reasoning Be Described in Terms of Phronesis?

The analysis of data for research question #1 resulted in three superordinate themes that describe the participants’ experiences of pedagogical reasoning. These three superordinate themes and the respective subthemes of each were then analyzed for comparison with six features of professional phronesis outlined by Kinsella and Pitman (2012b). A clear relationship between the pedagogical reasoning of highly competent practitioners and professional phronesis emerged. While a clear relationship among the constructs emerged, it was also evident that the pedagogical reasoning of highly competent practitioners cannot be fully described by professional phronesis; however, all aspects of pedagogical reasoning were found to reflect some aspect of professional phronesis, and all aspects of professional phronesis were found to reflect some aspect of pedagogical reasoning. This suggests that the pedagogical reasoning of highly competent teachers may be characterized by phronesis to a great extent.

Pedagogical reasoning as professional phronesis. Kinsella and Pitman (2012b) detail six main features of professional phronesis. First, professional phronesis depends on aspects of the individual practitioner and is informed by her history and experience as well as her disposition. Second, professional phronesis requires discernment and implies reflection in order to make interpretive judgments by weighing generalities and particulars in concrete situations. Third, professional phronesis requires action based on such judgments, and this action is linked to a moral committed responsibility to act rightly. Fourth, professional phronesis is relational and dialogic; and fifth, professional phronesis recognizes the problematic nature of practice. In
addition to these five features of professional phronesis is a sixth feature, which Pitman (2012) calls the paradox reflected in current practice. I found evidence of the all six features professional phronesis outlined by Kinsella and Pitman (2012b) in the participants’ experiences of pedagogical reasoning. This supports Orton’s (1997) contention that teacher professional knowledge consists of propositional knowledge, craft knowledge, as well as practical knowledge in the form of phronesis.

The relationship between the reflection and judgment required by professional phronesis and all features of pedagogical reasoning, and the relationship between the paradox of practice regarding professional phronesis and across all features of pedagogical reasoning are particularly noteworthy. These relationships suggest that in addition to professional phronesis, both the reflection implicit in decision making and as a result, pedagogical reasoning itself, may be circumscribed when practitioners’ actions are prescribed. Additionally, the relationship between the morally committed action of professional phronesis and the nature of the goals on which the pedagogical reasoning of the practitioners in this study were oriented clearly points to the moral and ethical dimension of pedagogical reasoning. Finally, direct associations between professional phronesis and pedagogical reasoning were identified in regard to the dependence on individual practitioner’s experiences and disposition, the recognition of the problematic nature of practice, and the dialogic and relational nature of both.

**Phronesis in the development of pedagogical reasoning as explained by the Race (2006) model of competency.** Race’s (2006) model of competency provided a framework for understanding the relationship between the development of pedagogical reasoning and the development of phronesis. The continuous development of pedagogical reasoning is grounded in knowledge generated through a corpus of experiences that the participants in the study framed as
1) problem solving through reflection in and on action, as well as 2) professional learning experiences such as university course work and National Board certification. As they solved problems, those solutions became tested theories (Coulter & Weins, 2002) that then informed future decisions. The Race (2006) model of competency is helpful in understanding 1) the continuous development of knowledge through pedagogical reasoning over various stages of competence, and 2) the relationship of the continuous development by the participants of this study to professional phronesis.

**The Race (2006) model of competency.** Sellman (2012) notes that when Schon asserts that competent practitioners usually know more than they can say, “he was surely thinking of an expert rather than a novice and someone who acts as a thoughtful and well-informed professional rather than someone taught to perform a set of restricted and prescribed skills,” (p.120). He points to the confounding nature of the term *competence* since in technical rational terms, competence may mean nothing more than simple or stepwise tasks performed under limited conditions such as those that occur when curricula are scripted. Race’s (2006) model represents individual competence as divided among four quadrants that result from the cross-section of two continua: the continuum of competence and what he calls uncompetence; and the continuum of consciousness and unconsciousness. The first two quadrants represent our conscious knowing of our competencies and uncompetencies. Quadrant 1 represents knowing our competencies and, therefore, our conscious knowledge of what know and can do. Quadrant 2, knowing our uncompetencies, represents an understanding of what we do not know or what we cannot do. The third and fourth quadrants represent the unconscious domain. In Quadrant 3, not knowing our competencies, we do not know what we know or what we do. In Quadrant 4, not knowing our uncompetencies, we do not know what we do not know and what we cannot do. Sellman (2012)
suggests that Quadrants 1 & 2 are straightforward in that they rely on our conscious awareness of what is it we can or cannot do and what it is we do or do not know. Race (2006) contends that these conscious aspects of competence and uncompetence allow practitioners to assess their existing competence and knowledge, set their own goals, and develop effective strategies to enhance their personal and professional learning. Quadrants 3 & 4 are complicated by their relationship to the unconscious aspects of what it is we can or cannot do or know. It is this lack of self-awareness that relates Race’s model to phronesis.

![Figure 5. Race’s (2006) Model of Competence.]

Because each of these teachers had an awareness to perceive problems in their practice by means of their problem-solving frame (Schon, 1983/1987), they were constantly moving from knowing their uncompetencies by identifying problems to knowing their competencies as a result of finding solutions to the problems of practice they identified. The knowledge contained within
the domain of “knowing one’s competencies” continued to grow over time, and as such, the foundation upon which problems of practice are identified and solved grew as well. This is akin to Schon’s reflective practitioner whose practice over time becomes more and more intuitive as the practitioners practice knowledge grows, eventually reaching a point where they may no longer perceive problems. Each one of the participants in this study identified an awareness of problems within her practice as well as deliberate attempts to resolve those problems. Sellman (2012) notes of Race’s (2006) model that once one has identified something in the “not knowing” quadrants, that item is immediately transferred to a “knowing quadrant.” It may be that the problematic nature of teaching facilitates the development of individuals who are 1) capable of identifying the problems, 2) take responsibility for solving them, and 3) make actions based on the solutions they identify. This is where the personal characteristics and dispositions of practitioners may make the most difference. In each of the participants, I noted somewhat of a paradox in how each described her personality. First, all three participants described a willingness to do whatever was necessary to reach their goals for their students and themselves, which denoted a willingness to accept failure as a consequence of their instructional decisions, as well as a confidence that they could “do better.” Second, each participant described herself in terms of “not knowing it all.” Each acknowledged her perceived limitations, which pointed to a sense of humility. Within the tension between a desire to become better practitioners by overcoming and learning from failures and a humble recognition of their own limitations are two dispositional attributes that fuel the effort of a practitioner to transition from unknowing uncompetence to knowing competence over time.

Race’s (2006) model helps to frame professional phronesis as both a process and an outcome. The model also helps to frame the differences between novices and experts in that the
conscious knowledge of competence and uncompetence is limited by experience. Sellman suggests that a novice might begin to demonstrate professional phronesis by first acknowledging what it is she do not know and cannot do. With such insight, one can then set out to discover and uncover the professionally relevant contents of their own knowing in general and of their unconscious unknowing in particular. To do so requires an active desire to engage in activities, such as reflective practice and seeking critical feedback from colleagues, which reveal things previously unknown, and the willingness to act on those new understandings, both of which are characteristic of professional phronesis. Like Sellman asserts of individuals who strive to be competent practitioners according to Race’s (2006) definition, the participants in this study clearly took their work for human betterment seriously and recognized the danger of ignoring the fact that there are indeed things that they do not know and cannot do. Nonetheless, they each revealed a long-term commitment to identifying and addressing the contents of their unknowing that emerged as problems in their practice.

**Significance of the Study**

Jackson (1986) points to the technical-judgment based practice conflict when he asks, “Is there more to teaching than the skilled application of know-how? If so, what is it?” (p.1). Zeichner (2012) describes two current views of teaching: the view of teachers as professionals, and the view of teachers as technicians. He points to new teacher preparation programs focused on developing teachers to serve as “educational clerks” (p.u) who simply deliver scripted curriculum and strategies, rather than educated professionals with both technical and acquired adaptive expertise necessary to exercise discretion and judgment in the classroom to meet the needs of their diverse students. Kinsella and Pitman (2012a) describe their sense that something of fundamental importance and moral significance is missing from the vision of what it means to
be a professional, particularly in the field of education. They and others suggest that what is missing from the instrumentalist perspective might be recovered through Aristotle’s intellectual virtue, phronesis, or practical wisdom (p.1). This study of teacher pedagogical reasoning and professional phronesis addresses all three of these concerns.

