A CASE-STUDY ANALYSIS OF THE CRITICAL FEATURES WITHIN FIELD EXPERIENCES THAT EFFECT THE REFLECTIVE DEVELOPMENT OF PRESERVICE SECONDARY MATHEMATICS TEACHERS

DISSERTATION

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ABSTRACT

This study follows four secondary mathematics preservice teachers as they progress through three consecutive field experiences within a teacher preparation program of a large midwestern university. As part of a comprehensive support and assessment system designed to increase the level of reflection among the preservice teachers, each member of the cohort was expected to work closely with the assigned mentor teacher and university supervisor to set quarterly goals, construct weekly responses to structured and unstructured reflection prompts, and complete a reflective self-assessment of their teaching as outlined by twenty-three competencies. These four participants also attended weekly small group discussions facilitated by the university supervisor each quarter. The preservice teacher and university supervisor met before and after each scheduled teaching observation throughout the academic year to discuss the planning, structure, implementation, and implication of each observed lesson.

The primary focus each separate case study traces the reflective development of each participant from their first exposure to classrooms through their student teaching experience. Through qualitative methods, the reflective thoughts and writings of each preservice teacher were examined to ascertain the critical features of their three separate field experiences that led to a more mature and integrated view of
the work of teaching. Critical features that affect the depth of reflection reached by
the participants were also identified. In a cross-case analysis, the researcher identifies
four critical features of field experiences that can foster deeper and more interactive
forms of reflection. These features include the relationship between preservice
teacher and mentor teacher, the level of feedback received from the university
supervisor, the amount of latitude given to the preservice teachers to explore their
contemporary thinking, and the quality of the second field experience in the sequence.
As a secondary focus of this inquiry, a model for preservice teachers’ reflective
development is presented within the conceptual framework. This model is further
refined, and its applicability questioned in light of current evidence.
This work is dedicated to my partner, J.R. Ousley

Without your love and support, this entire process could not have taken place. Thank you for putting your life on hold for me, for your constant encouragement, for talking me down from the ledge, and most importantly, for teaching the lessons that cannot come from books.
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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Abstract</th>
<th>ii</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dedication</td>
<td>iv</td>
</tr>
<tr>
<td>Acknowledgments</td>
<td>v</td>
</tr>
<tr>
<td>Vita</td>
<td>vii</td>
</tr>
<tr>
<td>List of Tables</td>
<td>xviii</td>
</tr>
<tr>
<td>List of Figures</td>
<td>xix</td>
</tr>
</tbody>
</table>

Chapters:

1. **Introduction** ................................................................. 1
   - The problem and its importance ........................................... 3
   - Research questions ............................................................ 4
   - Rationale .............................................................................. 4
   - Theoretical framework ......................................................... 6
   - A developmental model for reflective development .................. 9
     - An explication of the model ............................................... 9
     - Progression through the cycles ......................................... 12
   - Operational definitions ...................................................... 14

2. **Literature review** ............................................................... 18
   - Reflection as personal growth .............................................. 20
   - Reflection as professional growth ....................................... 24
   - Reflection as community growth ......................................... 27
   - Impediments to reflective growth ....................................... 29
   - Reflection impacts beliefs .................................................. 31

3. **Research methodology** ...................................................... 34
   - Structure of method .......................................................... 34
   - Using qualitative research .................................................. 35
   - Research questions ........................................................... 36
   - The context surrounding the research project ...................... 37
   - Overview of the preservice teacher preparation program ........ 37
     - The role of the university supervisor ................................ 40
   - Research timeline ............................................................. 42
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participants</td>
<td>42</td>
</tr>
<tr>
<td>Researcher as participant</td>
<td>42</td>
</tr>
<tr>
<td>My history in education</td>
<td>44</td>
</tr>
<tr>
<td>My history in supervision</td>
<td>45</td>
</tr>
<tr>
<td>Researcher subjectivity</td>
<td>46</td>
</tr>
<tr>
<td>Preservice teachers</td>
<td>50</td>
</tr>
<tr>
<td>Mentor teachers and research sites</td>
<td>52</td>
</tr>
<tr>
<td>Data sources</td>
<td>54</td>
</tr>
<tr>
<td>Initial writing sample</td>
<td>55</td>
</tr>
<tr>
<td>Pre-study and post-study questionnaires</td>
<td>59</td>
</tr>
<tr>
<td>Weekly reflective writing</td>
<td>61</td>
</tr>
<tr>
<td>Observation fieldnotes</td>
<td>62</td>
</tr>
<tr>
<td>Pre- and post-observation interviews</td>
<td>63</td>
</tr>
<tr>
<td>Interview and debriefing audiotape transcripts</td>
<td>65</td>
</tr>
<tr>
<td>Weekly small group discussions</td>
<td>66</td>
</tr>
<tr>
<td>Competency packet ratings and evidence</td>
<td>67</td>
</tr>
<tr>
<td>Focus group transcript</td>
<td>69</td>
</tr>
<tr>
<td>Supervisor feedback form</td>
<td>70</td>
</tr>
<tr>
<td>Personal experience of the researcher</td>
<td>70</td>
</tr>
<tr>
<td>Dealing with data</td>
<td>71</td>
</tr>
<tr>
<td>Data management</td>
<td>71</td>
</tr>
<tr>
<td>Honoring the security and identity of the participants</td>
<td>71</td>
</tr>
<tr>
<td>Electronic storage</td>
<td>72</td>
</tr>
<tr>
<td>Physical copy storage</td>
<td>73</td>
</tr>
<tr>
<td>Data analysis</td>
<td>75</td>
</tr>
<tr>
<td>First attempts at coding</td>
<td>76</td>
</tr>
<tr>
<td>Letting go enough to listen</td>
<td>79</td>
</tr>
<tr>
<td>Creating separate cases</td>
<td>83</td>
</tr>
<tr>
<td>Credibility and trustworthiness</td>
<td>85</td>
</tr>
<tr>
<td>Triangulation</td>
<td>85</td>
</tr>
<tr>
<td>Peer review</td>
<td>86</td>
</tr>
<tr>
<td>Member checks</td>
<td>87</td>
</tr>
<tr>
<td>Prolonged and persistent engagement</td>
<td>88</td>
</tr>
<tr>
<td>4. The case of Charles</td>
<td>89</td>
</tr>
<tr>
<td>Introducing Charles</td>
<td>90</td>
</tr>
<tr>
<td>Recalling his own school experience</td>
<td>90</td>
</tr>
<tr>
<td>Articulating a vision for teaching and learning</td>
<td>91</td>
</tr>
<tr>
<td>Initial thoughts of good teaching and learning</td>
<td>95</td>
</tr>
<tr>
<td>Initial thoughts of effective teachers</td>
<td>96</td>
</tr>
<tr>
<td>Explicating a metaphor for teaching and learning</td>
<td>99</td>
</tr>
</tbody>
</table>
Charles experiences the dilemmas of student teaching .................. 171
   The time-trap of student teaching ........................................ 172
   Direct instruction is just easier ........................................... 173
   Imposed policies versus invented practices ............................. 175
   Struggles with classroom management ................................... 178

Charles’ epiphany
   I don’t like the teacher I’ve become ...................................... 180
   Glimmers of hope for Charles .............................................. 182

Summarizing Charles ................................................................. 184

5. The case of Carrie .......................................................................... 187

   Introducing Carrie ........................................................................ 187
   Articulating a vision for teaching and learning ......................... 188
      Initial thoughts on effective teachers ..................................... 191
      Initial thoughts on effective teaching ..................................... 192
   Explicating a metaphor for teaching and learning .................... 193

Carrie in Autumn ............................................................................ 194
   The context of Carrie’s Autumn Quarter field experience ............. 194
      Carrie’s placement school ...................................................... 195
      Carrie’s mentor teacher .......................................................... 196
   First teaching experiences ......................................................... 197
      The ease of adapting traditional teaching ................................. 198
      Initial dissonance from homework ........................................... 199
      Initial dissonance from lesson structure ................................... 201
   First teaching successes ............................................................ 202
      The benefits of empowerment .................................................. 203
      Discovery increases student engagement and interaction ......... 206
      Carrie’s mentor teacher dashes her feelings of success ............. 207

Summarizing Carrie in Autumn ....................................................... 210

Carrie in Winter ............................................................................... 211
   The context of Carrie’s Winter Quarter field experience ............... 211
      Carrie’s new placement school ................................................ 213
      Carrie’s new mentor teacher ..................................................... 214
      Carrie’s new class and their learning needs ................................. 214
   Carrie becomes integrated in the classroom community .............. 216
      Adjusting to middle school learners .......................................... 216
      Eager to take control ............................................................... 219
      Blending practice and beliefs .................................................... 221
   Carrie’s developing classroom practice ...................................... 221
      Blending practice and beliefs .................................................... 223
      Reflection takes a personal turn ............................................... 224
      They can work in groups .......................................................... 226
   Carrie’s path to teacherhood ....................................................... 228
The context of Azeem’s Winter Quarter field experience...........279
  An unsecured placement..........................................................279
  Preconceived notions of urban schools..................................280
  Azeem’s new placement school.............................................280
  Azeem’s new mentor teacher...............................................282
The path to Azeem’s empowerment...........................................283
  Eager to seize control..........................................................283
  Taking the fast track to ownership......................................284
  Making connections on his own............................................286
  Reflection becomes a personal search for meaning............287
Azeem’s developing classroom practice.................................289
  Blending practice and beliefs.............................................290
  The importance of structure..............................................292
  The importance of classroom culture.................................293
Azeem’s moves toward teacherhood........................................295
  Questions arise from classroom practice.............................295
  Exploring ideas in a safe space...........................................298
  Technology helps define his teaching style........................299
Summarizing Azeem in Winter..................................................302
Azeem in Spring...........................................................................303
The context of Azeem’s Spring Quarter field experience...........303
  A return to familiar surroundings.........................................305
  A signed contract in hand...................................................306
  Focusing on the present.....................................................306
Personal freedom brings the vision to life................................307
  This will be my classroom...................................................308
  Building relationships with students....................................310
  Creating opportunities for student learning.........................311
  The courage to explore different pedagogies.........................313
  Rethinking the role of the classroom teacher.........................315
Creating an authentic teaching self........................................316
  Different styles for different audiences..............................316
  Weak excuses.........................................................................317
  One reason is not enough...................................................318
  I’ve found what works for me..............................................320
Summarizing Azeem..................................................................322

7. The case of Brett.................................................................325
Introducing Brett........................................................................325
Articulating a vision for teaching and learning.......................326
  Being a positive influence....................................................327
  Rethinking traditional mathematics teaching.........................327
  The importance of interpersonal relationships......................329
Appendix C: Two sample reflection prompts ................................................................. 442
Appendix D: Pre-observation interview protocol ........................................................... 445
Appendix E: Post-observation interview protocol ......................................................... 447
Appendix F: Two sample competency packet rubric items ......................................... 448
Appendix G: Focus group interview protocol ............................................................... 451
<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>Research project data sources</td>
<td>56</td>
</tr>
<tr>
<td>3.2</td>
<td>Additional research project data sources</td>
<td>57</td>
</tr>
<tr>
<td>Figure</td>
<td>Page</td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>A conceptual model for the development of preservice secondary mathematics and science teacher reflective thinking</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

xix
CHAPTER 1

INTRODUCTION

During their clinical experiences, preservice teachers are placed into a whirlwind of activities that comprise the daily life of the classroom teacher. The majority of their day is spent balancing administrative tasks, planning lessons, making content accessible, organizing resources and materials, managing the classroom and student behavior, providing feedback, and adjusting to the never-ending source of interruptions to conventional classroom operations. In other words, preservice teachers become adept at managing their time and activities to meet the needs of others, oftentimes not attending to their own professional growth and their personal perceptions of being an emerging classroom practitioner. During their field experiences, the classroom that they have experienced for more than sixteen years as an unshakable social structure suddenly becomes bewildering and problematic (Posner, 1996).

The transition from thinking of the classroom as a student to developing reflective classroom practice is not an easy one to make. Preservice teachers are traditionally placed in positions where they are trained to please, to defer their own beliefs and personal histories to professors and supervisors in hopes of passing grades
and positive evaluations, and to withhold their voice from classroom interactions at
the risk of offending those in power over them. In their early stages of development,
.preservice teachers often project images of what they feel constitutes “good teaching”
based on what they think education faculty want to hear (O’Brien & Schillaci, 2002).
It is as if they are trapped in a delicate interface between a classroom they inherit and
their classroom yet to be.

The learning trajectory followed by preservice teachers is quite complex. It is
a winding road composed of contradictions that do not easily coexist. There are
obvious struggles to reconcile the experiences they encounter within their clinical
placements and their own beliefs; the realities of classroom dynamics; student
behavior; and expectations from mentors, supervisors, school officials, and university
faculty. In an attempt to develop a more productive field experience, clinical practice
should be less about practice teaching and more focused on the investigation of
teaching as a problematic enterprise. To this end, preservice teachers over the course
of their development need a forum to talk about many of the issues that confront them
in the field (Wilson & Cameron, 1996). Putting their experiences in perspective
through interactive and personal reflection helps recall, but more specifically, helps
focus their contemporary thinking about the act of becoming classroom teachers.
Open and thoughtful exploration of classroom experiences begins a “process of
becoming” that leads to internal and external discussions related to controversial
topics, a re-examination of personal belief systems, and an avenue to deeper meaning
and understanding of the work of teaching.
The Problem and Its Importance

The use of reflection by preservice teachers as they progress through teacher education programs has been recommended as perhaps the most effective tool for mentors and supervisors to come to understand the thinking and concerns of the preservice teachers they are assisting (Posner, 1996). By learning to actively reflect on classroom events and practice, the preservice teacher enhances his or her own capacities to deal with the complexities, uncertainties, and ambiguities that characterize professional roles and responsibilities. Because writing is our representation of the world made visible, embodying both process and product, reflective writing and introspection are more readily a form and source of learning (Emig, 1977), valuable tools that can enhance clinical experiences and clinical practice.

Yet, not all preservice teachers are able to navigate the quagmire of influences that come to bear on daily classroom interactions within their field experiences to develop reflective habits of mind. Stages of preservice teachers’ development do not occur on a set timetable. In fact, it may take years of actual classroom practice for novice teachers to become comfortable with the content, the school environment, the students, and the students’ levels of knowing and understanding so that these elements fade to a secondary focus. Once comfortable within their school environment, they may able to critically examine their own practice.
Research Questions

Over the past four years, the mathematics, science, and technology education teacher preparation program of a large, midwestern university has taken great strides to infuse written and oral reflection into the field experiences of secondary preservice teachers. In an attempt to explore the way secondary mathematics teachers come to use reflection on their developing classroom practice, this study seeks to examine the following research questions:

- What are the critical features of the field experiences for secondary mathematics preservice teachers that most significantly contribute to the development of reflective habits of mind that support a more mature and more integrated view of the work of teaching?
- What are the critical features within the field experiences of secondary mathematics preservice teachers that encourage a deeper reflective examination of their developing classroom practice?
- To what extent does the proposed model of preservice teacher development trace reflective growth over the course of their field experiences?

Rationale

Reflective writing serves as a medium to engage preservice teachers in deeper thinking about their experiences within a more constructivist perspective of teaching and learning, and to create a deeper, more meaningful personal and professional understanding of the work of classroom teachers. Reflective writing also creates a
Partnership between academics and school-based practitioners [that] is a two-way process that requires flexibility on the part of both groups. It involves listening to the stories of practice, feeding the stories back in the form of observations, questions, and so on, so that the participants are involved in an ongoing conversation about practice (Sachs, 1997, p. 53).

Non-reflective teachers rely on routine behavior and are guided more by impulse, tradition, and authority than by reflection. They simplify their professional lives by uncritically examining everyday reality in schools (Posner, 1996). In contrast, reflective teachers, “actively, persistently, and carefully consider and reconsider beliefs and practices in light of the grounds that support them and the further consequences to which they lead” (Grant & Zeichner, 1984, p. 4).

Reflection and reflective writing are not new terms in the field of teacher education. Reflective practice on teaching has been used as a strategy for development for many years and has been described in different ways. For this study, reflection will be further explicated as the use of personal and academic language, both verbal and written, that enables the preservice teacher to explore the thoughts and understanding they bring to their classroom practice and the efforts in which they engage while teaching. Current literature abounds with the virtues of reflective practice and the process of self-examination. But, developing reflective habits of mind is as problematic and complex as the world of teaching itself.