First, this study provides rich descriptions of how three highly competent teachers experience pedagogical reasoning, and those experiences revealed that the pedagogical reasoning of these highly competent teachers included more than propositional content knowledge and knowledge of technique. In addition to a commitment to content knowledge and knowledge of techniques and strategies, the pedagogical reasoning of the teachers in this study included relational knowledge of individual students, active knowledge employed in planning for instruction and during instruction, ongoing reflection on problems of practice, and goals for themselves and students that went beyond the acquisition of content knowledge to include such things as acquiring virtues, life skills, independence, and confidence.

Second, this study provides exemplars of the kind of practice Zeichner (2012) describes as educated professionals with both the technical skills and adaptive expertise necessary to exercise discernment and judgment to meet the needs of their diverse students. Each case showcases the ways in which adaptive expertise operates in instructional decision making, both in planning for instruction and during active instruction, to make necessary and immediate adjustments to lessons in response to students’ needs. Such adaptive expertise, the ability to improvise effectively, is a product of the ongoing development of pedagogical reasoning though problem solving, constant reflection in and on action, and a sense of responsibility to do whatever is necessary to make learning possible for students. All of these aspects of pedagogical reasoning are characteristics of phronesis, which suggests that the adaptive expertise of highly competent
teachers is a product of their phronetic way of knowing, and that phronesis, like Flyvbjerg (2006) suggests, is the way of knowing that is prerequisite for propositional knowledge and technical knowledge to be utilized most effectively. Phronesis captures the ways in which these practitioners engage propositional knowledge of their content, pedagogical knowledge of technique, as well as a wealth of intuitive, experiential knowledge as they make professional decisions.

Third, this study provides insight into the substance of the pedagogical reasoning of highly competent teachers. While each participant acknowledged their commitment to teaching the content of their discipline, their primary goals for students and for themselves as teachers were oriented towards improving the lives of students. The acquisition of content knowledge was viewed as a reason for and consequence of teaching students how to behave in a virtuous manner; engaging students in trusting relationships based on those virtues; and teaching life skills such as self-advocacy. Such goals for student learning point to the desire of these highly competent teachers to equip students for success in the future far beyond the scope of the course, not simply to pass an end of course exam or standardized test. This focus on the moral-ethical dimensions of human interaction points to phronesis given that phronesis is concerned with discernment for what is the greatest good possible in a given situation. The pedagogical reasoning of these teachers exhibited their desire to achieve the greatest and highest good possible within the lives of their students beyond the scope of their disciplinary content. Given this evidence for phronesis as viable means of describing the way of knowing in teaching not captured by propositional and technical knowledge, this study provides a starting point for further examination of phronesis in teaching.
**Recommendations for Future Research**

**Research to develop the construct of phronesis in highly competent teachers.** This study provided illustrations of phronesis in three highly competent teachers as it functioned within their pedagogical reasoning. These illustrations begin to bridge the space between phronesis as a philosophical construct and phronesis as a construct with meaning in the practical realm of teaching. While these illustrations of phronesis in practice contribute to a balanced view of teacher knowledge as propositional, technical, and practical/moral, more research on professional phronesis in teacher practice is needed. The small number of participants limits the findings of this study; however, this study could be replicated with greater numbers of highly competent teachers to yield more examples of phronesis in practice. Additionally, since evidence of phronesis in practice is tied to practitioners’ own experiences, storied cases might be collected and examined through narrative inquiry. Given the problem-solving orientation and reflective nature of phronesis, participatory action research studies of teachers as they engage in solving problems of practice could yield valuable insight into both individual and collective experiences of professional phronesis.

**Research of phronesis in various contexts and levels of teacher competence.** Considering the situation and context dependent nature of phronesis, research focused on storied cases from within different contexts would enrich the understanding of how phronesis develops and operates as a way of knowing in relationship to those variables. For example, examination of teacher experiences at the elementary or high school level might yield a better understanding of the how of pedagogical reasoning as phronesis operates at different levels of schooling. Longitudinal studies of teachers’ experience of pedagogical reasoning over time would contribute a deeper understanding of the relationship between the development of pedagogical
reasoning and the development of professional phronesis as a way of knowing. Finally, comparative case studies examining pedagogical reasoning at different levels of teacher experience, particularly considering the Race (2006) model of competence, might provide clearer insight into the ways in which the pedagogical reasoning of novices operates towards professional phronesis.

**Research on the relationship between phronesis and mechanisms of accountability.**

Given that mechanisms of accountability such as teacher evaluations and mandates such as co-teaching and transitions to new standards revealed the ways in which pedagogical reasoning, and thus phronesis, are circumscribed, future research could examine phronesis in teachers whose instruction is tied to scripted curricula. In this study, the participants were not required to teach from a scripted curriculum package, which indicates that they retained a level of professional autonomy by which to engage in phronetic pedagogical reasoning. A deeper understanding of the experiences of highly competent teachers who are limited in their instruction decision making process by the constraints of a script would contribute to an understanding of how pedagogical reasoning as phronesis operates in such a circumstance. Furthermore, studies of how phronesis develops and operates in teachers of various levels of experience, from novice to highly competent, who are subject to scripted curricula, would provide understanding of how mechanisms of accountability influence phronesis at different levels of competence.

**Recommendations for Practice**

This study affirmed the notion that phronesis is a significant form of professional knowledge in teaching. As such, it has the potential to promote the kind of reflective practice that is based on a desire to do what is best by utilizing adaptive expertise to accomplish professional goals. However, the acknowledgement of phronesis as a significant form of professional
knowledge has implications for teacher education, teacher practice, and teacher evaluation. Studies of these recommendations for practice would also be prudent directions for future research in order to document outcomes of various changes to teacher education, teacher practice, and teacher evaluation.

**Recommendations for teacher education.** With regard to teacher education, the question of whether phronesis can be taught becomes relevant. Even if phronesis cannot be taught directly, the present study suggests that it can be cultivated. An initial step in the cultivation of phronesis in teacher education is the cultivation of professional judgment for how to act for the good of the student. The cultivation of professional judgment might be accomplished by helping teacher education students begin to develop the habits of mind associated with phronesis such as reflection and problem-solving. This is best achieved when students are given the opportunity to gain the professional experiences necessary to ignite the process of developing pedagogical reasoning and phronesis. Without experience, conversations about phronesis and phronetic action remain disconnected from a student’s professional experience. Consequently, knowledge of phronesis does not become a part of a student’s fund of foundational knowledge upon which professional decisions are made, which results in the possibility of that knowledge being disregarded in practice. This has been seen in early service teachers whose lack of experiences prior to the occasion of their first teaching endeavor causes them to revert to teaching the way they were taught rather than rely on their teacher preparation. Early fieldwork can begin to expose teacher education students to enough of the complexities of the teaching enterprise for them to begin recognize uncertainties and problems of practice. Over the course of a program, continuous engagement in the field at increasing levels of exposure to students encourages the gradual development awareness of uncertainties and complexities of practice.
In addition to providing students with classroom experiences, teacher education should focus on acknowledging rather than ignoring complexities and problems of practice within the discourses of coursework. Students should be encouraged to embrace the uncertainty of teacher practice, then document, share, and discuss these uncertainties and problems in professional dialogue. Such conversations help to develop the kind of reflective practice that promotes the development of phronesis. By identifying problems of practice within early field experiences, students are able to first, acknowledge failure as normal and anticipated aspect of teaching practice, and second, recognize failures as identified problems of practice to be solved. This type of learning builds the confidence necessary to become aware of problems in practice, accept failure as a consequence of learning to teach, and move towards new understanding of practice through finding solutions to problems. Teacher education programs should be careful to provide students with opportunities to engage in reflection that is tied to experiences, even if those are student experiences considered from the perspective of a teacher. Without a connection to experience, reflections provide little in the way of developing knowledge of and for practice.