Problems with reflection include its overuse, its lack of focus and direction, tying reflective thoughts to grades and evaluative considerations, time
considerations, and an overall propensity on the part of teacher educators to focus more on writing skills over content and thinking skills, and various interpretations of what it means “to reflect.” Yet, when reflective writing and thought is structured in ways that allow the preservice teacher to reframe their clinical experiences against a backdrop of initial values and beliefs, the act of reflection turns the educational experience into experiential education (Hoban, 2000).

Theoretical Framework

Preservice teachers often need help in order to use relevant knowledge that they have acquired, and they usually need feedback and reflection so that they can try out and adapt their previously acquired skills in new environments (Bransford, Brown, & Cocking, 2000). Daily, hourly, and minute by minute, teachers attempt to solve problems that arise in their classroom practice. The ways that these problems are framed, conceptualized, and considered shape their solution (Dewey, 1933). It is through the reflection on teaching and student learning that novice teachers become more skilled, more capable, and in general, better teachers. Since teaching is work that entails thinking and feeling, those teachers who are more able to reflectively think and feel will find their work more rewarding and their efforts more successful (Zeichner & Liston, 1996).

While teachers are constantly making and negotiating meaning within their particular classroom, not all thinking about teaching constitutes reflective teaching. Reflection is not simply "learning in the raw” (Bruner, 1996), but making sense of
what is learned and understanding it. Reflection signifies that there is a personal
generation of new knowledge about teaching that makes complex judgments based on
deep understandings of students and subjects. When previous understandings and
unchallenged preconceptions become engaged, preservice teachers can move to grasp
a fuller meaning of new information gained from their university coursework and
field experiences. It is incumbent upon those preparing preservice teachers to provide
them with opportunities to reflect on significant teaching situations and problems and
to help them draw upon related theory to analyze and understand the situations and
resolve the problems of practice (Cruikshank, 1996).

Despite differences in the various conceptualizations of reflection that
permeate the academic literature, there are some commonalities. Primarily, reflective
teaching examines, frames, and attempts to solve dilemmas of classroom practice.
Since the entire teaching enterprise is fraught with dilemmas that pit highly valued
alternatives against one another, teachers must be able to confront and manage these
dilemmas. They must make meaning out of ambiguity; they must act in the midst of
conflict (Smylie, Bay, & Tozer, 1999). Reflective teaching also creates an awareness
of, as well as questions the assumptions, initial beliefs, and values that novice
teachers bring to the classroom experience. One goal of teacher education is to help
teachers transform tacit or unexamined beliefs about teaching, learning, and the
curriculum into objectively reasonable or evidentiary beliefs. As part of a
constructivist learning and teaching framework, these initial beliefs must be surfaced
and acknowledged during the preservice teacher education program if the program is
to make a difference in the deep structure of knowledge and beliefs held by preservice teachers (Richardson, 1996).

One of the first American educational theorists to view teachers as reflective practitioners was John Dewey. School, and schooling, he believed, should be more like life itself rather than a representation of it (1933). That is, the confrontation of dilemmas lies at the heart of Dewey’s analysis of thinking and learning. Reflective teaching begins when teachers experience a difficulty that cannot be readily resolved, what he terms a “puzzle of practice” (Dewey, 1933). As long as classroom activities glide smoothly, there is no call for learning and reflection. However, difficulty in achieving an objective stimulates learning. As preservice teachers experience and explore these dilemmas of practice, they are more likely to construct deeper understandings of the problems embedded in them, their possible causes, resolutions, and the constraints that must be factored into their decisions.

In his text, *How we think*, Dewey (1933) also asserts, “While we cannot learn or be taught how to think, we do have to learn how to think well, especially how to acquire the general habit of reflecting” (p. 35). Reflection involves a great deal of introspection, but it also requires some outside prompting and probing, especially in the early stages of teaching (Mewborn, 1999). Further, reflection is not a natural state of mind, nor is it easy to make reflective thinking a habit (Goodman, 1984; Harris, 1989). To this end, preservice teacher reflection will be operationally defined within this study as the use of verbal and written language in a cyclical process of reporting, reviewing, and rethinking within the field experiences of a teacher preparation.
program. This process, primarily driven through written form, involves an explication of preservice teachers producing informative, useful knowledge for future decisions and actions (Dewey, 1933; Hannary, 1994, Killion & Todnen, 1991; Shulman, 1987).

A developmental model for reflective development.

Incorporating active learning strategies and Dewey’s notions of reflective thinking into a preservice teacher preparation program, a team of researchers at a large, midwestern research university investigated the reflective writing of preservice secondary mathematics and science preservice teachers. In a grounded theory analysis of written responses to weekly, structured reflection topics, a conceptual model for the development of preservice teacher reflective thinking was developed (McKeny, Huziak, Schaefer, Jones, & Rice, 2005).

This model (see Figure 1) for the reflective development of secondary mathematics and science preservice teachers suggests a predominantly linear increase along a trajectory from unchallenged, initial beliefs to the development of reflective classroom practice. The momentum gained during each reflective cycle of reporting, reviewing, and rethinking fuels this linear increase, however, as this research team suggested, some regression between the latter two cycles may occur.

An explication of phases in the model.

The cyclic progression involves three distinct phases: reporting, reviewing, and rethinking. The reporting phase of a cycle involves the preservice teachers
making observations and statements about what is going on in the classrooms; this is mostly a retelling of events. A typical reporting statement would sound like

I administered a quiz this week to monitor my students’ knowledge about graphing. The students had to plot and label three points on a coordinate grid, state the quadrants of the points and answer three questions about a given bar graph.

Figure 1: A conceptual model for the development of preservice secondary mathematics and science teacher reflective thinking (McKeny, Huziak, Schaefer, Jones, & Rice, 2005).
The second phase, reviewing, involves some beginning analysis of the reporting, some recognition of a dissonance between their own dispositions and what is happening in their classroom. The following passage gives an example of a typical reviewing statement from a preservice teachers’ weekly reflection response.

We are encouraged to move away from doing lectures straight from a textbook, but rather incorporate activities that engage the students. So far, my mentor teacher has done just what we have been taught not to do. He lectures each day from the textbook and does not develop any lesson plans, let alone any that engage the students.

Within the final phase of a cycle, the rethinking phase, preservice teachers acknowledge the incongruencies between their beliefs and classroom events and begin to make adjustments to their contemporary thinking and actions to address the inconsistencies. They begin to expand their definition of teaching. The following excerpt from a reflection response illustrates a preservice teacher rethinking a set of directions given to a group of students.

Overall, I think some of the confusion [in today’s lesson] could have been prevented if I asked better questions to guide the students in this particular part of the activity. Although I am sure that some groups still would have been confused, once I spoke individually with the groups, they better understood what they were supposed to be measuring. I need to make sure that my
questions are clearer and think about what the students are hearing and reading.

*Progression through the Cycles.*

Preservice teachers enter their field experience component of their program during the early stages of coursework and bring with them unchallenged teacher beliefs and dispositions of teaching formed by sixteen years of experience as students in classrooms. The goal of the first cycle is to move preservice teachers from thinking like a student to thinking like a teacher. Preservice teachers exist in Cycle One as a result of their previous experiences as students, and their reactions and choices within the classroom are based on those experiences.

Preservice teachers move into Cycle Two when they first realize that teaching requires more and different considerations than being a student. During Cycle Two, it is hypothesized that preservice teachers view themselves as teachers and begin to develop a teacher’s mindset. During this cycle, they are teacher-centered in their choices and in reactions to classroom situations. The aim of Cycle Two is to move the preservice teachers to a more student-centered practice. Through more consistent interactions with students, the model suggests that the use of reflection can facilitate a shift in preservice teachers’ thinking to consider how their teaching impacts the students rather than being solely teacher-focused. They begin to understand that teaching is an interactive process in which students play an important role.

Once in Cycle Three, the preservice teachers still consider their students collectively, but are able to make modifications to their lessons based on a general
sense of students’ understanding. They may individually recognize a few students, but usually, only extreme students that create classroom management issues are noticed. Preservice teachers leave Cycle Three of the model when they begin to see students in their classroom as individuals. As they progress in their student-centered approaches, they begin to understand the individual needs of students and recognize the need to address these needs. Through the use of the process of reporting, reviewing, and rethinking, preservice teachers reflectively examine their actions against their belief system and are focused to confront inconsistencies between their actions and beliefs. Through this cyclical process, the model suggests that preservice teachers are able to transform their belief systems, and their acts of reflection become more thorough and deeply developed (Lee & Loughran, 2000).

As a way of making sense of daily classroom life and practice, a dialectical relationship evolves in which two levels of conversation are logically distinct though interrelated; on one level, the preservice teacher thinks about teaching while developing and creating the opportunity for a cognitive analysis of their practice – thinking about thinking about their teaching. In a broader sense, preservice teachers engage within a reflective discourse with themselves as they begin to analyze and formulate their beliefs of their practice. Once articulated and shared with the mentor teacher and university supervisor, a collective reflection of those ideas may begin (Cobb, Wood, & Yackel, 1993). What begins at the basic level of thought can escalate to higher-order thinking as the preservice teacher completes the iterative cycles of reporting, reviewing, and rethinking within the context of reshaping their
classroom practice. The discourse that reflective thinking creates illustrates the preservice teachers’ evolving construction of understanding and provokes their ability to go beyond the level of explanation to achieve the goal of a thinking teacher (Lin & Gorrell, 2001).

**Operational Definitions**

Throughout this study, the communal definition of terms such as reflection, reflective teaching, reflective discourse, problematization, and cognitive dissonance play a critical role. As a means of providing a clear context to the reader for how these ideas and concepts were interpreted and enacted in the processes of data collection, data analysis, and the creation of the separate cases, the following operational definitions are needed.

Each of the four participants, in conjunction with the university supervisor for three consecutive field experiences, was required to engage in the act of reflection. That is, as the preservice teachers progressed through their field experiences, they were required to use written and spoken language to articulate their developing teacher thinking and to explore their contemporary understanding of the knowledge, skills, and dispositions that are necessary for teaching and learning for understanding. At the beginning of this study, the impetus for these acts of reflection came from structured prompts provided by the program or through discussion groups focusing on current issues in education led by the university supervisor.
As the requirements of the program intensifies and as the secondary mathematics teachers gain more control and autonomy over individual classrooms through the progression of their teacher preparation program, the participants were given the opportunity to continue to follow structured reflection prompts or to use their own developing classroom practice as a source of questioning and exploration. Within the context of this study, reflective teaching incorporates the active use of reflection on the part of the participants in both oral and written forms as a way of coming to understand the complex task of teaching and coming to understand their efforts in the act of teaching.

At times, preservice teachers involved in the acts of reflection find themselves engaging in interpersonal and intrapersonal conversations about their developing ideas about teaching. The term reflective discourse will be operationally defined as the progressive, iterative, and at times, ongoing conversation that develops as a result of reflecting on teaching. This discourse may be external, as in the case of a shared writing or conversation within the preservice teacher support triad of university supervisor, mentor teacher, and preservice teacher. However, this discourse may also be internal as in the case of a preservice teacher engaged in a form of internal and iterative questioning and answering that has arisen out of the problematic issues within his or her developing classroom practice.

As noted in the literature surrounding the theoretical framework of this study, reflective habits of mind are difficult to establish within the daily classroom practice of preservice teachers. Consistent with the writings of Dewey, if the teacher
preparation program and concurrent field experiences flow smoothly, there is little
opportunity to effectively learn about the problematic and complex work of teaching.
To paraphrase, we experience personal and professional growth through the process
of making sense out of confusion. Thus, it is necessary for those entrusted with the
professional and personal development of preservice teachers to problematize the
teaching situations that comprise their field experiences. This problematization may
come from university faculty, university supervisors, mentor teachers, or from other
preservice teachers. This problematization may occur through the use of reflective
questioning before or after a planned lesson, through the use of delving feedback
offered to a reflective writing, through the use of teaching observation notes that
require rationales for choices made during the act of teaching, or from a collective
discussion of shared experiences.

Regardless of the source, the primary goal of the problematization is to
achieve a cognitive dissonance within the contemporary thinking of the preservice
teachers. Within the context of this study, cognitive dissonance is defined as the
juxtaposition of contrasting lines of thought as preservice teachers attempt to resolve
the questions and issues that arise out of their classroom practice. As preservice
teachers gain more classroom experience and are challenged to critically examine the
choices they make in the act of teaching, they are more apt to exchange their
unchallenged beliefs for more personal and contextualized ways of knowing about
teaching. Focusing on their developing belief system and current realities that may
not easily coexist, cognitive dissonance creates the frame from which personal and professional growth may occur.

“Reflective teachers are not perfect, but are simply and unabashedly committed to the education of their students and to their own education as teachers” (Dewey, 1933, p. 47). Teaching is an ever-changing intellectual and practical activity that is in ongoing and cumulative need of refinement, development, and growth. The approach of helping preservice teachers make sense of their own experience as a basis for teaching requires a different approach to teacher education that relies less on received knowledge than on knowledge in the making (Griffin, 1999; Ladson-Billings, 1999).
CHAPTER 2

LITERATURE REVIEW

As preservice teachers progress through their professional program, they face many challenges. Perhaps none is more critical than the challenge for preservice teachers to reflectively identify, recognize, and reshape their own beliefs about learning and effective teaching and to clarify, develop, reframe, redefine, and ultimately act on new ways of seeing (Beare, 1989) within the context of their developing classroom practice. Over the past two decades, the notion of reflection has returned to vogue amongst teacher educators as an essential skill for preservice teachers, and the skills necessary to acquire a reflective stance deemed essential as part of a teacher preparation program.

Regardless of its personal or shared format, the concepts of ‘reflection’ and ‘reflective discourse,’ are not new terms in the field of teacher education. While there has been support for the development of teachers to be reflective professionals (Richardson, 1990; Schon, 1983), there is little consensus as to what constitutes reflection and what teacher educators might do to foster its development (McLaughlin & Hanifin, 1994). Reflection has been described as a “difficult” (Wildman and Niles, 1987), “knotty” (Bullough, 1989), “slippery and chaotic” (Smyth, 1989), “fuzzy” (Tom, 1987), and “problematic” (Ross, 1989) concept to identify.
Yet, there is consistency in the projected outcomes of developing reflective habits of mind within preservice teachers. One of the most important benefits of reflection is the facilitation of change in preservice teachers’ awareness and ideas about teaching and learning (Pugalee, 1999). As a “specialized form of thinking” (Grimmet, 1988, p. 6), an “open, active communication channel between the social context and inner self creates an evaluative dialogue that enriches the self and enhances professional practice” (Butler, 1992, p. 223). From a critical perspective, reflection presents current knowledge as tentative and emergent as past understandings and beliefs are reconstructed in order to generate new meaning to the experience and used to transform practice (Freire, 1985).

Thus, an overarching theme of reflection being a catalyst for growth and change is evident. Within this study and in conjunction with this theme, reflection by preservice teachers has been operationally defined as an interactive process of reporting, reviewing and rethinking previously held beliefs and dispositions about teaching and learning as a means of developing personally useful and practical knowledge into action within the classroom. Reflection and reflective discourse, as evidenced in this study by the verbal and written exchanges between preservice teacher and university supervisor, can be viewed as an agent of change in personal development, professional growth, and creating supportive communities amongst teaching professionals.
Reflection as personal growth

While the traditional focus of teacher education programs has been to develop the content and pedagogical knowledge of preservice teachers, it has been more recently noted that the main goals of teacher preparation programs should also provide avenues for preservice teachers to understand the values, attitudes, and beliefs that they bring into their clinical practice, and then to plot and monitor their growth (Johnston, 1992). It can be difficult for teachers to undertake the task of rethinking their subject matter, but effective practicing teachers continue to learn and grow from their practice. Much is lost if the formal educational experience of preservice teachers is kept separate from their personal experience prior to and during their preparation program. The use of reflective journals can assist in creating a bridge between university course work, personal history, and current practice. Learning involves making connections and making oneself vulnerable and taking risks; however, this is not how teachers traditionally see their role (Bransford, Brown, & Cocking, 2000) within the predominant expert/novice structure of preservice teachers’ field experiences.

Each preservice teacher enters the clinical phase of their program having at least sixteen years of previous experience and personal histories with schools and school settings. It is suggested that early childhood experiences, early childhood teacher role models, and previous teaching experience are all crucial factors that lead to the formation of an image of the self as a teacher and what it means to be a teacher (O’Brien & Schillaci, 2002). As preservice teachers draw on this abundance of
previous experience and personal history through the use of reflective journals, they recreate the stories of their life. Since reflective thought arises out of cognitive confusion, reflective journals become a catalyst for attaining a more complex sense of self as well as developing a sense of community amongst the support team of preservice teacher, classroom mentor teacher, and university supervisor (Reiman & Theis-Sprinthall, 1998). Their memories act as a filter, made up of scraps of nothing, but when woven together within the frame of current classroom practice, they capture fragmented accounts of private and professional experience that collectively guide thoughts and actions. Thus, the use of reflective journals as a part of preservice teacher development establishes a transitive relationship between living a life story, telling a life story, and reshaping a life story (Clandinin & Connelly, 1994).

Pulling from their work as teacher educators, Knowles and Holt-Reynolds (1991) qualitatively analyzed the written reflective responses of preservice teachers enrolled in a pedagogy course at a large midwestern university. As part of the course requirements, the preservice teachers were asked to critically examine their personal experiences that had molded their educational thinking. They were able to use their own lives as reliable sources of data for generating beliefs about good teaching. While there were serious limitations in the abilities of preservice teachers to step beyond their prior experiences and personal history-based belief system in arguing for and selecting appropriate classroom practice, their reflective journals did reveal many of the causes and inhibitors in preservice teachers’ past and contemporary experiences and in their thinking about future practices. The researchers found
evidence that the reflection experienced through the use of journals became a window into their initial perspectives about themselves, their needs, and their responses to the processes of becoming a teacher.

Thus, reflective journal writing becomes a form of personal reflective research (Poirier, 1992) through which the preservice teacher gains understanding of the complexity of classroom learning which links personal, social, situational, and political influences. Based on critical examination of the past experiences, the preservice teachers use their individual experience to construct their virtual world in which the process of reflection works as a form of mental role play (Knowles & Holt-Reynolds, 1991).

Another personal application for the use of reflective journals is when preservice teachers draw on the stories of their own life in the creation of autobiographies, images, and metaphors. Such opportunities for reflection may encourage preservice teachers to focus on aspects of his or her life that may have otherwise escaped his or her notice. This was the case in a qualitative study by Johnston (1992) involving ten first-year and fifteen third-year students enrolled in a three-year primary teacher preparation program in Australia. Through personal interviews, a series of reflective writings, and group discussion amongst the participants, personal images and metaphors of teaching were identified using a collaborative approach in which the researcher and participants searched to uncover the subconscious assumptions which guided the preservice teachers’ beliefs and actions about teaching. In the formation of their images and metaphors, the two
preservice teachers highlighted in the study showed evidence of a clarification in their own beliefs, which was attributed to their focused writing and discussion. While the theoretical knowledge was received through traditional content courses of the program, the personalized images provided a more useable language of practice and created a doorway to dialogue about respective images of teaching with their mentor teacher and university supervisor.

While they may require a large amount of scaffolding to initiate the formulation of their images and metaphors about their beliefs, articulating biases, weaknesses, and fears, preservice teachers can visualize the teacher they want to be and develop a plan of action to make it so. By reflecting and theorizing through metaphors, preservice teachers develop an understanding of the dynamic relationships between personal and social influences that occur within the classroom. Their images also serve as productive vehicles for practice and professional development. Acting as a mirror of the mind, the written images they create form a conscious explication of their current teacher thinking. As they become more increasingly self-aware, they internalize their classroom experiences through the process of making them known to others. Having the opportunity to articulate a framework around a current system of beliefs, the preservice teachers extended past the limits of their current ability to articulate new understandings (Johnson, 2001). The process of reflection permits and encourages a cognitive awareness of the self in the world as it reconstructs the past, and it lays bare the relation between self and work and self and others (O’Brien & Schillaci, 2002).
Reflection as professional growth

While the use of reflective journals is one method of promoting personal connection and growth within the preservice practitioner, reflection can also create opportunities for preservice teachers to formulate their initial professional beliefs about teaching and learning. Preservice teachers begin their clinical practice with beliefs of what teaching is based on their previous experience and belief system, but creating opportunities for reflection on teaching and learning as a connected system negate the concepts that these actions occur in isolation. That is, preservice teachers develop an understanding of the active interplay between teaching and learning as a dynamic relationship that changes with students and contexts. In highlighting this interrelatedness, preservice teachers are able to draw implications for their future role as teachers (Hoban, 2000).

Preservice teachers often carry into their first classroom initial, predominantly behaviorist beliefs about teaching that make it difficult for them to understand ideas different from their own (Lin & Gorrell, 2001). They fall into a common trap of thinking that their students have thought processes and learning styles similar to their own. It has been noted that preservice teachers tend to have traditional views of instruction, create a teacher-centered learning atmosphere in their classrooms, cling to a belief that students learn best by receiving information, and do not monitor their students’ understanding (Artzt & Armour-Thomas, 1999). This unreflective, teacher-
directed style can serve as a mask for teachers who do not possess a full knowledge of content, students, and/or pedagogy.

When preservice teachers are encouraged to engage in thoughtful reflective discourse focused on teaching and learning, written journals provide extensive evidence of preservice teachers using processes of reporting, reviewing, refocusing, and reconceptualizing to think about their own learning. Maloney and Campbell-Evans (2002) investigated the written reflective journals of four final-year students enrolled in a school-based teacher preparation program in Western Australia. For the participants, the journals served as a medium for recording and reflecting on their school experiences, but more importantly, they served as a safe place for the preservice teachers to raise issues, express emotions, and voice doubts about developing their own teaching skill. The journals together with the delving and feedback from their university supervisor served as a tool for analysis. That is, the act of reflecting on classroom practice reinforced the dynamic relationship of teaching and learning within the mind of the preservice teachers. Even though the preservice teachers are filling an unfamiliar role within the confines of the classroom, it is a critical step in their professional development to become comfortable with the role of the teacher as a learner. Further, their acts of reflection on classroom practice led the preservice teachers to the role of self-searcher and questioner. Once the preservice teacher begins to ask questions of his or her own practice, they begin to own their professional growth and development. Perceptions of effective teaching changed as the preservice teachers progressed through their experience.
Preservice teachers progress through a complex development from teacher-centered environments to pupil-centered, from a personal view of relationships to a professional view, and from a controlling perspective to a holistic view of classroom management (Wilson & Cameron, 1996). As preservice teachers develop beyond the initial stages of professional development, they involve students as active problem-solvers and problem-posers within their classroom practice; rich verbal exchanges are encouraged among members of the learning community; there is an extensive monitoring of students’ learning and understanding, and preservice teachers are able to effectively articulate their rationale for lesson objectives and pedagogies during post-lesson interviews (Artzt & Armour-Thomas, 1999).

By constructing their own understanding of their practice and their students, previously held behaviorist perspectives about teaching and learning yield to constructivist models of active learning. Although experience plays an important role in preservice teachers’ development, it is possible for a beginning teacher to think and teach in ways where students are the center of instruction. At the beginning, preservice teachers use textbook definitions of teaching and learning, but systematic reflection can serve as a powerful facilitator for teacher improvement. Over time, their reflections express a dynamic conception of teaching and learning that is based in a thorough exploration of their own ideas (Talvitie, Peltokallio, & Mannisto, 2000). While the enterprise of teaching is very problematic, cultivating, through reflection, an understanding of how classroom practice evolves and reshapes itself leads to the development of a reflective teacher who is, “less likely to be a slave to unexamined
assumptions and more open to change based on daily experiences” (Posner, 1996, p.79).

Reflection as community growth

When preservice teachers make clear on paper the meanings they ascribe to materials being learned, theories being understood, and skills being practiced, they reveal not only the extent of their own learning, but also provide the foundation for the kind of discourse with university supervisors, mentor teachers, and other emerging professionals which allows all participants to be face to face with each other. This written record serves as a testament to their classroom experience, but their entries are not self-contained. Journals develop a conversation between the novice and supporting team in a search for truth and understanding. Their reflective language is transparent, and therefore, acts as a gateway to interior selves (Johnson, 2001). When speaking through the use of journals, supervisors and mentor teachers can listen and respond in ways that bring a critical, yet supportive, dimension to reflecting on teaching. Collaborative discussions become most valuable when two or more teachers become involved in the act of sense-making and understanding. These reflective journals become a shared cultural context upon which mediation and scaffolding are key strategies for the development of a learning community. Together, the triad enhances teacher learning by developing dynamic communities of practice.

Through the course or preservice teacher development, their reflective writing becomes more open, more thoughtful, and more inviting to suggestions from others
within the teacher preparation program. Reflective journals evolve into a source of interaction in which mentor teachers can contribute to the conversation. Accessing preservice teachers’ journals gives classroom teachers a better picture of what works in terms of cultivating a supportive environment for the new teacher. Heated exchanges can occur when the opinions of the mentor teacher clash against the experiences and formulating opinions of the preservice teacher, but the role of the mentor is not to provide a list of safe topics and strategies for use in the classroom, but to provide a variety of perspectives from which they may both grow as a result of the examination of their own practice. By engaging in this discussion, “teachers take [on] an active responsibility for raising various questions about what they teach, how they are to teach, and what the larger goals are for which they are striving. They must take a responsible role in shaping the purposes and conditions of schooling” (Giroux, 1988). Thus, reflective journals serve as a point of departure for active discussion as mentor teachers and preservice teachers talk with each other about the meaning of their experiences and the development of pedagogical thinking.

University supervisors also contribute to the development of this reflective learning community by bringing their expertise to bear on the evolving dispositions of the preservice teacher in helping to overcome the most difficult stages of uncertainty. Supervisors should make the reflective experience an arena where preservice teachers can research and discuss teacher effectiveness as a problematic construct. The main tools that fuel this interaction are extended questioning of their reflection and offering feedback (Reiman & Theis-Sprinthal, 1998). Extended questioning serves as a
stimulus to help preservice teachers make connections between theory and practice. Delving techniques encourage preservice teachers to organize and clarify their thinking, review their practice, and refocus their attentions and actions. Through extending the conversation, richer experiences can be created in which preservice teachers see their experience differently and are able to formulate new perspectives.

Personalized feedback resulting from university supervisors interacting with the reflective journals is what matters most to preservice teachers (Spalding & Wilson, 2002). It is the personal comments that gradually move the responder to deeper reflection. How supervisors talk to preservice teachers, what they notice about classroom practices, and what is selected as topics for further exploration becomes a shared experience. In presenting alternatives for action, supervisors become, in a sense, coaches providing direction without directly giving answers. The preservice teachers have opportunities to ask questions related to their particular situations or gain the satisfaction of sharing with others. However, the impact of written feedback provided by the university supervisor is significant in its contribution to preservice teacher growth (Bain, Ballentine, Packer, & Mills, 1999).

Impediments to Reflective Growth

The implementation of reflective journals within a preservice teacher preparation program may seem to be a panacea, but a large proportion of preservice teachers do not become more reflective as they move through their field experiences. It is overly simplistic to attribute this to idiosyncrasies within a particular program or
cohort (Sumson, 2000). Additionally, a preservice teacher may be able to produce a convincing sample of reflective writing without experiencing any reflection. Preservice teachers’ aversion to become more reflective may be closely related to their individual lack of commitment to reflection, or to teaching in general. Further resistance to reflection may be traced to an epistemological stance in favor of received learning or an erroneous perception of the extent to which their learning environment supported their personal and professional development.

To actively promote the use of reflection and reflective writing, university faculty and supervisors should address the resistance to reflection. This may be accomplished by focusing on the individual in eliciting personal histories, hopes, and expectations as a means of understanding. Supplying preservice teachers with questions and prompts is not a guarantee that they will question their assumptions and practices in greater depths, but in focusing on the personal, the connections between implicit ideas and explicit actions become clearer. The tendency of preservice teachers to hold conformist, unproblematized views of teaching can be countered by focusing on making public our own reflective practices which are manifested in our teaching.

As teacher educators, our foremost concern should be that of exploring the evolving practical knowledge of the preservice teachers we are charged to develop so that we can build programs that help them understand, articulate, and utilize practical knowledge as much more than an accumulation of propositional facts and isolated strategies. “There is a special form of knowledge that professionals have and use, and
this knowledge resides in practice. It is constituted and held differently. It is contextually dependent, arising out of particular puzzles and uncertainties that professionals are required to manage” (Munby & Russell, 1989, p.76). Such is the case in encouraging preservice teachers to become transformative intellectuals. Through reflection, “we dignify the human capacity for integrating thinking and practice and in doing so highlight the core of what it means to view teachers as reflective practitioners” (Giroux, 1988, p. 127).

*Reflection impacts beliefs*

The creation of a reflective and efficacious teacher identity cannot be formulated without an articulation of a preservice teacher’s initial beliefs about teaching and learning and a reflective and critical examination of those ideals in light of their current understandings. The predominantly unchallenged assumptions and predispositions that preservice teachers carry into their mentor teachers’ classroom shape the interpretations that they place around their reality. Yet, in placing the examination of their initial beliefs in more useable verbal or auditory forms, their personal and professional reflection becomes a public text (Francis & Ingram-Starrs, 2005) from which the preservice teachers come to better understand their teaching self.

As preservice teachers are at first led through the processes involved in identifying issues within their own practice, examining possible solutions, and testing their own conjectures, the insights gained become tools in placing a critical
examination to their initial understandings of teaching and learning (Carter, 1998). While learning through their reflective work is hard work that requires personal honesty, initial beliefs can yield to more dynamic interpretations of teaching and learning once placed within authentic learning environments. Preservice teachers come to reflectively understand their own teaching through situational analysis, theorizing, hypothesis testing, inquiry, experimenting, and justifying (Fung, 2005). In a sense, their own learning becomes a direct reflection of their students’ cognitive mathematical processes within classroom situations that support learning for understanding. With the establishment of reflective habits of mind within their preservice preparation program, the potential for further growth and the creation of more sophisticated teacher beliefs within the induction years of classroom practice can be moved closer to reality (Martin, 2005).

In short, teacher educators aim to evoke change. Reflective discourse in verbal and written forms becomes a forum in which we engage preservice teachers in an interactive dialogue with themselves and with others. Reflective writing forms a support system for personal enrichment, professional development, and the establishment of a supportive community. A main goal of teacher education programs should be to produce graduates who have not only a deep knowledge of content and pedagogy, but who also have a deep understanding of teaching and learning and can use these insights in their future classroom practices. If we are committed to the notion of reflection as a foundation of professional practice, we cannot afford to be
complacent about the effectiveness of our attempts to facilitate the reflective experience of preservice teachers.
CHAPTER 3

RESEARCH METHODOLOGY

Structure of Method

Grimmet, MacKinnon, Erikson, and Riecken (1990) characterize teaching as the “interaction of complex human beings capable of creating an inordinate number of ways of characterizing phenomena experienced within a diverse social and linguistic culture” (p.20). This description of the complex nature of teaching fits with Lincoln and Guba’s (1985) naturalistic paradigm. A case-study approach is praised for its design to “understand and interpret the observation of educational phenomenon” (Merriam, 1988, p. 2). As an educational researcher, I needed to understand and to make visible the actions, perceptions, and initial beliefs of preservice teachers. As we progressed through our shared experiences, I found myself attempting to find opportunities that would allow me to “unfold and reveal the reality of the lived experience as seen by the preservice teachers themselves” (Stark, 1991, p. 295).
Using Qualitative Research

Qualitative research allows a paradigm through which “focused discovery, insight, and understanding of those being studied offer the greatest promise of extending the current knowledge base and practice of education” (Merriam, 1988, p. 3). The goals of this research project involved tracing the reflective development of preservice teachers as they progressed through three field experiences and identifying the critical features of field experiences that encouraged the development of reflective habits of mind. This created many challenges that numbers, t-tests, confidence levels, and other quantitative measures could not explain.

In the process of creating these cases, presenting the stories of the participants, and subsequently, learning about myself through the process of this project, I knew that my research must be naturalistic and flexible. Further, I knew that my design must also be emergent allowing the voices and developing contemporary thought of the preservice teachers to guide me, as their university supervisor and educational researcher, in a direction that supports their professional and reflective development. As in qualitative studies, “Research designs sometimes must be modified, combined, and even created in order to address the research questions being studied” (Eisenhart & Borko, 1993, p. 97).

Given the focus of the previously presented preservice teacher development model as a beginning point for the processes of data collection, data analysis, and data interpretation, and my research questions, I spent many hours in personal contact with the preservice teachers I supervised providing feedback, questioning their thoughts
and actions, and encouraging their own, independent teaching actions. I feel that these research questions may be best answered through observation, unstructured and structured interviews with preservice teachers, collection of artifacts from their classrooms and teaching portfolios, critical analysis of their reflective writing, and the construction of case studies. This study is dominated by qualitative method.