**Recommendations for teacher practice.** With regard to relationship between the development of pedagogical reasoning over time and the development of professional phronesis, opportunities for teachers of all levels of experience to engage in the kinds of professional development opportunities that reflect a focus on developing knowledge-of-practice (Cochran-Smith & Lytle, 1999) provide the kind of reflective opportunities that move individuals towards phronesis. Such formal professional development might include opportunities for practitioners to challenge their own assumptions; identify salient issues of practice; pose problems; study their own students, classrooms, and schools; and construct and reconstruct the curriculum in ways that make their unknowings conscious (Race, 2006) so that right action might result.
Additionally, the findings of this study point to the need for practitioners to have adequate time to engage in such reflective activities. Without the time to retreat from routine action (Coulter & Weins, 2002) in order to reflectively consider their practice, make deliberated judgments, and create new solutions, such reflective practice and professional growth is made difficult. Giving teachers more time during the school day to engage in this kind of reflection, rather than attend meetings and prepare materials, might enable teachers of all levels of experience the opportunity to develop their pedagogical reasoning even further towards professional phronesis.

The freedom of teachers to enact professional autonomy also emerged in this study as important to the development and utilization of pedagogical reasoning and professional phronesis. While the notion of giving teachers professional autonomy is contested by the proliferation of scripted curricula and other mechanisms of accountability, the kind of practice that unites a teacher to the kind of instruction that responds to the needs of learners requires a level of professional autonomy to set goals and act on new understanding of practice. Melissa provided an example of how much of her purpose and intention for her lessons was lost in translation when her co-teacher tried to teach from her plans. How much more might the purposes and intentions of scripted curricula become lost in translation given that they are disconnected from the professional identity of the teacher, and as such, the perspective of one who has relational knowledge of students’ needs and can create the learning activities, environment, and outcomes that respond to those needs if given the freedom to do so.

Every student deserves teachers who demonstrate phronetic practice – the kind of practice that reflects the adaptive expertise necessary to exercise discernment and judgment in making instructional decisions that respond students’ various needs. Such a practice requires professional
autonomy. Students with the greatest academic learning challenges and needs, such as those in the lowest quartile for achievement, may benefit the most from teachers with refined pedagogical judgment and developed phronesis. Two participants in this study who taught intensive students attributed their ability to help their students achieve the highest gains possible to the aspects of their practice that were guided by their phronesis. In addition to building the confidence and character of these students, the ability to utilize their professional wisdom to create the kind of learning environments, instructional activities, and means of assessment that best met the specific needs of the learners in their charge resulted in substantial gains on their students’ standardized test scores. As such, teachers with highly developed phronesis and adaptive expertise need the professional autonomy to make instructional decisions.

**Recommendations for teacher evaluation.** In addition to mechanisms of accountability such as scripted curricula, teacher evaluations systems that focus on student test scores and observable criteria disregard phronesis as a significant way of knowing in teaching. The language of accountability must be changed to acknowledge phronesis and phronetic action. Diane’s story highlighted this need when she was marked down by her administrator on her evaluation for omitting a specific target score in her instructions to her struggling students before they took a quiz. Knowing that the pressure to achieve a particular score would undermine their confidence in performing the task, she altered the instructions by telling her students that she simply wanted them to improve on their pre-test score. While this adjustment was based on her phronetic judgment, and reflected her adaptive expertise, the language of the evaluation instrument indicated that effective teaching required her to make a specific statement; therefore, she was given the score of “developing,” in spite of the fact that her decision indicates phronetic judgment and adaptive expertise. Teachers should be evaluated on their ability to recognize and
respond to problems of practice as they relate to the specific students in their charge, not punished for phronetic action on their behalf. The inclusion of alternative methods of evaluation such as teacher action research or collaborative group inquiry into problems of practice in addition to student learning gains would encourage and reward the development of phronesis at the same time as promoting the development of pedagogical reasoning and adaptive expertise.

**Limitations**

Several limitations of the study have been previously discussed, and I will review them here. First, the sample size prevents the findings of this study to be generalized to larger populations; however, the IPA method did allow for the elucidation of commonalities across cases. Another limitation may be the reliance on the participants’ self-reported reflections of their experiences, as opposed to data collected through simulated-recall or otherwise observed by the researcher. The IPA method was also helpful in this regard in that it was the intent of the study to explore the experiences of teachers as lived, and the communication of such experiences involves meaning-making on the part of the participant. This interpretive act on the part of the participant, as well as my participation as a co-interpreter of their experience evokes the double hermeneutic characteristic of hermeneutic and interpretive phenomenology. Finally, my previous relationships with the participants as a representative of the university with which their school has been long time partners may be construed a hierarchical relationship in which participants might feel obligated to provide answers to my questions they felt I was seeking. While this is possible, the nature of my relationships as a collaborator within the activities of the school partnership allow for my relationships with these women to be collegial rather than hierarchical. My knowledge of them and their histories also served to enhance my interpretation of the
experiences they shared and enabled me to engage in the double hermeneutic of interpretation with confidence that I was not misrepresenting their meaning.

**Reflections on the Research Process**

A challenge for me as a researcher interested in exploring phronesis as professional knowledge was the issue of how to go about identifying phronesis in teacher practice. Since phronesis is active knowledge, and like all knowledge, resides within the heads of those who engage in it, phronesis is not observable as discreet behaviors. Through my review of the literature on phronesis as teacher knowledge, I was also aware that a teacher’s phronesis might be hidden even from herself within intuitive practice. This posed another challenge to the design of the study. If I couldn’t observe phronesis, and teachers themselves may not be able to articulate it because of its tacit nature, a research design that would allow me the greatest chance of uncovering some of a teacher’s tacit knowledge was important. Gaining access to practitioners’ tacit, intuitive knowledge would be necessary before I could hope to identify characteristic of phronesis within their thinking.

As I contemplated a means of gaining access to the knowledge teachers use to make the multitude of decisions they make in the course of their professional work, I was reminded of Larry Cuban’s (2011) comparison among the work of jazz musicians, professional basketball players, and school teachers. He notes:

Non-teachers would be amazed at the total number of decisions teachers make during a 45-minute lesson, the frequency of on-the-fly, unplanned decisions, and the seemingly effortless segues teachers make from one task to another. Decisions tumble out one after another in questioning students, starting and stopping activities, and minding the behavior of the class as if teachers had eyes in the back of their heads.
He goes on to mention MRI studies done on jazz musicians that studied the brain activity during improvisation, and the finding that much of the brain activity recorded during improvisation was in same part of the brain where sentences are invented. The scientist suggested that musical notes are like words, and while at first, musicians must memorize numerous nouns, adjectives, and verbs, over time the process of articulation becomes automatic. After immersing themselves in the art, jazz musicians begin to internalize its intricacies, and they can play without considering the individual notes or thinking about their fingers. Cuban relates the ability improvise to expertise, and then connects the ability of jazz musicians to engage in improvisation to the ability of teachers to deal with the spontaneity and immediacy that teaching requires within both routine and unexpected situations. Cuban’s use of improvisation to describe effective teachers resonated with the active discernment involved in decision-making defined by phronesis. His connection between improvisation and expertise resonated with Schon’s (1983, 1987) model of reflective practice, which describes how practitioners’ reasoning becomes more and more intuitive over time. If teacher expert practice is related to one’s ability to improvise, and if improvisation is intuitive and automatic, and if phronesis accounts for this improvisational way of knowing, then phronesis might account for the improvisational aspect of teacher knowledge.

While these ideas shed light on the possible connection between teacher expert practice and phronesis, they also shed light on the challenge of studying such a connection. I could appreciate the comparison between jazz musicians and teachers, yet while the literature on professional phronesis supported a connection among improvisation, expertise, intuition, and teacher thinking, there was still the question of how to understand how this way of knowing operates in practice. Much has been written on the role content knowledge and pedagogical technique in teacher practice. Much has also been written on phronesis and its importance to human sciences...
in addition to content knowledge and technical knowledge. Nonetheless, phronesis has remained a philosophical and theoretical construct without practical illustrations of how it operates in the practice contexts of teachers. While I could see the potential of phronesis as a concept that could revolutionize teaching, teacher education, and even teacher certification and policy, I understood that phronesis must be plucked from obscurity as a philosophical concept and given meaning within a the practical realm. In order to do so, I realized that I must start with the practical realm first, through an examination of teacher pedagogical reasoning as a whole; only then could I determine if phronesis was a viable construct to describe certain aspects of teacher reasoning as the literature suggests. If so, then I could provide needed illustrations, explanations, and examples of phronesis in practice. If not, then my inability to identify phronesis within the pedagogical reasoning of teachers would preclude by ability to document phronesis in practice.