Research Questions

As this project matured, and indeed as my perspective as an educational researcher matured through the processes of learning by doing, the primary foci of this study shifted from the cycles and phases of the developmental model to the examination of the critical aspects of field experiences that lead preservice teachers to a more mature and integrated view of teaching and learning while also attempting to identify the critical features of their field experiences that foster reflective growth as the preservice teachers progress through three field experiences that comprised the practical aspect of the secondary mathematics preservice teacher preparation program. Through the iterative process of writing and reflecting, through framing and reframing, and indeed, through the deepest levels of teaching and learning, My research questions evolved to these current forms. The research questions I investigate in the following chapters are

- What are the critical features of the field experiences for secondary mathematics preservice teachers that most significantly contribute to
the development of reflective habits of mind that support a more mature and integrated view of the work of teaching?

• What are the critical features within the field experiences of secondary mathematics preservice teachers that encourage a deeper, reflective examination of their developing classroom practice?

• To what extent does the proposed model of preservice teacher development trace the reflective growth over the course of their field experiences?

Within this chapter, I have presented the context of the secondary mathematics preservice teacher preparation program and the participants involved in this research project. I also present personal background that has shaped my inescapable subjectivity in working with preservice teachers. Following this explication, a further discussion follows that presents the research project timeline, the data sources used, the procedures for data collection, the series of attempts at data analysis, and the measures taken to assure the validity and trustworthiness of each preservice teachers’ tale.

The Context Surrounding the Research Project

Overview of the Preservice Teacher Preparation Program

The secondary mathematics teacher preparation program of this large midwestern university followed a one-year, master’s degree model. Preservice teachers entered the program holding bachelor’s degrees in their content area and
complete an intense, one calendar year program of master’s level coursework, three separate field experiences, and an action research project of their own choosing. More than forty preservice teachers spent their first Summer Quarter within a larger cohort of mathematics, science, and technology education students. Their introductory coursework focused on integrated teaching methods, the psychology of human development, understanding and applying the cognitive processes in mathematics and science, principles of reform-based education, and an introduction to quantitative and qualitative research methods. Preservice teachers attended classes at the university concurrent with their Autumn Quarter and Winter Quarter field experiences, but in Spring Quarter, the preservice teachers were focused on their final field experience, more familiarly known as student teaching.

During the Autumn, Winter, and Spring Quarters of the academic year, preservice teachers completed three field experiences; each of these were designed at the program level to provide progressively more exposure and responsibilities in the work of teaching. Placements were assigned to each preservice teacher by the Field Placement Coordinator for the education unit. For each field experience, the Program Manager for each teacher preparation program within the college works closely with the Field Placement Coordinator to find the proper number and location of field placements. Each preservice teacher is required to have alternating field experiences within urban and suburban settings with secondary and middle school student populations over the course of the academic year.
During the Autumn Quarter experience, preservice teachers must plan, teach, and actively reflect on five to ten separate lessons over the course of the ten-week field placement. A large portion of their time during this first field experience is spent observing the classroom practice of their assigned mentor teacher and other highly qualified teachers within the placement site and observing in alternative learning environments. The alternative settings could include, but were not limited to the regional school for the deaf, the state school for the blind, or a residential school for emotionally troubled teens.

During the Winter and Spring Quarters, however, the preservice teachers stepped into a more functional role as a classroom teacher for a minimum of six weeks. In Winter, preservice teachers assumed this role for one class period, but in Spring Quarter, the preservice teachers assumed their mentor’s entire teaching load plus any additional obligations specified within the mentor’s contract with the school district. Such additional responsibilities included working in a school attendance office and monitoring student study hall. As classroom teachers, the four preservice teachers in the study were required to design and construct teaching units and daily lesson plans, to create meaningful learning experiences for the students, to monitor students’ understanding throughout the lessons they delivered, and to create traditional and alternative assessment instruments to evaluate students’ progress toward learning goals.

Across each of the field placements, the preservice teachers were also expected to create and maintain a teaching notebook that eventually became their
personal teaching portfolio. As a means of engaging the developing teacher thinking of the preservice teachers, each member of the cohort was required to generate weekly written reflections based on their classroom experiences. These field experiences were intended by the program to provide more exposure to the actual work of teaching, to create an educational crucible in which the preservice teachers would test and discern the components of their developing teaching style, and to provide additional opportunities for professional growth.

The Role of the University Supervisor

For four years, I worked for the education unit as a university supervisor specializing in secondary mathematics. In past academic years, I was assigned three or four preservice teachers from the cohort to support and advise during each ten-week quarter. Through consistent communication and contact with them, and by forming a sense of community with them and their mentor teachers, I worked to establish goals and expectations that encourage the development of the preservice teachers as they progressively accepted more classroom responsibility. In what we came to view as a collective and shared reflection on practice, I worked to challenge and push their thinking about teaching and learning in new directions. The preservice teachers were required to electronically submit their unit and daily lesson plans as well as their written responses to weekly structured reflection prompts to the university supervisor for comments and feedback. It was through this naturalistic process of reading and responding that I was able to problematize the preservice
teachers’ contemporary thinking about teaching and their developing teacher mindsets. During the Winter and Spring Quarter, the preservice teachers were explicitly given the option by the Program Managers to respond to structured prompts or to select topics of their own interest or classroom practice as fodder for their weekly written reflections.

In the challenging and complicated work of preservice teacher development, it is incumbent upon the university supervisor to provide resources, to offer feedback and suggestions to their written work pertaining to the field experience, to observe and critique a minimum of five of their lessons across each quarter, and to structure a weekly small group discussion between the preservice teachers. These weekly discussion forums focused on the problems evident in their classroom teaching episode as well as topics that arose from their questions, coursework, and suggestions. From this leadership perspective, I was able to offer questions and opportunities for reflective thinking and action. In responding to their weekly written reflections and through our personal interaction before, during and after each scheduled observation, I was able to problematize their experience, to support, and at times challenge their work. It was from my frustrating initial attempts to track their reflective development through the proposed model and from my attempts to explain their successes and hindrances of their developing teacherhood that I began to focus on the commonalities and discrepancies each preservice teacher encountered within their separate field experiences.
Research Timeline

This research project with the participants spanned an entire academic year from the beginning of Summer Quarter 2005 until the end of Summer Quarter 2006, and in the process of writing, reflecting, and revising, the final document and dissertation defense was delayed until Autumn Quarter 2006. Within this timeframe, the majority of my time was spent collecting data, organizing data, and supporting and challenging the work of my participants. To provide clarity for the reader and to offer a sense of what data sources were collected and when these sources were analyzed and drafted into four separate cases, an entire research project timeline is provided in Table 3.1.

Participants

Researcher As Participant

Within the process of qualitative research, and further within the naturalistic and interpretive paradigm within the study, decisions concerning any instruments are related to the purpose of the study and the structure of the design. For any qualitative purpose, the researcher, or human instrument, cannot be separated from the investigative work in which he or she has been engaged. Regardless of the imperfections of social science research and the inherent bias of researcher subjectivity, human adaptability has made the human instrument the best match for the research requirements of the interpretive
# Research Project Timeline

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<tr>
<td>• Co-teach first middle childhood mathematics methods course</td>
<td>• Consent forms signed and secured</td>
<td>• Collect weekly reflective writing from participants</td>
<td>• Collect and provide feedback weekly reflective writing from participants</td>
<td>• Continue development of case studies and cross-case analysis</td>
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<td>• IRB submission and approval</td>
<td>• Initial interviews and meetings with participants</td>
<td>• Collect and provide feedback for weekly reflective writing from participants</td>
<td>• Collect and provide feedback weekly reflective writing from participants</td>
<td>• Revision of cases</td>
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<tr>
<td>• Initial Writing Sample obtained from preservice teachers</td>
<td>• Pre-study interview and questionnaire with participants</td>
<td>• Small weekly discussion groups with participants and other preservice teachers</td>
<td>• Small weekly discussion groups with participants</td>
<td>• Initial draft of dissertation to advisor</td>
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<tr>
<td>• Purposeful participant selection</td>
<td>• Collect and provide feedback for weekly reflective writing from participants</td>
<td>• Weekly observations of preservice teacher lessons</td>
<td>• Weekly observations of preservice teacher lessons</td>
<td>• Final member check with participants</td>
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<td>• Research proposal accepted by advisory committee</td>
<td>• Small weekly discussion groups with participants and other preservice teachers</td>
<td>• Generate field notes</td>
<td>• Conduct Pre- and Post-observation interviews</td>
<td>• Draft and Revise conclusions and implications chapter</td>
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<td>• Observe and critique five to ten lessons by each preservice teacher</td>
<td>• Collect and provide feedback to lesson plans</td>
<td>• Peer review of narrative vignettes</td>
<td>• Revision of cases including university supervisor text and analysis</td>
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<td>• Generate Observation fieldnotes</td>
<td>• Conduct Pre- and Post-observation interviews</td>
<td>• Member check with participants</td>
<td>• Defendable Draft approved by adviser</td>
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<td>• Collect and provide feedback to lesson plans</td>
<td>• Peer confirmation of coding</td>
<td>• Continued analysis of data</td>
<td>• Schedule Oral Defense for Autumn Quarter 2007</td>
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<td>• Begin preliminary coding and analysis of reflective writing</td>
<td>• Member check with participants</td>
<td>• Continued attempts at drafting data chapters</td>
<td>• Coding of pre and post observation discussions with preservice teachers</td>
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<td>• Transcribe discussion group and interview audiotapes</td>
<td>• Transcribe discussion group and interview audiotapes</td>
<td>• Initial attempts at drafting data presentation chapters</td>
<td>• Post-study focus group with participants</td>
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<td>• Bimonthly meetings with participants</td>
<td>• Transcribe Pre- and Post-observation interview audiotapes</td>
<td>• Continued analysis of data</td>
<td>• Bimonthly meetings with participants</td>
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Table 3.1. Timeline for Research Project
paradigm (Lincoln & Guba, 1985). “Because the researcher is the instrument in qualitative research, a qualitative report must include information about the researcher” (Patton, 1990, p. 472).

My history in education.

My educational background includes an undergraduate degree in education with a specialization in secondary mathematics and language arts for middle school grades. I have taught all levels of secondary mathematics and language arts for grades seven and nine. These subjects were part of my contracted teaching load while I was employed for six years with a private, combined middle school and high school in my native Appalachia. While working on a master’s degree in secondary education, I was employed as an instructor of developmental mathematics in a community college. I am currently a doctoral candidate in secondary mathematics education at a large midwestern university.

In the first two years of my doctoral program, I taught undergraduate courses in developmental mathematics and developmental algebra. In the final two years, I have taught conceptually-based mathematics content courses for future elementary teachers through the department of mathematics. I also serve as a university supervisor of secondary mathematics preservice teachers overseeing the development of three to four preservice teachers per quarter. I have served in these multiple roles as a graduate teaching assistant for four years while also accepting work in the last year of my doctoral program as a facilitator of elementary mathematics coaches.
My history in supervision.

As a university supervisor, I support the development of secondary mathematics preservice teachers in the following ways. I commented and offered developmental suggestions for improvement on the preservice teachers’ written drafts of lesson and unit plans, observed and critiqued lessons in-action at a minimum of one per week for each preservice teacher during each field experience as scheduling allowed. I responded and commented electronically to the weekly, written structured and unstructured reflections of the four preservice teacher participants, and facilitated weekly discussions in small group meetings with my assigned preservice teachers.

In the final week of each field experience, I served as a liaison between the university and cooperating mentor teachers by facilitating a three-way conference for the preservice teacher support triad of preservice teacher, mentor teacher, and university supervisor. To provide the most supportive and formative assessment of the preservice teachers’ performance, a twenty-three-item competency rubric was used to evaluate the progress of the preservice teacher. The items assessed on the rubric reflect a fusion of program goals, candidate proficiencies for the education unit as outlined within its conceptual framework, national and state standards of specialized professional associations, recently-revised standards from the National Council for the Accreditation of Teacher Education (NCATE), and Praxis III expectations. As an ongoing research project that gave practical experience to my doctoral training in educational research, I served as part of a six-person research team that developed the assessment rubric as well as the comprehensive system of
goal-setting, reflective writing, and the aforementioned assessment instrument. The efforts of the research team focused on the evaluation of the assessment instrument in terms of program development and have focused on the three-tiered process of goal setting, weekly reflection, and reflective assessment as a systematic way for the program to develop more reflective practitioners (Huziak, Schaefer, McKeny, Jones, Rice, & Hohenshell, 2005).

*Researcher Subjectivity*

Being both educational researcher for this study and university supervisor for the preservice teacher participants created a unique perspective that was supportive of their professional development, and at times difficult, if not impossible to separate. Forging a year-long working relationship with the preservice teacher participants did allow my perspective to become emic in that I had prolonged and unlimited access to their reflective writing, lesson and unit plans, and had direct conversations with them about the work of teaching. Through this dual role, it was imperative that I be aware of my inescapable subjectivity (Peshkin, 1988) in sharing my contemporary thinking about teacher preparation programs, my views on contemporary American schools, and the supportive words I shared about student-centered and problem-based mathematics education within dynamic learning communities.

Personally, I hold a deep commitment to cultural and constructivist ideologies regarding the symbiotic practices of teaching and learning. For me, reality is made, not found. To this end, teachers and learners within all school settings must develop
reflective habits of mind through active engagement in dynamic activities organized around key concepts within a cultural context. For, I believe, it is from this personal and iterative construction of personal knowledge that we, as teachers, evolve into professionals with a well-founded understanding of our students and the conceptual underpinnings of our content.

Looking to schools in terms of hope and possibility for change, we must exchange the lens of cultural and educational hegemony for one more personally relevant to the needs of student learning. Since culture and community “Structure[s] our behavior, thoughts, perceptions, values, goals, morals, and cognitive processes, usually without conscious thought” (Cohen, 1998, p. 13), our mind, thoughts, and ways of knowing are inherently and intrinsically linked to them. Whereas more traditional schools of thought may personify schools as being extensions of our culture, the socioculturalist view of student learning, as Bruner (1996) asserts, depicts education, “not as an island, but part of the continent of culture” (p. 11).

With no single and true way of knowing the world, my socioculturalist paradigm focuses on how members of a community create and transform meaning. While the larger task of the socioculturalist is to examine how values, exchanges, rights, and obligations are created and sustained within a culture, the more discrete and educational implications involve how individuals construct their own reality within the taken-as-shared symbolic system being used. Thus, thinking and learning, which are both the process and product of reflection, are collectively held as active constructions against the backdrop of current cultural practice.
Prompting secondary mathematics teachers to adopt a reflective and socioculturalist view of education requires a paradigm shift aimed at focusing on student learning and teaching for understanding. Learning does not always take the forms of regimented schooling processes as evidenced by the transmission of cultural norms from parent to child. This requires the current assumption that non-white, non-middle class cultures are inherently defective or lacking (Ladson-Billings, 1999) be reshaped such that the classrooms of individual students are transformed into communities of learners from diverse backgrounds who are all constantly engaged in the process of meaning-making.

Leading preservice teachers to acknowledge that students enter schools not as blank slates but as “full baskets coming into a different environment with something special to share” (Lake, 1990, p. 50), reverses the subtractive process of traditional, algorithm-driven pedagogies within mathematics education that may strip the value learners place on their parent culture (Fordham & Ogbu, 1986). With a greater degree of congruence and compatibility between the home culture and school culture, tension between the two is minimized, and learning, for both the teacher and student, becomes a more fluid activity. Broadening our collective understanding of teaching and learning as being reflective and personally constructed within the transmission and acquisition of mathematics as a cultural activity, sense-making becomes a more adaptive process at the intersection of school, home, community, and workplace (Gibson, 1982). This shift in philosophical stance leaves behind the notion of effective mathematics teaching in schools being teacher-centered and opens up the
possibilities of student-centered, empowering, and reflective views of mathematics education.