In addition to the issue of how to examine phronesis as a construct, Cuban’s comment that no MRI studies of teacher decision-making in action have been conducted helped me to realize the difficulty inherent in accessing the knowledge of teachers in the moment through observation and even MRI brain scans since those methods can only suggest what kinds of thoughts might be occurring in teachers’ minds. Scientists must still rely on the self-report of an MRI participant if they are interested in the content and process of that individual’s thinking. With this understanding, I decided to adopt a phenomenological approach to this study that would focus on the lived experience of the individual teacher as the source of data and the basis for generating a deeper understanding of teacher thinking. I embraced the notion that an objective understanding of teacher thinking would be impossible; rather, I believe that an objective understanding of teacher thinking is counterintuitive to the role of contextual factors in decision making. A phenomenological approach would allow me to seek the perspective of teachers themselves,
which would allow me to get as close as possible to their thinking. Even so, I was concerned that
a traditional phenomenological approach would require that I distill the experiences of
pedagogical reasoning of individual participants into a single essential experience that would
represent the experience itself, rather than the participants. My choice of IPA as the method of
data collection and analysis provided the solution to this concern.

Throughout the process of conducting this IPA study, my choice of IPA was affirmed in
several ways. First, I hoped to answer two questions that suggested two separate lines of inquiry;
furthermore, the second line of inquiry represented by research question #2 was dependent on the
outcome of the first line of inquiry. Given that IPA supports research geared at both a primary
research question which requires the collection of data, as well as a secondary research question
which examines the theoretical relationship between the phenomenon and another construct, I
was able to use the data I collected on pedagogical reasoning to then examine it through the lens
of professional phronesis. This eliminated the problematic research stance that collecting data on
phronesис posed. I was able to collect data on the pedagogical reasoning of highly competent
teachers, interpret it, then consider it in light of the construct of professional phronesis in order to
provide examples and illustrations of phronesis.

In addition to the ability to answer two lines of inquiry through the study, the IPA method
also allowed me to represent the data in ways that retain the richness of the individual
experiences of the participants through the use of themes across cases, as well as themes within
cases. The idiographic aspect of IPA considers the variability among cases, even while
considering similarities across cases. Presenting each theme by using excerpts from each
participant allowed me to create a rich description of each theme that also revealed the variability
and uniqueness of the participants’ individual experiences. By presenting their pedagogical
reasoning as illustrations of phronesis case-by-case, I was able to present a deeply contextualized account of each of the participant’s experiences of pedagogical reasoning while highlighting the features of professional phronesis evident in the account. These aspects of IPA allowed me to co-interpret the experiences of the participants and honor their voices to the greatest degree possible. Additionally, I was affirmed in my choice of data collection strategies to include both multiple participant interviews as well as participant written protocols. Asking the participants to create a written protocol to capture their reflection on their experience of pedagogical reasoning imposed a burden of time and relied on their cooperation; however, all three participants contributed rich descriptions of examples of their pedagogical reasoning that on one hand served to clarify our first conversation and guide our second conversation, and on the other, allowed the participants the opportunity to portray their experiences in their own words through thoughtful writing.

While I was affirmed in my choice of IPA, my inexperience with the method caused me to underestimate the time and careful analysis the method would require. While I had considered having the audio recordings of the interviews transcribed professionally, I opted instead to transcribe them on my own. Instead of the week I expected to spend transcribing, I ended up spending nearly a month transcribing the interviews Smith & Eatough (2012) note the tediousness of transcription for IPA given that transcription itself is a form of interpretation. I found myself listening and re-listening to the recordings in my attempt to both accurately transcribe my conversations with the participants and to make sense of what we were revealing about the phenomenon through our collaborative interpretation. Because the interviews represented what Brinkmann (2007) describes as epistemic interviewing by challenging the participants to give reasons for what they did as a means of structuring the conversations by our
interpreting together, there was meaningful interpretation of the phenomenon contained within the transcripts, and I became aware of these as I transcribed. This slowed down the transcription process because I found myself engaging in interpretation as I went. I began to enact the double hermeneutic of interpretive phenomenology as I made sense of our collaborative meaning-making, which required that I stop to make notes of what I was seeing in the data before those thoughts were lost.

Not only was the transcription process a time-consuming interpretive act, the analysis process was even more daunting as I immersed myself in the transcripts and writing protocols of each participant. At times the speed of my thoughts was overwhelming, and in these moments, my reflective journal became an essential tool for me to document my thinking as I continued to analyze data. The journal served as a place for me to engage in reflexive examination of the data, my role as both a co-creator and an individual interpreter of the data, as well as the steps in my analytical process. As such, I believe that a particular strength of this study is the transparency with which I engaged with the data through my daily reflections on my researcher thinking in addition to the memoing and coding.

Reflecting on my researcher experience conducting this study, I believe the findings may have been enriched by a collaborative conversational interview with all three participants together, somewhat like a focus group. It occurred to me once I had collected all the individual participant data that these interviews were not simple question/answer semi-structured interviews. Each participant had engaged in interpretation and meaning-making of their experiences in collaboration with me. Realizing this, I wondered if a conversation among all four of us would yield an even richer understanding of the experience of pedagogical reasoning in highly competent teachers.
Conclusion

Through this interpretive phenomenological analysis, I have provided a rich account of the pedagogical reasoning of three highly competent middle school teachers, as well as the ways their pedagogical reasoning can be explained in terms of professional phronesis. The themes that emerged from the cross-case analysis of data revealed that 1) pedagogical reasoning develops over time through both formal professional development experiences as well as through identifying and working to solve problems that emerge in routine practice; 2) pedagogical reasoning operates constantly in two modes: deliberate and spontaneous; and 3) pedagogical reasoning is oriented towards setting and achieving multiple goals at once, which include goals for students and goals for self, which reflect a connection to the personal and professional identity of the practitioner and rely on relationships with students. Additionally, evidence of professional phronesis emerged within the participants’ experiences of pedagogical reasoning to reveal a clear relationship between the pedagogical reasoning of highly competent practitioners and professional phronesis. While there is a clear relationship among the constructs, it is also clear that the pedagogical reasoning of highly competent practitioners cannot be fully described by professional phronesis; however, all aspects of pedagogical reasoning were found to reflect some aspect of professional phronesis, and all aspects of professional phronesis were found to reflect some aspect of pedagogical reasoning.

The conceptual framework guiding the study was informed by several concepts of teacher pedagogical reasoning and served to situate the research within a broader field of study. The view of teacher knowledge and reasoning adopted in this study acknowledges the cognitive processes outlined by Shulman (1987) related to teaching a specific content and the processes of knowing-in-action and reflection-in-action outlined by Schön (1983, 1987). The view of teacher
reasoning adopted by this study accepts that teacher reasoning is theoretical, technical, as well as practical/moral as reflected in Aristotle’s episteme, techne, and phronesis, presented by Orton (1997) and acknowledges phronesis as a dimension of practitioner knowledge and reasoning that is rarely acknowledged in the current paradigm of teacher accountability and evaluation. Additionally, the present study acknowledges that expert knowledge, whether theoretical, technical, or practical/moral, is often tacit knowledge, and that the tacit knowledge of experts is fundamental to practical wisdom. Finally, since expert practice is often tacit, and since experts rarely engage in deliberate reflection except in the case of anomalies of practice, it is necessary to provide opportunities for guided reflection in order to access teacher’s pedagogical reasoning that may be likened to phronesis. The results of this study are consistent with the conceptual framework in that the pedagogical reasoning of the participants reflected elements Shulman’s cognitive process, Schon’s reflective practice, as well as evidence of phronesis, which reflects Orton’s assertion that teacher pedagogical reasoning reflects all three ways of knowing.

It is my hope that in this study, teachers and teacher educators alike might find resonance with the voices of the teachers whose experiences are shared within it. Likewise, I hope that the illustrations of professional phronesis from the participants’ experiences of pedagogical reasoning might encourage further conversation about this way of knowing that is often absent from the discourse on teacher knowledge. Returning to Jackson’s (1986) question: “Is there more to teaching than the skilled application of know-how? If so, what is it?” (p.1), I believe that this study answers that question. Certainly, as evidenced by the experiences of the participants in this study, ways of knowing in teaching are multiple and simultaneous. While the current view of what constitutes know-how in teaching is impoverished, Aristotle’s special virtue, phronesis,
has the potential to reclaim the value of practical wisdom based on wise judgment as essential features of teacher knowledge.
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Appendices
Appendix A: Initial Interview Protocol

Purpose: The initial and final hermeneutic phenomenological interviews will provide the participants’ perspectives on their experience of pedagogical reasoning both prior to and during instruction. Following the phenomenological tradition, interviews will begin with a conversation to orient the participants to the phenomenon of pedagogical reasoning.

General Interview Guide:

I’m interested in understanding the invisible aspects of your practice. The term I will use is “pedagogical reasoning,” which for the purposes of our conversion, is the thinking involved in processes of teaching: transforming knowledge in order to teach it to students, instruction, and evaluation of student learning and your own performance.

Pedagogical Reasoning Prior to Instruction:

1) How do you generally prepare for lessons?

2) What are the things you consider when preparing lessons?

3) How do you know what’s going to work with a particular group of students?

Pedagogical Reasoning during Instruction

4) Can you think about a time when an activity didn’t go like you thought it would?
   a. Can you tell me about what happened?
   b. How did you recognize things weren’t going as planned?
   c. What did you think in that moment?
   d. What did you do?
Appendix A (continued)

e. What was the thinking that led you to that action?

f. What was the outcome?

g. In what ways, if any, did that experience change the way you would approach a similar situation in the future?

5) In general, when things don’t go according to plan, what are the things that you think about in the moment?

6) How would you describe the experience of thinking through those situations when you get the sense that you need to make an adjustment during teaching?

7) What connections, if any, do you make between how you plan for instruction and how you deliver instruction in the moment?

8) Is there anything else about your experience of pedagogical reasoning that you’d like to share?
Appendix B: Written Protocol Instructions

Following our initial interview about your pedagogical reasoning, I would like for you to take a few moments to think back over other examples in your teaching experience when you were faced with something unexpected that caused you to make an adjustment to your teaching. Understanding that pedagogical reasoning involves all stages of the instructional process from planning to evaluation, feel free to consider all of these phases as you tell the stories of these incidents. I would like for you to write about at least two experiences from your past when you faced something unexpected in your practice. Similar to our initial conversation, you may begin by telling the story of what happened, then reflect on what you were thinking at the time, what you decided to do, what the outcome was, and what you learned from that experience. You may also think back to what about that situation makes it memorable to you. Feel free to include as much detail from the incident as you feel is appropriate, remembering to omit the names of others involved in the situation.
Appendix C: Final Interview Protocol

Purpose: The initial and final hermeneutic phenomenological interviews will provide the participants’ perspectives on their experience of pedagogical reasoning both prior to and during instruction. Following the phenomenological tradition, interviews will begin with a conversation to orient the participants to the phenomenon of pedagogical reasoning.

General Interview Guide:

Orienting question: Looking back over your written reflection, did anything you recalled surprise you?

Now that you have had the opportunity to reflect on your pedagogical reasoning through our dialogue, and reflect on your past experiences engaging in pedagogical reasoning:

1) What about the way you experience pedagogical reasoning stands out to you?

2) What patterns, if any, do you notice in the way you think through instructional decisions?
   a. Are there certain things or types of things you consider over and over?
   b. Are there factors that you consider more relevant than others?

3) Would you describe how your personal experience of pedagogical reasoning?

4) Is there anything else about your experience of pedagogical reasoning that you’d like to share?
Hand, foot and mouth disease has been my nemesis this week so far. I have an hour or two today, and I am ready to move on to the third hermeneutic unit.

Some things that occur to me as I move on to the next case – my mind tends to jump ahead to presentation of the findings, but my commitment to the cases, or to the individuals themselves, may be causing me to overthink my goal for this analysis. Again, I’m back to the research questions themselves for guidance. I can see how qualitative research guides and manuals encourage researchers to remain close to the questions, because I did get so much rich data from my participants that it is tempting to include everything, even at the risk of losing the research questions. But that is the very definition of poor qualitative research. When I go back to the questions, things come into focus again. Question #1 – describe and interpret the pedagogical reasoning of expert teachers. When I look at that closely, the question, “how do expert teachers experience their pedagogical reasoning?” It’s really a two part question – it is a “what does the PR of these participants include (describe and interpret)” question, and it is a “how is PR experienced (as lived)” question. A “what” and a “how.” The superordinate themes that will guide the cross-case analysis speak to this question directly. (Hooray!). Question #2 – In what ways does the PR of these experts reflect phronesis? This is really a multi-layered question. First off, I had to define what phronesis is, which I did in chapter 2. I’m concerned now, however, that I need to go back and refine that definition. For this theoretical-level analysis, part of what makes this a non-traditional phenomenological study, I will need to go back to the lit. I recall that this is a common step in qualitative research – that the literature is refined based on what emerges in the data. To answer the phronesis question, I will need to do another within-case and across case analysis that elucidates the aspects of PR that represent phronesis, or fall into the domain of phronesis. In order to accomplish this with clarity, I may need to find a better working definition of phronesis, so that I might say in the discussion that what I see here aligns with X’s definition of phronesis, but not necessarily Y’s definition.

That being said, I feel super confident in my ability to answer question #1 from this set of data. I feel confident about answering question #2, but I’m purposefully “ bracketing” much thought about that so that I can focus first on question one. I will get to question two in good time. I’m still working through the phases I outlined for myself back on 9/13. Time to move on to case three. Today I’m going to start my first reading, and I’m a little nervous about this case because I remember during transcription that she didn’t let me
Appendix D (continued)

do much talking. That might actually make this case easier to analyze, and I will know for myself here that this participant has the most experience, and is a NBCT who started as a professional developer, so she has had many opportunities throughout her entire career to engage in extensive reflection. This may explain her ability to answer my questions without to much prompting, and it may explain why she has more to say than the other two. That is interesting to me.

10/4/2013

I just finished my initial reading of F’s interviews. I get a sense, in comparison to the other participant data, that she didn’t need much prompting at all to get at talking about herself, her teaching, her thinking, etc. That just means that this case was somehow easier to notate, and will be easiest to code because she is SO CLEAR. In the first interview of over an hour, I only asked 3 questions (paraphrased): 1) How’d you get to teaching?, 2) How do you make learning happen?, 3) What do you do when things do go like you thought? Certainly, I can’t be sure, but a couple of things stand out about her and make her extraordinary. First, she has been involved in some kind of professional development – some pursuit of growth in knowledge about teaching since even before she took her first full-time gig at the middle school. After her internship, she took a long-term sub, but then she went back to being a GA in the honors society while she got her masters. She has continued to develop herself and be a developer at the same time, through gifted education, NBTC, & NWP, and she is clear that she attributes who she is as a teacher, how she thinks as a teacher, and how she operates as a teacher to these “KEY ELEMENTS” of her development as a teacher. She makes it clear that for her, and I believe in the others, although I still haven’t given myself full permission to consider them all at once yet, her professional development was key to the development of her pedagogical reasoning, and it is the foundation of her PR even now. (Finding – PR is shaped by professional learning/development.) There is also an element of learning from her mistakes, which I see as that problem solving frame that I’ve seen in the other two. For F, she has some foundational goals for her students that are based on some fundamental beliefs she has about teaching gifted middle school students. Those fundamental beliefs can be traced to her own learning experiences (particularly as an adult through NBCT process), her parenthood/motherhood, her training in the population, and her knowledge of the population over time. A new thought emerged in this data set that may or may not be evident in the others if I look back, but did resonate with my own experience. At one point, F explains why teaching drop-out prevention along with her gifted was exhausting and left her a “dishrag.” For one thing, the gifted kids were her main responsibility, so there was a sense of long-term commitment to that demographic. Because she needed a full schedule, she ended up teaching a hodgepodge of other things, and drop-out prevention was include in her 2nd and 3rd year based on the interesting idea that the drop-out kids should be taught
Appendix D (continued)