As I prepare preservice teachers to increase the mathematical learning of their students within technologically-rich, secondary and middle school environments, it is necessary to bring engaging classroom activity to life. To this end, the preservice teachers I supervise must become comfortable with classroom processes that purposefully elicit and make explicit students’ pre-existing knowledge in the pursuit of understanding. As Dewey (1938) asserts, school should be less like a representation of life, and more like life itself. Teaching to enhance student learning, through a sociocultural philosophy, encourages the formulation, deconstruction, and reformulation of personally relevant knowledge through the social processes of cooperation and argumentation. In becoming more active participants, even to the point of adopting the role of the teacher as a co-constructor of mathematics understanding, preservice teachers are more able to develop skills of inquiry, take control of their learning goals, and monitor their progress through formative and summative assessments. Within a constructivist framework, the classrooms which follow this model of education complement the well-developed research base of how students best learn and complement the acknowledgement of individual and classroom culture operationally defined by the tenets of interaction, externalization, perspective, and reflection.
Preservice Teachers

The potential participants for this study included the secondary mathematics preservice teachers within the Mathematics, Science, and Technology Education cohort for the Summer 2005 to Summer 2006 academic year. The entire program cohort consisted of forty-two master’s level candidates; twenty-eight of these candidates were seeking licensure in Adolescent to Young Adult mathematics. To more completely examine the reflective development as they progressed through the field experiences and to address the research questions that shaped the inquiry, a smaller subgroup of four preservice teachers from the larger group was purposefully selected based on their written responses to an in-class essay given during the first day of their secondary mathematics methods course during Summer Quarter 2005. During the first twenty-five to thirty minutes of their first mathematics methods course within the program, each secondary mathematics preservice teacher was asked to project what their mathematics classroom will look like and what methods they plan to use to teach their students. This glimpse of their contemporary thinking about mathematics education was a traditional first day assignment used by the methods course instructor and the writing provided a base line of data against which I could frame their individual reflective growth over the course of the program.

Keeping in mind the idea of purposive sampling, which “is based on the assumption that one wants to discover, understand, and gain insight; therefore, one wants to select a sample from which one can learn the most” (Merriam, 1988, p. 48), four of the preservice teachers who were the most descriptive and articulate in their
writing were selected. As a secondary criterion for participant selection, a mix of preservice teachers who project a disposition for both traditional and reform-based teaching styles was obtained. Further details of this data source may be found in the data sources section of this chapter.

Since all participants were of legal age, no specific issues regarding consent were existent. During the first days in Week One of their Autumn Quarter field experience, I met with each potential participant, shared the goals and research questions of the project, and answered questions from the potential participants before gaining their consent to participate. I met with the participants as a group weekly during each field experience and individually each week at their placement schools before and after each scheduled teaching observation. For the first two quarters of field experience within the program, and in order to secure their cooperation and honest sharing of insider knowledge, rapport, “a distance-reducing, anxiety-quieting, trust-building mechanism that primarily serves the interest of the researcher” (Glesne & Peshkin, 1992, p. 94), was established by participating as a Graduate Teaching Associate within their Summer Quarter mathematics methods course. The experience of co-instructing this important methods course at the onset of their preservice teacher training established my role as an education professional and as an advocate for preservice teacher development within the cohort as I led open-ended mathematics investigations and led class discussions of their developing understanding of reform-based mathematics instruction.
In exchange for their honest engagement and participation in the study, the four preservice teachers each received a fifty-dollar gift certificate to a local education specialty store, a classroom teacher timer, and a book, *The First Days of School* by Dr. Harry Wong. The participants had the freedom to use this money for personal resources or for supplies to use in their classroom as a first-year teacher. The book was selected at the recommendation of the participants; all four lamented the missed opportunity of not seeing teachers form classroom communities from the first days of the public school year. Due to the misalignment of the beginning date for public schools and the university calendar, the preservice teachers’ placements were not secured and shared with the participants until one month after public school had begun.

*Mentor Teachers and Research Sites*

The research questions involved in this study required that my participants interact with adolescent and young adult learners and engage with inservice teaching professionals within natural and authentic environments in the form of secondary and middle school mathematics classrooms. However, the assignment of field placements was regulated to the Office of the Field Placement Coordinator within the School of Teaching and Learning by the Department Chair. The Program Managers within the Math, Science, and Technology Education Department worked closely with the Field Placement Coordinator in the college to secure field placements and mentors that allowed the preservice teachers to see the ideals and philosophies of the program in
action. The logistics of finding highly-qualified mentor teachers for hundreds of placements across all content areas and levels of school is a daunting task for any office. Thus, some mentor teachers’ classroom practice did not closely match the guiding philosophy of the program. However, every attempt was made to ensure that each preservice teacher had a field experience within an urban and suburban environment. Preservice teachers were also required to have a field experience with middle school and secondary student populations. Field sites were selected based on the placement needs of the cohort, the level of agreement with the school and university schedules, and proximity to the preservice teachers’ campus residences.

Mentor teachers used for the placements in this study were currently practicing educators within neighboring districts and school systems within twenty miles of the university campus. Mentor teachers for the program must have three years teaching experience and be state certified in their content area. A mentor may volunteer to accept a preservice teacher, or may be nominated for the task by the building principal or school district personnel. In exchange for their participation, the individual school system, or sponsoring school district, received a tuition voucher from the university that may be used for teachers’ professional development or used at the discretion of the school district. Since no data was directly collected from the mentor teachers of my participants, no consent for their participation was necessary.

In my dual roles of university supervisor for their field experiences and as a Graduate Teaching Associate within their Summer Quarter mathematics methods courses, all of the members of the cohort grew to know me and became familiar with
me. During the first week of each field experience, I introduced myself to the school administration at the field placement site and introduced myself to the mentor teacher assigned each preservice teacher. The principle administrator of each placement building and each mentor teacher were informed of the goals of the project, were informed of the preservice teacher participation within the project, and were presented with a written copy of the research questions that guided the inquiry.

Even though the mentor teachers played a critical role in the preservice teachers’ development over the course of the academic year, the focus of this study was the reflective development of the preservice teachers I supervised. Thus, I felt that excluding the voice of the eleven mentor teachers was justified. Incorporating these additional sources of data and information would have further complicated the processes of data collection and data analysis and would have also made the entire research project unmanageable.

Data Sources

As a means of providing clarity and direction for the reader, a data source chart has been provided in Tables 3.2 and 3.3. This table lists each data source collected throughout the study, the methodological rationale for the data source, and the location of each data source in the appendices.
Initial Writing Sample

As previously described, each preservice teacher was asked to write their best description of how they envision their future classroom in the first class meeting of their first Summer Quarter secondary mathematics methods course. Given approximately twenty-five to thirty minutes to organize their thoughts and create their writing, no specific guidelines were offered for their writing other than to elicit specific details of their future classroom vision. They were asked to include as many details on room arrangement, teaching methods, use of textbooks and assessment techniques as they felt necessary. However, each preservice teacher had the freedom to include other details.

As a co-instructor of this course, the initial writing was collected, read, and initially sorted by the researcher into two separate groups for possible inclusion in the study. Two preservice teachers, Charles and Azeem, who articulated a predominantly traditional teaching style within their writing, were selected for inclusion in the study. Whereas two preservice teachers from the cohort, Carrie and Brett, articulated a propensity for reform-minded, Standards-based teaching strategies were also selected.

To be considered as ‘predominantly traditional,’ the Initial Writing Sample included syntax that focuses on the classroom teacher imparting information to the students through mostly drill-and-practice pedagogies; the predominantly traditional preservice teacher writing was characterized by the predominant use of first-person
## Research Project Data Sources

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<tr>
<th>Data Source</th>
<th>Methodological Rationale</th>
<th>Location in Appendices</th>
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<tbody>
<tr>
<td>Initial Writing Sample</td>
<td>• This writing sample was used to select the participants of the study. This writing also gave initial, base-line information for how the preservice teachers envisioned their future classroom and their initial teacher beliefs about teaching and learning.</td>
<td>Appendix A</td>
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<tr>
<td>Pre-Study Questionnaire</td>
<td>• This questionnaire was adapted to ascertain the preservice teachers’ perspective on the processes of teaching and learning. It also provided opportunity for preservice teachers to share their thinking about schools, teachers, and teaching before any field experience had begun. The preservice teachers were also asked to articulate an initial metaphor for teaching and learning.</td>
<td>Appendix A</td>
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<tr>
<td>Post-Study Questionnaire</td>
<td>• This questionnaire was adapted to offer an opportunity for preservice teachers to be reflective of their field experiences and to also serve as an indicator of growth since the initial questions also appeared on the Pre-Study Questionnaire.</td>
<td>Appendix B</td>
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<tr>
<td>Weekly Reflective Writing</td>
<td>• These prompts were designed to solicit preservice teachers’ contemporary thinking regarding current issues in education, the student in their classroom, their teaching actions, and the processes of teaching and learning. Beginning in Winter Quarter, each preservice teacher was given the option of using the reflection prompts or to use their own classroom experiences as the topic of personal reflection.</td>
<td>Two Sample Reflection Prompts in Appendix C</td>
</tr>
<tr>
<td>Observation Fieldnotes</td>
<td>• Fieldnotes were taken during each scheduled classroom observations. They give a written account of classroom teaching actions, the delivery of content, interactions with students and questions from the supervisor to spur further reflection on students and classroom actions.</td>
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<td>Pre-Observation Interviews</td>
<td>• This interview was conducted before each scheduled observation. The questions solicit the preservice teachers’ lesson planning and assessment planning as a growing aspect of their classroom practice.</td>
<td>Appendix D</td>
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<tr>
<td>Post-Observation Debriefing /Interview</td>
<td>• The questions were designed to place the preservice teacher in a reflective mode immediately after the act of teaching. This information was used to focus the preservice teachers’ attention on what went well for the students and to give rationales for teaching actions. Preservice teachers were also asked to reflect on how the lesson could be improved in the future.</td>
<td>Appendix E</td>
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Table 3.2. Research Project Data Sources.
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<th>Data Source</th>
<th>Methodological Rationale</th>
<th>Location in Appendices</th>
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<tr>
<td>Small Discussion Group Audiotape Transcripts</td>
<td>• Since reflection does not occur solely in written form, I used the transcripts from weekly small group discussions to supplement written data. Within small group discussions, preservice teachers were asked to reflect on their own practice, further solidify their thinking about teaching and learning, or defend their position to hypothetical teaching scenarios. These sessions were more congenial than the weekly reflective writing, and the preservice teachers were more inclined to share their current thinking in a safe environment amongst their peer group.</td>
<td>Two Sample Competency Packet Items in Appendix F</td>
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<td>Competency Packet Ratings and Evidence</td>
<td>• At the conclusion of each field experience. Each preservice teacher was asked to self-assess their own performance toward twenty-three stated competency and to provide evidence for their self-ranking. This was a source of reflection from the preservice teachers and gave a written record of progress across the academic year. At the end of the academic year, each preservice teacher had a detailed record of progress, evidence to support their decisions, and a chart of professional growth.</td>
<td>Appendix G</td>
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<tr>
<td>Focus Group Transcripts</td>
<td>• After Spring Quarter Final Grades had been submitted, a focus group was held with the participants. Since the official supervisor/preservice teacher relationship had officially ended, participants were asked to share their honest feedback regarding their mentor teachers, their field placements, their supervisor, their thoughts about the program, and their current understandings about teaching and learning</td>
<td>Appendix G</td>
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<tr>
<td>Supervisor Feedback Form</td>
<td>• This was a four-question form used by the Program Manager to solicit information from the cohort regarding the level of feedback given by supervisors in reflections and observations. It was given at the end of every academic quarter and the results were compiled and tracked by the office of the Program Manager.</td>
<td>Appendix G</td>
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<tr>
<td>Personal Experience of Researcher</td>
<td>• My past experience as a middle school and high school teacher and my work as a university supervisor provided perspective and insight as I worked closely with each participant.</td>
<td>Appendix G</td>
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Table 3.3. Additional Research Project Data Sources
pronouns and included scenarios of lecturing, or other more direct transmission formats of classroom instruction to students. To be considered a piece of ‘reform-minded’ writing, the preservice teachers writing used syntax that focused on the classroom teacher acting as a facilitator of learning within the secondary classroom. The writing contained images of students working together, or individually, to construct their understanding of mathematical concepts. The writing sample also showed evidence of using third person pronouns and conveyed verbal images of teaching through monitoring student understanding and interactive forms of communication. Other criteria meeting this categorization was the use of activities and questioning to engage student thinking.

Once separated into two groups, I randomly selected three students’ writing from each group. The authors of the first two randomly selected papers from each set were first approached to be included in the study at the Autumn Quarter field placement orientation and the one remaining writing sample from each group was kept in reserve as an alternate potential participant. As a group, the four initially selected were given an introduction to the goals of the study and the research questions. Each potential participant was given forty-eight hours to weigh their decision and their consent to participate. At the end of two days, all four initially selected secondary mathematics preservice teachers agreed to participate and letters of consent were signed and obtained. Since all four initial participants opted to be included in the study, the two alternates were not approached and their identity remained undisclosed.
These projective writings were stored by the university supervisor in a three-ring binder that he carried to each small group meeting and each scheduled lesson observation and subsequent debriefing session. Serving as an original frame of reference for the researcher, it was analyzed with the data collected from Autumn Quarter. However, during Week Eight of Spring Quarter, each participant within the study was given his or her original writing sample for the purposes of self-monitoring and reflection. Each preservice teacher was given the option use his or her progress toward this projected vision as a topic for their required weekly reflective writing.

*Pre-Study and Post-Study Questionnaires*

The purpose of these questionnaires was to elicit the preservice teachers’ contemporary thinking regarding the symbiotic process of teaching and learning. The questions on the form were modified from Laboskey’s (1994) questionnaire and revised through a pilot study of this inquiry. While this protocol was originally designed to ascertain the changes in preservice teachers’ dispositions about teaching as a result of their engagement in diverse field experiences, I was able to modify the original questions and the sequencing to gain pre-study and post-study evidence of the participants thinking about teachers and the work of teaching. These questions were selected for their appropriate focus on the changes in reflections of preservice teachers. Whereas the initial questionnaire asked preservice teachers to articulate their initial beliefs and attitudes about teaching, the post-study questionnaire encouraged
the preservice teachers to investigate the changes that occur in their thinking over the course of their field placements.

An electronic version of the Pre-study Questionnaire was given individually to the participants during Week One of their Autumn Quarter field experience. Each participant was given five calendar days to think about their responses and return their electronic responses to the researcher. A list of these questions is provided in Appendix A.

The post-study questionnaire was given to the participants the final week of their Spring Quarter field experience; since the preservice teachers were not enrolled in university coursework during their Spring Quarter student teaching experience, extra time could be dedicated to its completion. To accommodate their hectic schedules during this quarter, the preservice teachers were allowed to complete the questionnaire over the course of a week as they brought closure to their field placement work. They had the liberty of responding to the questions in hand-written or electronic form. For comparative purposes, some of the questions used for the post-study questionnaire were stated exactly as they were stated in the Pre-study Questionnaire. This allowed for direct comparison between questions and provided additional evidence of change and growth over time. The list of Post-study Questionnaire items is provided in Appendix B.
Weekly Reflective Writing

At the beginning of each field experience, as part of a cohesive reflective process developed by a team of university supervisors and educational researchers within the program, each preservice teacher established four to five goals for the quarter. Each preservice teacher also received a set of weekly, structured, reflection topics from the Program Manager as a means of communicating with the university supervisor. The intent of these prompts was to provide direction for their reflective writing and as a guide for their thinking throughout the field experience. These reflection prompts had been created, field-tested, and revised by a team of university supervisors, the Math, Science, and Technology Program Manager, and a faculty representative during the two most recent academic years. These prompts also functioned as a guide to the preservice teachers in an examination of his or her own practice, if the preservice teacher chose to do so.

To facilitate the conversation between the university supervisor and the preservice teacher, each participant was required to electronically submit a total of eight weekly reflective writings per quarter. Some of the prompts required the preservice teacher to do teacher-related actions, such as record their reactions to attending a school-sponsored event, to have a specific conversation with the mentor teacher regarding his or her personal beliefs, or to keep a log of their structured observations of the students in their class. During both Winter and Spring Quarters, the preservice teachers were given structured reflection prompts by the Program Managers, but were explicitly told by the Program Manager and the university
supervisor that they had the personal option of responding to the structured reflective prompts or to choose topics of individual interest to explore through their reflective writing. To give the reader a better indication of what topics were addressed and the types of questions asked in their weekly reflective writing, two sample structured prompts are included in Appendix C.

_Observation Fieldnotes_

As university supervisor of these preservice teachers, the program expectations were explicit to make weekly, scheduled observations of the preservice teachers’ teaching and classroom practice. While the collective schedules did not always accommodate this structure, I observed each participant at least four times during their Autumn Quarter field placement, and five times each during both the course of their Winter and Spring Quarter field placements. At each observation of classroom practice, observational fieldnotes were hand-written in Autumn Quarter and electronically written during Winter and Spring Quarter. The Autumn Quarter fieldnotes were handwritten because the university supervisor did not have access to a laptop computer. During the university holiday break between Autumn and Winter Quarters, the university supervisor purchased a personal laptop for the expressed purposes of managing and completing this project.