using the same strategies as the gifted. Also, as a side note, what is interesting about this case is that the specific needs of her students, being that they are gifted, and as such, require special services like all exceptional students, the importance of their specific learner characteristics is a given up front. The other two cases dealt with primarily struggling students, but not exceptional students, and so there was no special training on the population for those teachers. Back to the drop-out prevention kids, she was asked to use those specific gifted-oriented strategies with a totally different population. I see this as a small, micro picture of what happens when teachers are asked to teach kids the same way without regard for their specific learning needs. F felt failure, (I believe she was set up for failure with the assumption that the gifted strategies would work for these polar-opposite students), and she felt “worthless” with them, the students were frustrated, and she got lost indiscipline problems with them. Meanwhile, she continued to grow with the gifted because her knowledge about them and the strategies she was using aligned, and she had time to learn from her mistakes with them. That didn’t happen with drop-out. My new thought was really a wonder – I wonder if there is something to teaching the same CONTENT long enough (teaching the same thing) enables teachers to then focus on the students to then begin to shape their instruction based on their understanding of the student needs?

10/11
While this week was a near bust for time to work on this project, I was able to complete my second reading of F’s hermeneutic unit and code the transcripts. I can clearly see where she differs from the other two. She didn’t really say much, if anything, about PR on the fly. This would be consistent with both the Dreyfus & Dreyfus model of expertise and with Schon’s model of reflective practice. F is so developed, and she is so reflective that her thinking on the fly is strictly intuitive. It is as if, after working with gifted students for over 20 years, she has such a deep understanding of the general characteristics of the learner that the classroom interaction with students is no longer “problematic” to her, even though things might not go quite as planned. Her confidence in knowing the needs of the students she has allows her to manage complexity in assignments and feel comfortable with the “margin of error” she is likely to have with any activity or group of students – since that margin of error is likely narrow after many, many years of problem solving. She was aware of problems and spoke of struggling to make changes to her well-oiled machine of a curriculum. She identified the problem of grammar in her students’ writing, noticing that they were coming to her with less and less understanding of basic grammatical concepts. She articulated her belief that grammar should be taught in context of writing, which reflects her knowledge of the contemporary research on grammar instruction; however, she conceded that one can’t have a decent conversation about revision (a grammar in context strategy) without having some basic vocabulary for grammar concepts. Right there, I can see that her pedagogical reasoning is framed in this instance as problem solving, includes her knowledge of research on teaching in
language arts, includes her own experience in trying to teach students grammar in context, and her identification of a gap to fill. The disruption to her flow – or the problematic issues that she identified were not related to her inability to communicate more effectively with students (hiccups in instructional moments); rather, disruptions to her flow were based on deeper instructional concerns. The other major issue she described was her attempt to restructure her curriculum to align with the common core state standards. She talked about how exhausting “exploratory mode” is for her, when she’s trying to figure out how to create, organize, deliver, assess instruction to accommodate new “rules.” She also identified the conflict she feels between what is best for her students and the way students and teachers are assessed and evaluated, and her frustration was more clearly articulated than the other two participants.

Emergent Themes for F

PROFESSIONAL DEVELOPMENT/LEARNING TO TEACH
• Attributes the teacher she is today to KEY ELEMENTS of her development
  o The decision to be a teacher (answer the call she felt)
  o Undergrad to honors program
  o Honors program to PDS
  o PDS to NBCT
  o NBCT to NWP
• Grew and built in all of them; how she thinks, how she operates
• Early professional development shaped her thinking and provided deep foundational thinking/beliefs (I8-9)
  o Power of communication
  o Importance of reflection on learning (fu8)

FOUNDATIONAL BELIEFS ABOUT GOOD TEACHING
• Good teachers find a way to reach all kids (I10); you can’t teach them if you can’t reach them (fu18)
• Make learning a positive experience (I11)
• Caring enough to hold kids accountable (I11)
• Being upfront, honest, transparent (I11)
• Humility (I11)
• Good communication with students
  o Never talk down to kids (I12)
• Builds relationships through caring communication (i12)
• Content can be “googled”; must teach kids what to do with information they encounter (i13)
• Best lessons have many layers, and are intricate and complicated (i15)
• Connection between teacher and student motivation – students will only go as high as the teacher; teacher will only go as high as she is allowed (i28)
Appendix D (continued)

- Requires
  - Freedom (i29)
  - Autonomy (i29)
  - Time (fu18) most valuable commodity
- Until she knows students, content is secondary (fu5)
- Important to understand population at large and variations between (fu5)
- Focused on the critical consumption of content rather than straight content (fu10)
- The purpose of teachers teaching in schools is to
  - Teach life skills (fu11)
  - Work habits (fu11)
  - Critical consumption of information (fu11)
  - Prepare students for real life (fu11)
  - How to study, break things down, go to the right resource (fu11)
  - Produce citizens (fu13), people who know how to exist (fu13);
  - Schools offer opportunities to think in ways that apply every day and the life skills that are required are implicit in the way things are done (fu14)
- Questions measures of school success such as:
  - Test scores
  - Rates of crime (fu15)
- Questions how teachers are given credit or blamed for school success or failure (fu15)
  - Student success is a culmination effect of all teaching efforts over time (fu16)
- Good teaching is like parenting, (fu18); it takes a village (fu18)
- Public misconception about teachers (fu23)

KNOWLEDGE OF STUDENTS
- Middle school = relationships (i12)
- Focus on students “multipotentiality” (i14)
- Gifted students need complex assignments (i15)
- Gifted students have low tolerance for struggle (i18)
- Students make decisions about how far they will go; gifted kids need to be pushed, but not to the point of breaking, so it requires finding the right balance (i20)
- Middle schoolers separate home and school, and they need help communicating across areas (fu2)
- Gifted middle schoolers need to feel that the teacher is at least as smart as them (fu4)
- Goal is to know students before trying to get at content (fu5)
  - Important to understand population at large and variations between (fu5)
GOALS

- FOR STUDENTS
  - Know the power of communication (i13)
  - Know how they learn (metacognition) (i13)
  - How to build/work on relationships (i13)
  - How to be effective consumers of information (i13)
    - Filter it, make ethical decisions, live w/ themselves, build relationships so they can reach their goals, keep doors of opportunity open
  - Be reflective learners (i16);
    - reflection and analysis of learning rather than +,-, delta on assignments (fu7);
    - Set goals (fu7) and keep going back to reflect on growth (fu8); metacognition in reflection journals (fu9); set goals to connect to the learning, improve, and move forward (fu10)
  - Self grade using rubrics, become an independent self-evaluator (i19)
  - Be self-advocates (i23); speaking with “scary people” (fu7); go to the right resources/people (fu11)
  - Be organized (fu1)
  - Manage their time (fu1), (fu11)
  - Develop work habits (i16), study skills (fu11)
  - Be accountable (fu2) (fu12)
  - Take ownership of learning (fu3); be autonomous (i12); be independent (fu12)
  - Be prepared for whatever HS throws at them (fu17)
  - Appreciate tough challenges and hard work (fu17)
  - Know that life is more important than school (fu17)
  - Example of Layered assignments
    - Develop work/study habits (i16)
    - Difficult enough to make students grapple/struggle and persevere (i16); a lot of work to force perseverance (i18); when things get to easy, she changes thing (i30)
    - Open to allow for individual student growth over time (i16); personal growth (i18)
    - Enough structure to be scored in a way that shows growth, but content can grow/change (a method) (i17)
    - Recap – Assignments that are deep, complex, show growth, and allow for further to go once the ideal is reached (i20)
Appendix D (continued)

• FOR HERSELF
  o Make learning tougher than they’re used to (i14)
  o Build a program that moves her students forward (i29)
  o Not allow things to get to easy (i30)
  o Give students challenging assignments that move them forward in many ways at once – LAYERS (fu1)
  o Build student accountability (fu2)
  o Build trust in students, win them over without taking offense to their arrogance (fu4)
  o Know the population (fu5)
  o First goal of the year – Uncover who students are through language arts activities (fu6)
    ▪ Layers
      o Build the community
      o Build the trust
      o Build the skills (fu6)
      o Develop rapport (fu6)
  o Be more about the kid than the assignment (fu17)

PEDAGOGICAL REASONING
• Deliberate
  o Layered assignments with complexity, depth, and openness (i16-17); reflect her “method”
    ▪ When things get too easy, she changes things (i30) – always assessing the level of difficulty
  o Example of Vocabulary lessons (i17)
  o Example of Independent study projects (i18)
  o Student led conferences (i19)
  o Writing Assignments (i21)
    ▪ These assignments conceptually come from PD on gifted learners (fu2)
• Examples of Disruption to flow/Problem of Practice
  o Grammar example (i21)
    ▪ Realized students didn’t know grammar (i22)
    ▪ Foundational beliefs -
      o middle schoolers aren’t brain-ready for grammar (i22)
      o Grammar can’t be taught in isolation (i23)
      o Grammar cant be taught in context without basic understanding of grammar terms/concepts (i23)
      o CCSS now refers to specific grammar terms (i23)
    ▪ Action
      o Explicit instruction in grammar (i24)
      o Created her own assessment (i24)
Appendix D (continued)

- **Outcome**
  - Test scores were awful

- **Response**
  - Stop – cant move forward (i25)
  - Feelings of frustration (i25)
  - Problem solving/reflection
    - What went wrong? (i24)
    - She had not matched the assessment to the practice (i24); error in designing assessment that matched instruction (i25)
    - Had underestimated what students knew (i25)
    - Textbooks were different and used different terminology (i25)

- **Next action**
  - Scramble to find better materials (i25)
  - Avoid frustrating the students (i25)

- **Conflict in PR**
  - Having to change what she believes works to accommodate paradigmatic shift at district level (i22)
    - Grammar (i22)
    - CCSS curriculum (i22)
      - Beliefs
        - CCSS support paradigmatic shift away from content to the critical consumption of information (she supports this) (fu10)
      - Concerns
        - Change in standards effects MANY variables in how she does things (i29)
        - Doesn’t have a whole-year view (i26)
          - This causes her “flow” to be off (i26)
        - CCSS don’t focus on content (i26)
        - Doesn’t want to waste any time creating new curriculum that isn’t going to serve the kids’ needs (i26); EFFICIENCY (i26)
        - Recreating curriculum takes TIME (i26)
        - Teaching new materials changes her goals (i27)
          - EXPLORATORY MODE (i27)
            - Can’t anticipate barriers yet (i27)
            - Needs to learn from mistakes (i27)
            - Temporary problem solving (i27)
            - Needs TIME to sit and reflect
            - Exploratory mode is taxing of energy (i28)
Appendix D (continued)

- GOAL – Build a program that moves her students forward (i29)
  - Example of FAILURE (fu25-26)
    - Teaching drop-out prevention using gifted strategies
    - Ultimately failed because she didn’t know the characteristics of drop-out prevention students (fu25)

IDENTITY
- Feels obligated/committed to 110% (i28)
- Feels responsible to model that level for students (i28)
- Needs freedom and autonomy (i29)
- Feels beleaguered and oppressed bc of mandates (i29)
- Feels tired bc she’s in flux (i29)
- Teacher 24/7 (fu2)
- Role for students to be more about the kid than the assignment (fu17)
- Teacher mind is always on; constant (fu19); she can’t turn it off (fu19)
- Every life experience she has becomes fodder for her classroom (fu19); “it all ends up back here (in the classroom)” (fu21)
- Likens the commitment to preachers or doctors who are their professions (fu19)
- Her teacher identity is so much her whole identity that she has always struggled to find work/life balance (fu20)
- So inextricable that her spouse has to accept the whole package (fu21)
- “In every life I’ve ever lived, I’ve been some sort of teacher.” (fu22)

SUPER-ORDINATE THEMES for F

PR develops over time
- Learning to teach
- Professional development as key

PR is influenced by foundational and overarching beliefs about what good teaching entails and requires

PR is influenced by knowledge of students, characteristics of specific learners

PR is deeply connected to identity, professional/personal

PR as problem solving
Appendix D (continued)

PR as goals
- For students
- For self (as teacher)

10/15
Yesterday was a triumph. Let me back up. What did I overcome? Having completed the analysis of each hermeneutic unit, I officially allowed myself to think in terms of cross case analysis. As early as transcription, I could detect specific similarities across cases – in many ways that extended beyond the limitations of the research question. My mind, which operates to find connection among ideas as quickly as possible, was already making the connections during the interview phase, although I would dump these thoughts and clear my mind for each new participant. Not only did I focus in on the participant to the exclusion of my own experience, but I also pushed away thoughts of the other participants in the moment of the interview so that I could be fully present with each individual. That was easy. But when I left each interview, the thinking started again. That is to say that I have been interpreting this experience, and as such, this data from the very start. Now, while that is the case, the early transcript readings revealed patterns I had not fully detected as an active participant in these conversations. As I completed multiple close readings and analysis of each participant’s data, I became aware of the categories about which each participant talked at length. The super-ordinate themes for each participant were relatively similar, a concern I mentioned between the readings of the 2nd and 3rd participant data sets. I went back to look at the specific questions I asked, and I actually asked few questions, and the questions I asked were similar across these participant interviews. The questions were wide open ones that allowed the participants to fill the response with whatever they wanted. How did you come to teaching? How do you make learning happen? What do you think about when a lesson doesn’t go as planned? These questions elicited responses that included discussion of their personalities, their backgrounds as students, the process by which they learned to teach, the things that they consider important in making instructional decisions, their philosophies of teaching and learning, how they view their role as teachers and how that’s changed over time, the way they think through problems of practice and how their beliefs and goals guide that problem solving process and lead them to professional learning/growth through both reflection on practice and deliberate professional development opportunities. They talked about their personal lives, and how their profession bleeds over into it. They talked about how they view the “content” of their discipline is and what they feel obligated to “teach” that is outside of that. They all talked about their specific thought process for both deliberate (planned) and spontaneous (on-the-fly) reasoning.

I just took a 2 hour detour to read a lengthy dissertation dated 2006 by a Finnish researcher. I got there by doing another quick Google search for “pedagogical reasoning”, and it was not too far down in the list of results. It was a 315 page report of a study of 4 experienced teachers that examined their tacit knowing in action. I gasped
Appendix D (continued)

audibly when I started to read, and then I got a stomach ache. Two questions very similar to mine, I thought initially, guided the study – one related to how teachers’ tacit knowing appears in instruction, and one related to the content of that tacit knowing. At first, that seemed similar to the questions guiding my study, but they are actually quite different, which was evident in the findings of the dissertation. The questions guiding my study are geared towards teachers’ OWN perceptions and their experiential understanding of their own knowing – which I acknowledge is often tacit. I do not purport to examine teacher knowledge as tacit, I purport to examine teacher knowing from the perspective of the teacher. My first question focuses on participant perceptions and descriptions of their EXPERIENCE, how they experience their pedagogical reasoning. My second question is geared at examining the ways in which that knowing can be described in terms of phronesis. Of course, there is a huge assumption in my second question – that there is a “yes” answer to whether or not teachers’ own descriptions of how they experience pedagogical reasoning. I feel justified in making that assumption based on the literature on phronesis in the practices as a way of framing practical knowledge and as a means of describing a way of knowing that is marginalized in the current teaching context – the “standards and accountability” era. My investigation is not even geared at uncovering the ways that experienced teachers’ thinking is truncated by the predominate and privileged ways of knowing that dictate their professional lives. I already know that happens. I lived it. I see it being lived. But in order to help others understand the import of this other way of knowing that goes beyond content and skills, I wanted to focus my study on essentially illustrating how phronetic knowing dominates the thoughts of expert teachers. The dissertation I read went into excruciating detail about the evolution of teacher thinking research, something I had been searching for but had yet to find. For that, I am grateful for a direction. It also helped me to once again see why teacher thinking is so complicated, and how research tend to FURTHER complicate it. My purpose is to simplify it, make it clear, and give it dimension and voice. I needed to see that. I needed to read that and go through the entire rollercoaster of feeling like a loser for my practitioner-ese and my focus on broader theoretical concepts as entre into the elusive concept of phronesis. As I was reading, I found myself asking the Universe, “What do you want me to get out of this?” The literature review read like an tortuous rendition of mine. Same folks, same concepts, treated differently. She even started with Phillip Jackson as an originating point for teacher thinking research. She gave a history of the development of teacher thinking research, and I attempted to give a similar history on the political influences of how teacher practice has been legislated in the US to show how what little research on teacher thinking had failed to impact the way teachers are prepared or their work governed. I am more interested in that history as it applies to what counts as knowledge because those things influence teachers LIVED EXPERIENCE, where the research on teacher thinking to this point has failed to impact or reflect that lived experience. So, it is from a perspective that acknowledges the research on teacher thinking to date – that has still remained too closely attached to observation of teacher action and underestimates teachers’ abilities to communicate their thinking. I have to stop this
Appendix D (continued)