These fieldnotes were written in a stream-of-consciousness style as the university supervisor responded to the actions and events within the class period. All observations of preservice teachers in action were announced and lasted
approximately fifty minutes; since some of the preservice teachers were placed in environments that operated on a block schedule, such as Brett in Winter Quarter, the announced observations each lasted approximately one hundred minutes.

The goal of the fieldnotes was to obtain a more complete picture of the developing teacher in terms of content delivery and interactions with students. Fieldnotes were written during and directly after observations and provided a written record of the teaching episode. Each preservice teacher was allowed to read and to review the electronic versions of the fieldnotes. It was hoped that access to these observation fieldnotes would allow the preservice teacher the opportunity to reflect on the observation of an outsider stepping into their classroom. The fieldnotes included direct observations of lesson delivery, verbatim interactions with students, and also open-ended questions that were used for one-on-one post-observation interviews and topics for future weekly small group discussion meetings. After the scheduled observation and post-observation debriefing, an electronic copy of the university supervisor fieldnotes was electronically sent to the preservice teacher and mentor teacher for their records.

*Pre- and Post- Observation Interviews*

Before each observation and directly after every announced observation of the preservice teachers’ lessons, a semi-structured interview between the university supervisor and preservice teacher occurred. These interviews were scheduled at the convenience of the preservice teachers during Autumn and Winter Quarters, however
teaching restrictions limited the availability of the preservice teachers immediately after scheduled observations in Spring Quarter. In this instance, the post-observation interview was scheduled later in the school day or after school hours.

Each pre-observation interview lasted approximately less than one class period, or fifty minutes, to allow for the preservice teacher to collect materials and prepare for the lesson they were to deliver. For the Pre-observation questions that were used as a precursor to each scheduled observation, see Appendix D. The pre-observation interview protocol was adapted from the researcher’s training and experience with Praxis III Assessment documents (Educational Testing Service, 2001). The questions were selected and adapted to facilitate the discussion between the university supervisor and preservice teacher. Since the university supervisor had seen and given feedback to the lesson plan drafts submitted for each lesson during Autumn Quarter and Winter Quarter, the discussions during these interviews focused on lesson revisions that occurred as a direct result of the feedback. During Spring Quarter, this discussion centered on the issues of lesson design and lesson planning. Each question remained open-ended to solicit as much information as possible from the participants.

Most pre-observation interviews were held in the mentor teacher’s classroom or a nearby teacher’s lounge within the building. As this repeated protocol grew to be a common expectation for each scheduled observation over the three quarters of field experience, the interview began to take the form of a conversation between the university supervisor and preservice teacher. To mirror the shared discourse of this
interaction, the Post-observation Interview was changed to a debriefing to emphasize the collaborative nature of the exchange and to fit as a natural extension of the three phases within the reflective development model.

Each post-observation debrief lasted one class period, approximately fifty minutes, and were held in the mentor teacher’s classroom, if possible. If the mentor teacher remained in the room for the entire preservice teachers’ lesson, the mentor teacher was encouraged to join the post-observation debrief to share ideas and feedback on the observed lesson, but due to the class schedule of the mentor teacher, this was not always possible. The post-observation debriefing questions were, again, selected and adapted from Praxis III expectations and document (Educational Testing Service, 2001) in hopes of establishing reflective habits immediately after the act of teaching. A list of the reflective Post-observation questions that were used may be found in Appendix E.

*Interview and Debriefing Audiotape Transcripts*

Heeding the danger of only using the written word to reveal reflective thinking (LaBoskey, 1994), the pre-observation interviews and post-observation debriefing sessions during the Winter and Spring Quarter were audiotaped and transcribed by the researcher for later analysis. These interviews were conducted with a dialogical method of discussing specific issues and questions raised by the preservice teacher’s development needs and university supervisor’s fieldnotes. Each interview focused on different aspects of teaching, lesson planning, projected
classroom control, planned assessment techniques, rationale for using student groups and student group structure, and student engagement. However, most post-observation discussions focused on reflective questions pertaining to what the preservice teacher thought were strengths and weaknesses of the lesson and what portions of the lesson would need to be restructured for the next time the lesson will be taught. Each participant granted consent to be audiotaped within the initial letter of consent. These audiotapes were transcribed within one week of the observation, but transcripts were not shared with the participants.

Weekly Small Group Discussions

An additional responsibility of the university supervisor was to conduct weekly small group discussions with preservice teachers to which he or she was assigned. Due to the structure of the field experiences, these meetings were held as part of the scheduled large cohort teaching seminar during the Autumn and Winter Quarters, but were held at the convenience of the individual preservice teachers and supervisor during the Spring Quarter student teaching experience. During Autumn and Winter Quarters, these small group discussions were held on-campus and allowed the university supervisor to build rapport and establish positive relationships with the study participants. Each small group discussion session lasted approximately forty-eight minutes, depending on the topic for discussion. Topics for discussion groups included issues of interest to the preservice teachers according to their developmental
needs; some weeks, the topics for the weekly reflective writing were also the topic of the weekly discussion group.

During Spring Quarter, these discussions were held at a coffeehouse near campus to provide a more relaxed and communal setting for group discussion and interactions. With the mounting pressures of their field placement work during Spring Quarter, the topics of small group discussions naturally gravitated toward a sharing of teaching experiences rather than a directed conversation. These small group sessions were audiotaped and transcribed for later analysis for developing reflective thinking based on their current classroom practice. Since group interviews “have the advantages of being inexpensive, data rich, flexible, stimulating to respondents, recall aiding, and cumulative and elaborative over and above individual responses” (Fontana & Frey, 1994, p. 365), these sessions helped to build a comfortable and safe space between researcher and participant and fostered a sense of community and mutual respect.

**Competency Packet Ratings and Evidence**

As part of the summative evaluation of the preservice teachers’ performance during each quarter-long field experience, a twenty-three-item competency packet rubric was used to facilitate the evaluation process and to offer opportunities for preservice teacher reflective development. Prior to an end-of-quarter final conference, each mentor teacher, the university supervisor, and each preservice teacher separately ranked the preservice teacher on each of the stated competencies by placing a mark in
the descriptor box that best described the preservice teacher’s performance. An example of these items may be found in Appendix F.

Prior to the final conference, each preservice teacher was expected to self-assess their performance and provide specific evidence to support his or her self-evaluation. Acceptable evidence included reference to lesson and unit plans, university supervisor observation notes feedback, reflection responses, mentor and supervisor feedback, university coursework, and other relevant sources. Mentor teachers and supervisors were not required to provide evidence for their ratings, but were encouraged to provide feedback on any of the competencies. During a final three-way conference held in the last week of the quarter, the preservice teacher support triad brought their completed evaluation rubric, compared comments, and reached consensus about the preservice teacher’s skills and abilities. Based on these communal ratings, the triad suggested future goals and outlined action plans to implement the changes in subsequent quarters or during the preservice teachers’ first professional year.

As preservice teachers progress through their field experiences, the evidence provided for each competency packet item accumulated. Each quarter, the stated goal, action plans, record of shared ratings, and evidence to support each rating were added to the previous quarter’s information. By the end of the Spring Quarter field experience, the competency packet document clearly traced the progress made by the preservice teacher and indicated changes that may or may not have occurred in the content and depth of their reflective thinking.
Focus Group Transcript

At the conclusion of the university academic year, and after final grades had been submitted to the Program Manager, the researcher hosted a focus group session with the participants. The interview was held on-campus in the same room in which we had meet for small group discussions during the Winter Quarter, and the session was audiotaped. With the primary focus of the session to receive reflective feedback from the participants in terms of their placements, their mentors, and the extent to which they used the feedback they received. This session was conducted after the final grades were earned in hopes of gaining more honest and direct opinions from the preservice teachers since the official supervisor-preservice teacher dynamic ended with the conclusion of the Spring Quarter field experience since I was no longer working in an official capacity for the university. A list of initial focus group questions is provided in Appendix G.

In the role of educational researcher, the discussion focus group followed the natural flow of educational equals in a group sharing of ideas and experiences. While the questions were prepared in advance of the focus group meeting to solicit feedback and reflectively monitor their professional growth over the past academic year. The two-hour time limit for the focus group quickly elapsed and not all questions on the protocol were specifically addressed.
**Supervisor Feedback Form**

In order to solicit feedback from all of the preservice teachers in the cohort, the Program Manager created a feedback form to elicit comments and recommendations for improving the quality and consistency of the university supervisors utilized by the program. The four-question form was given to each member of the cohort during the final large group cohort meeting of the quarter. A graduate assistant in the Program Manager office separated the feedback forms by supervisor and recorded the feedback provided so that programmatic decisions could be made. After this compilation, the supervisor feedback forms were to be returned to the specific supervisor, however, only the Winter Quarter feedback forms found their way back to my possession.

**Personal Experience of the Researcher**

Since this project involved my dual role of university supervisor and educational researcher, my past three years experience as a university supervisor and twelve years experience as a classroom teacher provided perspective and insight. I was able to observe, critique, question, probe, and investigate all aspects of my preservice teachers’ classroom performance and reflective writings and discussions. My previous work in teaching and teacher education will assist in my ability to understand and analyze the nature of the changes in content and depth of preservice teacher reflective development from an emic perspective.
Dealing With Data

Data Management

With four participants submitting thirty weekly reflective writings, completing questionnaires and forms in conjunction with the research, creating countless lesson and unit plans, contributing to weekly small group discussions, and assessing their own progress at the end of each academic quarter, this study produced a massive amount of documents, transcripts, and audiotapes. I quickly learned that I needed a workable system to manage the plethora of information and data that I was receiving. It was also imperative that my system be manageable because I was collecting data for the preservice teachers’ progression through the teacher preparation program and for my own research purposes.

Honoring the security and identity of the participants.

Systematically and safely securing the data and the anonymity of the participants was a very high priority. At the initial meeting with the participants, I asked them to create their own pseudonym or offered the option of selecting or creating one for them. All documentation that related to a particular preservice teacher was identified by their alias, the type of document, and the date received. The researcher stored a running list of all documentation electronically, and all hard copies of existing data were stored in a secure location. All data sources, both electronic and physical, will be destroyed at the conclusion of the study.
Electronic storage.

Since one primary goal of the university’s leadership was to encourage college programs to become paperless by the year 2010, many of the documents and resources used by the preservice teachers in the program were already available in electronic form. In fact, most communication regarding the expectations of the program between the university supervisor and the preservice teachers came in the electronic exchange of emails and word-processed documents sent and returned as electronic attachments. That is, within our community of five, it was easier for us to exchange documents via the Internet than it was exchanging hard copies of lesson plan, unit plans, weekly reflective writing, observation fieldnotes, pre- and post-observation interviews, and transcripts.

While the lack of physical copies did free much needed space in my personal work area, I did need a system to identify documents, to signify that I had given feedback to the work, and to protect the identity of my participants. Within the secure university webmail system, I created four additional in-boxes in my personal email account. Each in-box was named using the self-selected pseudonym of the preservice teacher followed by the word documents.

When I would receive electronic documents from my participants, I would download the work or attachments to my personal desktop. Once I had provided feedback to the preservice teacher’s work, I would re-title the work using the participant’s pseudonym initials followed by the title of the document, and its sequence in the progression of the quarter. Thus, for example, the fourth lesson plan I
electronically received from Charles during Autumn Quarter was saved as “cb Autumn lesson plan, #4). The fifth Spring Quarter weekly reflection that I received from Carrie would have been saved electronically as “cy Spring reflection #5. An audiotape transcript from a Winter Quarter small group discussion, in which all participants were engaged, was not electronically stored by initials, but rather by the session title and its placement in the quarter. So, in this example, the transcript was saved as “Winter small group discussion, week 3).

I would, then, re-save the file to my personal desktop and also to a personal flash drive that did not leave my possession during the research project. This flash drive served as an electronic back-up to my personal hard drive and also served as a storage location for the multiple drafts of the chapters that comprise this project. This form of electronic storage proved invaluable as I constructed the cases of my participants and needed specific information quickly.

*Physical copy storage.*

In my development as a qualitative researcher, through this project and others as well as my university coursework, I found my writing process was greatly aided by the using hard copies of my data set. With hard copies in my hand, I could make notes to myself in margins and, at times, physically cut paragraphs and sentences from their original writing to develop themes and development across the academic quarters and across participant cases.
With such a wide range of documents and authors to jumble, I also quickly learned in the first weeks of Autumn Quarter that I would also need a system to readily identify the author of any piece of writing and its proper chronological location within the larger data set for the academic quarter and the entire school year. Since I had already begun to electronically store all of the documents I had received, I devised a plan to capitalize on my visual and systematic learning style to associate color with my participants.

In what proved to be one of my best ideas to manage the hard copies of my data set, I purchased and coordinated four colors of copy paper, ink pens, file folders, post-it notes, whiteboard markers, and binder clips. I, then, used the colored paper and the pseudonyms of my participants to randomly make the color-coded association of office supply to preservice teachers. From the second week of Autumn Quarter, all of Charles’ documents were printed on red paper and all personal notes, codes, and comments were listed in red ink and on red post-it notes. All of Charles’ documents were then placed into red file folders so that documents from within the same academic quarter could be stored together in my secure home office. I repeated this process for Carrie, who was associated with all green items. Azeem was coordinated with blue, and finally, all of Brett’s data and information was associated with purple, although at times black ink substituted for Brett’s purple.

This color-coding scheme worked very well for me in the creation of my preservice teachers’ cases. Once I picked up any piece of paper, I was immediately able to tell which preservice teacher had written the work, and thanks to my system of
electronic storage, I was able to identify the type of work and the quarter in which it was written. This drastically eliminated, yet could not completely prevent, countless hours of paper shuffling looking for critical information in the data set.

In fact, this color-coding scheme worked so well that I began to incorporate the same system into my electronic data storage systems. As I began to become more familiar with my participants and their associated color, I began to provide my electronic feedback in their assigned color through the Font Color options of Microsoft Word. Additionally, once I had transcribed an audiotape, I then went back into the transcript to change the color of the text to match the speaker of the words on the audiotape. Having these colorful tools at my disposal, I was able to cut and paste their electronic words into other documents in the process of looking for commonalities and differences across the field experiences and in creating the narrative vignettes which eventually became the individual cases of my participants.

Data Analysis

The process of data collection and data analysis in any piece of qualitative research is ongoing, recursive, dynamic, and emergent (Merriam, 1988). Within my doctoral research training, I had encountered this iterative idea of qualitative data many times and in many different forms. However, I glossed over the inherent truth of this statement and considered the advice of the words too simplistic as I dove into my ocean of data. I had been initially secure in the reflective development model that I had helped to develop based on my work in previous cohorts within a graduate
student research team, and I erroneously felt determined that this model would easily encompass and explain my participants path to teacherhood. Yet, as I came to know and to understand my participants in our year-long interactions, my paths to data analysis had to be rethought, and at some points the path, had to be created.

First attempts at coding.

During the Autumn Quarter of this research project, I was excited to begin with the four preservice teachers who had so willingly elected to be part of this particular study uses a preexisting model for preservice teachers’ reflective development. Each week I would receive the reflective writing and hold small group discussions with them. As they became more comfortable in their field placement settings, I began to receive electronic lesson plans. I would spend between six to eight hours each week commenting on their work, listening to their reflective words, offering my own feedback and experiences to theirs, and asking questions or ‘think abouts’ as to what circumstances and influences had shaped their current thinking about teaching and learning.

Although I had only cursorily mentioned the reflective model to my participants in our introductory meeting, I would offer my Autumn Quarter feedback with a preconceived notion as to which phase and Cycle of the model any particular piece of work my participants had sent. Presented in Chapter One as part of the overall theoretical framework for this study, I had conceivably taken first steps in the analysis of the data. Once I had begun to collect five Autumn Quarter reflections, one
complete set of initial and revised lesson plans, and one set of pre- and post-observation interview transcripts, I sat down with my colored pens to begin coding the work of my participants with their current Cycle and phase clearly at the forefront of my mind. I had initially thought that all forms of data would be initially categorized according to the Cycle of Development – thinking like a student, teacher-centered, or student-cluster centered - and phases of reflection depth – report, review, or rethink. Examples of these Cycles and phases, as well as distinctions amongst them, were presented in Chapter One.