spiral. Why am I back here? Well, because now I am refocused on the research questions themselves and how I am to answer them based on the data I collected. Having the initial level of analysis completed, I need a means of sorting it so that I can decide what of all that I learned, of all that I identified and coded from these interviews, applies immediately to the questions of this particular report. That means sorting out my all of my own thoughts, my knowledge and understandings about the complexity of teaching along with the lived experiences of these participants. They let me into their thoughts and minds, and I saw them separate from myself. But this act of interpretation is proving to be cumbersome now that I am back to my own thoughts about their thoughts. Hence the need for a framework. Looking back at the framework I first proposed, I see it there. The goal of my literature review was to establish that popular models of teacher reasoning do not capture the full complexity of teaching to include the domain that has been described in terms of phronesis. The phronesis literature stops short of providing the kind of illustration of, nuances of, contents of, and processes of teacher reasoning as phronesis – and to attempt to get at that domain, I proposed to go in and gather data on teacher reasoning as experienced to then determine if and how teacher reasoning can be described in terms of phronesis. That is why phronesis is central to my literature review – because it is the theoretical basis of this study. Essentially, it goes like this – current modes of determining what teachers should know and be able to do in their work excludes the knowledge described by phronesis. Phronesis accounts for an active way of knowing that is both means and end – it is a way of active thinking as a process, and its result is a new understanding. That Finnish dissertation represented that relationship in a diagram that showed the interaction of different knowledges in a process model. So, my goal in the single case analysis is to answer the research questions – how pedagogical reasoning is perceived and described, and what of that falls into the domain of phronesis. I have been purposefully waiting to interpret the data in terms of phronesis, but I am finding that in order to sort it meaningfully for the goal of reporting the data, I cannot interpret the pedagogical reasoning separately first, then go back to determine fit with phronesis.

After creating a matrix to help me sort the themes across cases with the goal of distilling the essence of pedagogical reasoning across cases, I realized that I have already identified that the nature of the teachers’ talk about their thinking revealed it as both procedural and categorical. There was a how they thought and a what they thought at the same time. That reflects the means/end nature of phronesis. The examples of their thinking in relationship to pedagogical moments in the pedagogical situation (Van Manen) (10/22/13) both illustrate their thinking process, but also the process by which they come to know. The PR of these highly competent teachers is both a how and a what question, and the fact that it’s both points towards phronesis. That being the case, I have been struggling with answering the two questions separately, as if there are separate data to independently support each question. That is one of the ironies of practical knowledge – it is both propositional (knowledge of what is), but it is generated through experience(s) over time, so it’s active – and actively changing/growing. That,
too, points to phronesis. I needed a way to talk about the data in terms of the questions, and I yesterday, I found that frame. First, I have clear themes across cases that show – for these participants – that the essence of PR involves the following 6 features:

• 1) PR is experienced contextually/situationally
• 2) PR involves reflection
• 3) PR is connected to identity
• 4) PR is layered/complex
• 5) PR develops over time through experience
• 6) PR involves negotiating conflicts between personal beliefs and what is required

When I looked back at the definition of phronesis I used in my proposal, it was too general to be helpful in analysis for question number 2. I decided to go back to the Kinsella and Pitman text on professional phronesis that shaped the direction for the study. In reviewing the chapters, I made two discoveries. First, I saw that Sellman refers to the Race (2006) model of competency as a means of addressing qualities of phronesis that apply in professional practice. Sellman sees the Race model as one that builds on the Schon model of practitioner reflection in a way that highlights the issues of reflection and phronesis in relationship to thinking and growth in competent practice. I see the Race model as helpful in describing the actual process of knowledge generation that the teachers who participated in the study shared in terms of the pedagogical reasoning process. The model utilizes four quadrants that represent two axes: the dichotomy of knowing and not knowing and the dichotomy of competency and uncompetency. The quadrants, then represent the following:

• Knowing our competencies
• Knowing our uncompetencies
• Not knowing our competencies
• Not knowing our uncompetencies

Sellman contends that the to “not knowing” quadrants are the areas where Schon would find similarity to his reflective, highly competent practitioner, and mirrors Socrates contention that wisdom requires insight into one’s own ignorance. This describes what each participant shared with me in terms of a journey towards expertise – that they were at some point aware of their own ignorance, and sought the means to uncover their unknowing having realized, like Sellman suggests, that things unknown to us can get in the way of competent practice. Phronesis, Sellman suggests and I found, too, has to do with acknowledging ones unknown uncompetence, a willingness to seek out strategies to reveal those things previously hidden from oneself, and the willingness to act on the findings. Reflective practice (Schon) is one of those such strategies. There is a minimal level of self-awareness Sellman suggests is required to be a competent practitioner. With awareness of self comes identification of ignorance, and with that comes the journey to make previously unknown things known, and once these previously hidden things are known, they move from the unknown (unconscious) quadrants to the known (conscious) quadrants. BINGO! Guiding frame that unites PR with phronesis.
Appendix D (continued)

The second discovery was that the features of professional phronesis on which there was considerable agreement among contributors to the Kinsella and Pitman text were reviewed in the last chapter, and provided me with a workable list of qualities of professional as opposed to Aristotelian phronesis. I analyzed these features in order to distill them – or group them into like categories. I arrived at the following:

- Professional phronesis is:
  - A quality of mind, character, and action that straddles reason and emotion, cognition and affect
  - The capacity to think critically about a situation (reason), and then think practically about what should be done (judgment).

- Features of Professional phronesis:
  - Depends on aspects of the individual practitioner
    - It is informed by one’s history and experience (experiential)
    - It is informed by one’s disposition (personal)
  - Is linked to morally committed action
    - Requires action with ethical/moral overtones
    - Willingness to act/take action
    - Committed to RIGHT (prudent, wise) action
    - Increased personal responsibility/liability/accountability for decisions
    - Moral responsibility for actions and their consequences
    - Willingness to stand behind actions
    - Personal responsibility based on expertise
  - Is dialogic and relational
  - Implies reflection
    - Requires interpretive judgment (situational/context dependent) by weighing generalities and particulars in concrete situations
  - Recognizes problematic nature of practice
    - Uncertainty of practice
    - Complexity of practice
    - Aporias – unresolvable dilemmas
    - Paradoxes of practice
  - May be circumscribed by mechanisms of professionalism that prescribe certain actions
    - Yet allows practitioners to persevere

I can already see considerable match here between the PR that my participants described and the features of professional phronesis offered by Kinsella and Pitman. Now, my next steps are to first determine which examples from each case I will use to illustrate the themes of PR (question 1), and as I go, make notes about phronesis connections. Should I then focus on phronesis to determine the best examples of from each case to illustrate alignment with phronesis? No. The second question dictates the boundaries of the data – in what ways does the PR described by these competent
practitioners reflect phronesis. I’m not starting with phronesis and looking for match in the data. I’m looking at the PR in the data, and seeking match with phronesis. That being the case, the illustrations of PR will either align with or not align with phronesis. The examples will illustrate both, and need not be treated separately. Then, in the idiographic illustrations, I can show more clearly the way that phronesis functions as a way of knowing for each participant along with what is distinct/unique about their PR related to their specific contexts/situations.

Halleluiah!