In those first weeks of Autumn Quarter, I began to code my sets of written data based on the topics the preservice teachers had included in their writing and also the issues that they were raising when describing the contextual issues at work in their field placement classroom. For example, I had initially noticed discrepancies between the actions of mentor teachers when compared to the initial beliefs of the participants. I had coded such items as \textit{NMS} for Not My Style when describing actions of the mentor teacher that did not seem to be a fitting action for the preservice teacher, or \textit{~Good} for Not Good when the participants would give an example of how classrooms in schools would not mirror the exemplary classroom of respectful students that existed in their minds.

I further noticed other such trends appearing across the reflective writings, small group transcripts, and lesson plans within Autumn Quarter. When a preservice teacher would articulate or expand on a particular belief he or she would have about teaching, I would code the section as \textit{BTT} for beginning teacher thinking. Another
huge category for coding in Autumn Quarter was *Not Me*. This category was used more toward the end of Autumn Quarter as the preservice teachers gained more experience teaching individual lessons and would experience difficulty in gaining students attention to a lecture of compliance in completing a teacher-directed activity. The words “not me” that I developed for this code focused on the very small amount of power that the preservice teachers felt they had as a result of their limited exposure the mentor teachers’ class or feeling that *I am not their teacher*.

This process continued throughout Autumn Quarter in our face-to-face interactions as well. I would lead a pre- or post-observation interview with a preservice teacher and immediately hustle to my car to jot any memorable phrase or action that the participant had given. For example, in one post-observation debriefing with Azeem in Autumn Quarter, I couldn’t wait to leave the building to make my notes about his “propensity to want to use group work but didn’t know how to arrange or structure what he wanted to do in the context of students seated in rows and columns.” After I had jotted my notes to compare with the transcript at a later time, I would again begin to classify my jotted notes in terms of Cycles and phases hoping that my assignment to the stages of the model would lead me to exciting conclusions that would build on my prior work.

This process lasted for two months in Autumn Quarter; in my preliminary data sets, I have circled text with what I interpreted to be CII for Cycle Two or CIII for Cycle Three thinking. That is, until I began to take a more serious look at the codes I had created, where the circumstances surrounding the code were occurring, and the
wild and unpredictable path that my preservice teachers were following through a predominantly linear model. I began to notice this most in the early stages with Carrie. In her Initial Writing Sample, I felt that she had broken Cycle One by realizing that she needs to address the learning styles of her students and that she wanted her students to learn through meaningful mathematics activity. However, when I would complete a round of preliminary coding from reflection response, I would become excited when I would interpret her thoughts about a single student as reporting in Cycle Three, only to have my hopes dashed in the following week by having her return to a rethinking phase of Cycle One. As I began to track my record of Cycle and phase for each participant, there was no clear systematic way to explain their wandering paths. I can honestly say that this frustrating process of coding data with an existing framework firmly in mind left me disheartened in my two years of work with the research team and wondering if I would ever get to the point of writing a dissertation. I abandoned any further analysis of my Autumn Quarter data until the beginning of Winter Quarter with the question of ‘what were we thinking when we created this model?’ circling in my head.

*Letting go enough to listen.*

After the holiday break and my participants had entered their second field placement experience, this time taking a more central role in teaching by assuming complete control of one of their mentor teacher’s classes, I expressed my concern and lack of data analysis progress with my dissertation adviser. This conversation marked
a turning point in the research project as I began to heed the advice I received in letting go of the reflective development model. I was encouraged to trust the data I was collecting and to listen to the actual voices of my participants as I began to work with them more closely and visit their classrooms once or twice per week. I must also say that my work became much more enjoyable once I abandoned a preconceived structure on a data set yet to be completely formed.

In leaving behind my Cycles and phases, I began to hear their voices, their beliefs, and their individual struggles in Winter Quarter as Azeem would struggle in structuring a group activity, as Carrie would feel defeated in the pressures to improve standardized test scores, as Brett happily co-existed with a mentor teacher with whom he felt so comfortable, and as Charles fought to just maintain control. I began to see them as developing teachers with issues very similar to the puzzles of practice I had to resolve a bit over ten years ago.

With this new point of reference, I began to return to my data set from Autumn Quarter as I began to collect items for my Winter Quarter data folder. I printed new sets of reflection responses and lesson plans so that I would not be distracted by my previous attempts at coding, and I began to filter through my data set for each participant to identify meaningful quotes from their words and actions that began to represent the current issues with which they were struggling. With this new mindset, I was readily able to identify the issues of lesson planning and the lack of classroom ownership that the preservice teachers were experiencing in Autumn Quarter. Though their placements were spread throughout the city, their issues
gravitated toward the same topics of classroom control and use of text-book driven pedagogies. Only the details of school culture and interpersonal relationships between mentor teachers and preservice teachers seemed to provide differentiation.

It was from these themes, thoughts, and reflections of the preservice teachers that I began to construct narrative vignettes of what I considered to be central issues of their separate field experiences. From my observation notes, our debriefing sessions, the weekly reflective writing, and the audiotape transcripts our discussion time together, I could create the details of their separate teaching episodes and begin to supplement the recreation of the event with further pieces of data that I had collected. This synthesis of data gave depth and credibility to the isolated incidents that I was writing as I began to examine my separate data set for pivotal incidents or examples of when my participants had begun to actively reflect on the classroom they were in and the learning taking place around them.

With the construction of the narrative vignettes going in a productive direction in my own process of sense-making, I decided to reserve any subsequent data analysis in later quarters until I had a complete data set from our collective work over the quarter. In being patient, I came to understand that I must trust my data, and that my data set, in its entirety, will tell a story. It might not be the story I wanted to hear, or what I thought I would here, but a story nonetheless.

In what was to become an ongoing and dynamic process, I began to examine entire sets of data as a means of data analysis. With an entire ten-week worth of data in my hand, I was able to begin to filter through the separate pieces and chunk
sections of data together. This process allowed me to identify themes or issues that the preservice teacher encountered during the course of the field experiences, and this process also allowed me to identify the major areas of growth or hindrances within the field experience that did not allow the preservice teacher to grow.

As an illustrative and atypical example of this process, I present a portion of my analysis for Azeem in Winter Quarter. Once I had received his entire data set for Winter Quarter, I began to read each separate piece of data and track key quotes and key instances in his reflective writing. Such phrases and quotes include “Right now, it is frustrating because I am coming into some else’s classroom and trying to take over” (Azeem, Winter reflection #5); “Relationships with students are built day-in and day-out through interaction” (Azeem, Winter reflection #8); and “This field experience has defined my teaching style” (Azeem, Winter small group discussion, week 8). While these specific phrases are unconnected, they do serve the illustrative purpose of identifying major chunks or themes that were recurrent in his Winter Quarter writing. From these separate key quotes and teaching episodes, I was able to construct separate narrative vignettes for Azeem as he progressed in his field experience. I began to play with the order and sequencing of these separate narratives for each participant during each of their respective field experiences to develop a more complete picture of the preservice teacher participants. In this case, I was able to construct an initial case for Azeem in Winter Quarter that focused on the context of his Winter Quarter field experience, the steps that Azeem would take to build a sense of classroom ownership and empowerment, the lessons he learned about classroom
culture and lesson structures, and finally defining his own teaching style. These separate writings began to synergistically combine to create my four separate cases.

Creating separate cases.

The narrative vignettes that I had created from my detailed notes and observations began to form pictures of each preservice teacher within their isolated field experiences. It was my original intent to write about each field experience in a separate chapter with the four preservice teachers forming the four major sections in the chapter. I continued with this line of thinking in the formation of a first final draft of my dissertation. I knew that my structure and design had been described as unconventional with seven chapters instead of six, but I initially thought that this format was most well-suited to demonstrate to a reading audience how each field experience contributed, or hindered, the preservice teachers’ reflective development. My draft of this project remained in this form for over a month.

It was not until I began to receive feedback from my dissertation adviser, peer readers, and member checks that my current format presented a choppy tale of four separate people with little commonalities between the cases. Admittingly, my cases were in a rough form, and I was solely interested in presenting how the four participants came to develop within each field experience. My peer reviewers and adviser related how difficult my cases had been to read and to follow across the different field experiences. The settings, the mentors, the contexts, and most importantly, the meanings of each preservice teacher reflective development had
become lost in page-flipping back and forth to maintain a constant flow in the case. Based on the feedback I received, I began to cut, paste, splice, fuse, and re-craft each of the preservice teachers’ stories of development into separate chapters. With this new format, a reader was able to follow each preservice teacher from the first days of Autumn Quarter to the end of final exams in Spring. I feel that this change allowed each chapter to be free-standing and give a more complete picture of the preservice teacher’s development.

But, at this stage, my cases contained only the raw data and the connective narrative threads that held the pieces together. After yet another conference with my adviser, I was encouraged that my data presentation chapters had a better flow, but I had focused too much on the preservice teachers. In attempting to be too formal and academic in my writing, I had omitted my own voice in the data analysis and narration that would provide structure to the separate cases and allow for a more credible justification of my conclusions and implications. So, with further iterative work, in going back to my original notes, the original vignettes, and my first attempts at piecing these stories together, I was able to include my own voice to their separate tales and my own narration of the path each of my participants took to teacherhood. In allowing the reader to get inside my head, to read my interpretations of their thinking, and to hear the questions that I would put forth to them in an attempt to problematize their current thinking and actions, I have presented an even more complete picture of the critical features within field experiences that lead to
secondary mathematic preservice teacher to develop deeper and more thorough reflective habits of mind.

Credibility and Trustworthiness

For qualitative researchers, the issues of credibility and trustworthiness are paramount when conveying our data presentations and implications of our research to our reader. Increasing the credibility and trustworthiness of the data was an ongoing process from the moment the study was conceived and designed. I have used the tools of triangulation, peer review, member checks, and prolonged and persistent engagement to decrease bias that may have arisen due to my involvement with this project.

Triangulation

Data was collected from multiple data sources throughout this investigation. Data collected through interviews, observations, and their reflective writing was initially projected to be mutually complementary. In relying on multiple sources, both written and verbal, to construct the cases presented in the following chapters, I was able to create a more complete picture of the preservice teachers’ reflective development. Since most data was self-reported, I was aware of this potential credibility threat and used multiple levels of questioning and feedback throughout the field experiences to check for consistency of responses.
Peer Review

Throughout the reciprocal activities of data collection and data analysis, I would be remiss to rely solely only my perspective as their university supervisor and educational researcher to tell their complete story. To this end, I enlisted the assistance of two other university supervisors with whom I have a well-developed professional and personal relationship to act as peer reviewers and readers in the process of data analysis and drafting the dissertation. In the initial coding stages of Autumn Quarter, I asked each of these co-workers to confirm the developing coding structure I had developed by asking them to code three separate reflection responses independent of each other. From their separate attempts at coding data from my preservice teachers, I was able to ascertain that my initial sets of codes did encapsulate the themes that were present in the writing as well as additional codes I hadn’t considered. Since the coding scheme was abandoned at the end of Autumn Quarter in favor of the construction of narrative vignettes, I do not raise these discrepancies here.

In later quarters, through the construction of narrative vignettes that grew out of my chunking of key quotes and key instances present in the observation fieldnotes, the weekly reflective writing, and the small group discussion transcripts, I asked the same two graduate student peer reviewers to offer feedback and suggestive comments to my drafts. This process helped me to clarify my writing and the construction of the separate cases. My dissertation adviser also acted in the role of peer reviewer by
offering suggestions, feedback, and direction in the data presentation chapters and the embedded inclusion of my supervisor thinking within the separate cases.

*Member Checks*

At four separate times in each quarter of the Winter and Spring Quarter field experiences, I met individually with the participants for the expressed purpose of sharing my writing and case formulation for their prior field experience. At these small meetings, I shared my current thinking of the issues, successes, and not-so-successes that I felt each preservice teacher experienced in the prior field experience. I also discussed with them any draft of the case I currently had in my possession and gave an indication of which direction I felt my writing was going if the case was incomplete. The focus of these meetings was to clarify my position and interpretation of their writings, words, and actions in light of their intent. Since I was not present in their classroom everyday during the academic year, there were issues that I could have misinterpreted or misunderstood in the retelling of events in their reflective writing. This process ensured that the data, the data analysis, and later in the final stages of the project, the implications that I have presented met with the agreement and intention of the preservice teacher.

Each time I met with the preservice teachers for a member check session or as a collectivity to share the current progress of my writing and the project, the discussion was fruitful and no objections were made to my current understanding of their field placement experience or their reflective development. I feel that most
participants were happy and secure that they were working with a thorough and experienced university supervisor.

Prolonged and Persistent Engagement

This study, including the dissertation defense, final revisions, and the final draft spanned five academic quarters. I feel that I was involved and engaged with the entire cohort from the beginning of their coursework until the completion of their action research projects the following summer. During the research period, I came to consider the four preservice teachers that formed my purposeful sample extremely well by serving as their university supervisor for the entire span of their teacher preparation program. I was able to share my personal experience with them and to observe their actions and performance inside and outside of their classroom, and as we came to grow in our work together, we were able to form a supportive community of five as we talked, taught, learned, smiled, and even cried together. In coming to know these four preservice teachers on a personal level, I feel that my prolonged exposure to each of them has enabled my ability to craft an honest and representative case of their field experiences and their individual paths to teacherhood.
CHAPTER 4

THE CASE OF CHARLES

Over the next four chapters, I present a separate case for each participant within my study. At times in this narrative, I fill the role of educational researcher and narrator, and at other times, I share my own thinking as the university supervisor of these four secondary mathematics preservice teachers. For clarity and also to facilitate the reader’s understanding of our separate yet intertwined journey through three field experiences, I have chosen to represent my different voices with different typesets. When presenting the story from the perspective of educational researcher and narrator, the words appear in standard font. To delineate the speaker of any quoted passage, I have used a parenthetical reference with the speaker and source of the quote. When I am presenting the story from my perspective as university supervisor, interjecting my own commentary, or providing analysis of the narration, the words appear in italics. When presenting my own language and quotes, I have used the same parenthetical reference structure and have used US as an abbreviation for university supervisor.
Introducing Charles

Charles is a twenty-four year old, Caucasian male who came into the secondary mathematics preservice teacher preparation program immediately after completing a bachelor’s degree in mathematics from a large midwestern university. Charles grew up on a farm of rolling hills in a sparsely-populated, eastern area of the state. Growing up, he would spend many hours after school and days during the summer helping out on the acres of land his family owned taking care of the animals, operating the tractor, and completing chores. He attended a rural high school with many of the same classmates that entered kindergarten with him. The students and faculty of his secondary experience were very familiar with each other, as is true in most rural communities.

Recalling His Own School Experience

While he felt he received a solid educational foundation that prepared him for college, he did express some degree of dissatisfaction with the teachers and processes he encountered as a high school student. “I never really liked the routines in high school of placing the night before’s homework on the board, reviewing it, and then starting on the lesson for the next homework” (Charles, Initial Writing Sample). Thinking further about those who instructed him in high school, he recounts teachers who “lacked passion” for their job by having “no structure to their classes and no expectations for the students in the class” (Charles, Autumn reflection, #4) and teachers who let students take free reign of the classroom.
On most days, [his industrial arts teacher] didn’t teach anything and we spent our time in class tearing things apart or playing basketball. Some of my buddies and I spent many class days in the school truck, hot-rodding around the baseball and football fields or terrorizing small, helpless animals. On some days, I actually felt dumber after leaving school (Charles, Autumn reflection, #4).

That is not to say that his educational past consisted only of unsuccessful teachers whose classes lacked clear instructional goals and standards of behavior. He cites his high school Algebra II teacher and Political Science teacher as successful role models based on the criteria that they were able to explain their content well and provided fun activities that related to the concepts they were learning in the class. As a secondary student who readily describes himself as “unorganized and having a strong dislike for doing things just to keep busy” (Charles, Autumn small group discussion, week #2), the measure of a successful teacher was defined by how much he learned. The unsuccessful teachers he encountered on his path to graduation made him realize how important it is to actually have some passion for what you do, and how necessary it is for teachers to make things fun and relate the things that we are doing to things in real life so that students can understand.

While progressing through his undergraduate program, Charles never thought [he] wanted to be a teacher. In fact, I always felt that I was too smart and that teaching would be a waste of my abilities. But, eventually, I grew up and became less conceited and realized how much I really enjoy
working with students and passing on the knowledge that I possess. I enjoy seeing the expression on peoples’ faces when they finally gain some understanding of something that they have had difficulty learning. I also think that it is possible to have a positive influence on a great number of peoples’ lives as a teacher (Charles, Pre-study questionnaire, item #1).

I did not know Charles before the beginning of our time together, but I could relate to his apprehension about committing himself to the teaching life. We shared a rural Appalachian heritage, and I, too, had many reservations about this particular career path, mostly because of the comparatively low salaries most teachers earn in rural areas. Yet, in his initial response to my questions, I detected some of my own naïve thinking when entering the profession. In my experience, I initially hear such altruistic ambitions from preservice teachers who still think of the classroom as a student. I consider the majority of my work as a university supervisor as a guide to help my preservice teachers rethink their prior, unchallenged beliefs about the work of teaching, and as a facilitator in leading the preservice teachers into a more dynamic perspective of the interrelatedness of teaching and learning.

Articulating a Vision for Teaching and Learning

On the first day of their first secondary mathematics methods class, which was part of a three-course methods sequence, taken in the first Summer Quarter of the preservice teacher preparation program, Charles outlines how he envisioned his future mathematics classroom.
I want to promote an atmosphere where students participate in discussions or work on small projects or activities with a real-world feel or practicality with things they can relate to. In my classroom, I hope to use things with more concrete structure than just drawing or writing on the board. I always learned better by doing, so I believe I would try to find interesting activities to work into my lessons so that the students remain stimulated; I believe this would help students learn (Charles, Initial Writing Sample).

According to the participant selection criteria that I outlined in Chapter Three, I considered Charles’ initial vision as something slightly different from what traditionally occurs in secondary mathematics classrooms that I have observed over the past four years, but I felt he could still be considered traditional in the amount of power and influence he felt he needed in the classroom. I classified most of the images within his initial writing as being slightly progressive but also reactionary to the traditional instruction that he received. I thought that he was leaning more toward a constructivist view of teaching, but he did not have the language or concrete images to project his current thinking onto paper. Yet, as the weeks progressed in Autumn Quarter, he was able to fuse his initial program coursework with glimmers of classroom experience to more fully articulate his preliminary philosophy of education.

Student-centered classrooms are an important part of a good education, and students need to be an active part of the learning process. Getting students involved in the classroom not only makes the class more interesting and fun,
but when a person is stimulated and actively thinking, they learn more and retain the information longer (Charles, Autumn reflection, #9).

*In articulating these before and after snapshots of his contemporary thinking about teaching in Autumn Quarter, Charles clearly shows a propensity for active learning and engaging student interests as central tenets of his educational belief system. But, as I was to learn through the process of his field experiences, I had a difficult time trusting Charles’ articulated vision based solely on his words.*

In order to obtain a more complete picture of my participants, I asked them to complete a Pre-study questionnaire. *The intention of the questionnaire was two-fold. First, I needed to get some background information from them about teachers they had experienced and schools they attended. I feel that most of the current assumptions used by preservice teachers are predicated on their prior experience within educational systems, and I needed baseline data about where they had been. Secondly, I needed to know what they thought the role of a classroom teacher should be. Again, I feel this information is molded and shaped by past experience, but before I could help them develop through their reflections and field experiences, I needed a clear picture of what they thought they should be doing over the next three quarters before that work even began. Preservice teachers can never get a second chance to articulate their initial beliefs, and I felt that this instrument assisted in making this information public.*
Initial thoughts of good teaching and good learning.

When I asked each of the participants to articulate the critical aspects of what they considered to be ‘good teaching,’ Charles emphasized the importance of good teachers in his response as ones who “listen to the students in the class and allow the students to think for themselves by getting them involved in the class” (Charles, Pre-study questionnaire, item #3). Charles continues to list other hallmarks of good teachers including commanding respect from the students in the classroom, but having a personality that makes the class fun. “Teachers who don’t laugh or demonstrate a sense of personality in their classrooms come across as unapproachable and uncaring” (Charles, Autumn reflection, #5). On the other side of this coin, Charles expressed his thoughts of ‘good learning’ by the ultimate goal of retaining what was learned and being able to transfer learned ideas to new tasks and ideas so that one can gain new ideas and understanding (Charles, Pre-study questionnaire, item #4).

I was somewhat encouraged by the level of consistency throughout Charles’ initial responses. His vision of ‘good learning’ did match the criteria he had listed for what made his own successful teachers memorable. Even though he has not entered a secondary classroom in over four years, Charles gives an overview to how he sees his role in challenging the traditional role of the secondary mathematics teacher.

Many students can sit in a classroom and write what they are hearing without learning anything or gaining any understanding or knowledge. So, I think that something I plan on doing is trying to do things in my classroom that allow
students to discover some of the things on their own instead of sitting in the classroom and having me tell them what I want them to know. It seems to me that things we learn ourselves are the things that we understand the best and remember the longest (Charles, Autumn reflection, #3).

Initial thoughts of effective teachers.

As part of their first structured reflection prompt of Autumn Quarter, each participant was asked to identify the individual characteristics that would enable him or her to become an “effective” teacher. Charles shared with me, as the sole recipient of his reflective writing, that he considers himself “creative, passionate, knowledgeable, patient, and demanding” (Charles, Autumn reflection, #1). Creativity, which was listed as his first and most critical attribute, is important to him because he feels that not all students are readily excited about learning math, and that it takes a certain degree of creativity to make learning interesting to everyone. “Being passionate about what you are doing helps people to be creative and innovative, and helps them to adapt to the environment to help make it as conducive to learning as possible” (Charles, Autumn reflection, #1).

With his undergraduate degree in mathematics, Charles considers himself very knowledgeable of the subject matter he plans to teach.

In order to teach something to someone else, you have to understand the material yourself, so the knowledge I have of mathematics will be very important in my future career. Since students do not always do the things that
are requested of them, and sometimes it takes more time and effort than one may anticipate to get someone to understand what they are supposed to be learning, it is very important to be patient and willing to take the time necessary to help those who really want to learn (Charles, Fall reflection #1).

I initially had no problem with Charles’ responses to his first reflection prompt. From his first writings, I was seeing some degree of consistency across his responses, and I took this as a sign of his responses being trustworthy. I felt that the two attributes he had listed and expanded upon are both very crucial to developing a successful classroom practice, but in this first reflection, I needed to set the stage for the work I needed to do - to challenge their thinking and to push them to consider alternative ways of thinking that they may not have previously considered. I chose to use my feedback to their reflections as my main vehicle for this line of development.

Here, in a portion of my response, I honed in on what I considered to be an overly confident tone in describing his knowledge of higher abstract mathematics as a basis for classroom teaching.

This is a very contentious point, Charles. Do you think that having a bachelor’s in math is the best way to prepare math teachers? Do more college math classes translate to greater effectiveness in teaching? Would it be better to take fewer math courses but more classes in the pedagogy of mathematics? There is a lot of research out there about how many classes in your content is the right amount. I personally believe that it is not WHAT you know, but HOW you know it. I still to this day have no idea why I had to suffer through the
algebraic structure of normal subgroups (US, Autumn reflection feedback, #1).

It was my direct intention in my reflection feedback to not be critical of his response, after all, this was his authentic, initial thinking, and it needed to be honored and supported if I wanted to receive more of it. It would be improper for me to be judgmental; so, I instead tried to interject my own perspective and humor to make my reaction less threatening to his current thinking but to also get him to consider his position and tone in speaking of his own mathematical abilities.

It had been my past experience from three previous years as a university supervisor that preservice teachers, regardless of their content area, need and indeed crave, specific and honest feedback directed at their contemporary thinking. So, as I read each line of their weekly reflections, I responded back to them in a stream-of-consciousness style that allowed them to follow my thinking as it was spurred by their words. In my responses, I was able to funnel my own opinions, my own experiences as a secondary mathematics teacher, and my own insights to support and to challenge their weekly responses and reactions. Without the two of us being physically present, it was the intention of my feedback to create an extended, almost surreal, conversation between us. While I specifically did not expect or intend any direct response to the questions I put forth in my response, I continued to operate under the assumption that my feedback was providing ‘think-abouts’ that they would incorporate into their daily observations and classroom practice.
Explicating a Metaphor for Teaching and Learning

Building off what I had learned in the research base regarding the use of metaphors as windows to the initial thinking of preservice teachers, I asked each participant to develop a personal analogy for teaching in the Pre-study Questionnaire. With little to no experience in front of a classroom, Charles viewed teaching as being very similar to driving a car.

In the beginning, new drivers have only a small clue to what they are doing, and the same can be said for teachers. As a new driver gets more time behind the wheel, the confidence level rises and they are able to become more proficient and take on new challenges; as teachers gain more classroom experience, they become better at it and it gets easier. Just as the driver of a car can exert personal choice and power in determining the roads traveled and the final destination, a classroom teacher has the power to choose where the class will go, the way you want the class to go, and the power to teach the things that you want in the way that you want to teach them. Since a car can only go as far as the gas in the tank will allow, teaching can be the same if you don’t put the time and energy into what you are doing, and it will be hard for your teaching to be effective (Charles, Autumn reflection, #2).

Charles also identifies an additional parallel between driving and teaching in the speed that you are allowed to travel; “sometimes you get stuck behind Sunday drivers, and other times you can be passed by everyone on the road. Students in the
classroom can lag behind while others zoom ahead and get bored” (Charles, Autumn reflection, #2).

In some ways, I agreed with Charles’ analogy, but I noticed some holes in his thinking. I thought he could explore his idea a bit further, and more importantly define his own role and the role of his students within his metaphor as I suggested some ideas for the further refinement of his verbal image.

Okay, I can follow your line of thinking here, and in some ways I agree. But think about your image a bit further, Charles. Where do you see yourself in this metaphor? In Driver’s Ed. class? Turning the key in the ignition? Buckling the safety belt? Crashing into the windshield? Where do you see the students? Strapped into a car seat the back seat? In the passenger seat? Locked in the trunk with the spare tire? (US, Autumn reflection feedback, #1).

From our first weeks of work together and from our first few small group discussions, I felt Charles had a relatively secure idea of what constitutes effective teachers. From our initial verbal and written exchanges, I was able to ascertain that Charles envisioned himself leading effective classes in which students learn based on their past experiences as a learner, and I felt he also had articulated a strong belief to engage students in his lessons and making their mathematical activity meaningful. But interestingly, I felt Charles had neglected to define his own role within the images he had created and the words he used to describe his initial beliefs. As I was to learn from our interactions across the quarter, the seemingly unintentional omission of self from his initial verbal images of teaching seemed to be an eerie foreshadowing of the
classroom practice that I was to observe and critique in latter weeks. It is from this initial perspective that Charles and I began to shape his contemporary views of teaching, classrooms, and students.

Charles in Autumn

The Context of Charles’ Autumn Quarter Field Experience

For his initial field experience, Charles was assigned to Creekview Falls Middle School, an affluent, suburban middle school less than fifteen miles from the university main campus. Within this school system, each grade level of the middle school program is self-contained within its own building in a campus-style complex. The three buildings within the complex were constructed within the past ten years and have been well maintained by the students, faculty and staff of the building. The seventh-graders at Charles’ school filter through the carpeted hallways past unmarred lockers between classes. Classrooms within the building are spacious, contain individual student desk and chair sets, and offer wireless Internet access to students and teachers regardless of their physical location within the building. The school district is well-known throughout the metropolitan area for offering a challenging and integrated curriculum, for an exceedingly high level of parental support and encouragement, and for higher than average standardized test scores.

While a majority of the students within this seventh-grade building take an accelerated and integrated first-year algebra course, for which the students may earn high school credit, Charles was placed with an average-ability level Prealgebra class
consisting of eighteen students. Throughout the ten-week field experience, the content of Charles’ required five lessons focused on operations with integers, solving one- and two-step equations, and graphing linear relationships in the coordinate plane. Even though his mentor teacher and I had separately encouraged Charles to employ any pedagogical approach he wanted to try to meet the learning needs of his students, Charles’ initial teaching experiences found him relying on a more traditional pedagogical framework that I felt did not reflect his expressed thoughts of effective teaching and learning.

In each lesson I observed across the quarter, I felt that I was not witnessing the same speaker of the words I had read earlier in the quarter. Charles’ teaching methods were “abysmally teacher-centered and his actions were almost robot-like” (US, Autumn observation notes, lesson #4). Almost immediately, I was very keenly aware that something was not right. There was a huge gap between the words and ideas contained in the weekly reflections I was receiving and the teaching strategies he was employing in his classroom. Although I could not find a root cause at the time, it was this noticeable incongruence between personal beliefs and classroom practice that would become a familiar refrain that echoed throughout Charles’ field experiences.

First Teaching Experiences

In his first official observed lesson, which due to scheduling conflicts was technically his second lesson delivered to the class, the learning goal he had stated in
his lesson plan focused on the conceptual understanding of multiplication with integers. I was able to make the connection of his lesson to the current instructional unit on integer operations, but based on the lesson plan I had received three days prior, I knew there was much work and thinking that needed to take place if his lesson was to be successful. Since this was only his second attempt at creating a physical lesson plan, I expected to provide the typical feedback that any novice teacher would receive. I made specific comments to alter his lesson objectives into action verbs that can be readily measured, and drew his attention to what I considered some weak thinking in that his lesson structure did not match his conceptual goals.

Signs of incompatibility.

However, what I feel was most disturbing about the plan that I received was that it stood in direct contrast to his classroom vision. Charles’ plan delivered such a critical component of mathematics through direct instruction as the students were to sit passively and take notes that he provided for them. With no time allotted in his plan for students to explore their own thinking and no activities to build the students’ understanding of the patterns that naturally emerge from integer multiplication, I boldly questioned Charles’ pedagogical decision to expect the students to gain deep understanding from the rules he would ask them to memorize.

But are they ready for these rules, now? What do they already know about integer multiplication? Are these rules in their head already from last year? From this year? Yes, this is a VERY COOL way to explain the ideas of integer
multiplication. It is a very cultural and intuitive way to understand positives and negatives – but how does it tie in mathematically to multiplication? You have not even mentioned the concepts of factors and products! How is the mathematics of this lesson made explicit through these stories? Do you want them to get this in their head conceptually first, or do you want them to investigate these patterns numerically with their counters first before you lead them to generalizations? (US, Autumn lesson plan feedback, lesson #2).

I continued in my response to offer my own experience in getting my Prealgebra students to use two-colored counters to build their understanding of integer multiplication as repeated addition, and I sincerely hoped that Charles would take my advice and suggestions.

Yet, as I entered his classroom and took my seat in the back of the room to scribble my observation notes and feedback, the students entered and took their assigned seats in front of me with their desks in two concentric horseshoe shapes, Charles chose to begin the lesson in a way in which he said he never liked when he was a student, with the students self-checking their responses to the previous night’s homework assignment. This was immediately followed by the students asking questions about the homework problems they missed. Sadly, this direct contradiction to the classroom practice he articulated in his written reflections when considering good teaching went unrecognized by Charles as he continued to deliver the remainder of his lesson.
As I highlighted in my observation feedback, the focus of the students’ questions during the homework question and answer session demonstrated a complete lack of understanding of subtraction involving integers from the students. *I tried to feed what I was noticing back to Charles in the form of questions aimed at his choices.*

*What is it about their questions that should signal to you that most of them are unclear about the rules for integer subtraction? How do I know this? With this many questions still lingering, is their foundation of addition and subtraction of integers sturdy enough to support their new learning of multiplication? Is this lack of understanding an everyday occurrence? (US, Autumn observation notes, lesson #2).*

Charles did his best to answer their questions while sitting next to the overhead projector and stressing the importance of the subtraction sign adjoined to a negative sign in front of the subtrahend as “joining forces to make a positive” (Charles, Autumn observation notes, lesson #2).

*I sensed unspoken frustration in Charles’ body language as he tried so hard to understand what was confusing the students. I also began to notice an unspoken reliance on the confusing symbolic notation he was using to convey meaning. Charles continued to tap on the overhead transparency with this black Vis-à-vis marker to draw the students’ attention to the symbols he was speaking of. It seemed as if his voice got louder and his tapping grew more intense as he struggled to find different ways to explain why the subtracted negative meant to add.*
Teaching becomes telling.

Realizing that more than half of the class time had been absorbed by the homework check and subsequent attempts to clarify the students’ understanding, Charles quickly shifted gears and told the students, “that they were now going to talk about multiplication with integers” (Charles, Autumn observation notes, lesson #2). From my small desk at the back of the room, I internally shuddered in disbelief at his sudden and abrupt transition. I felt that the students needed more time to build an understanding of the previous lesson, but respected Charles’ nervous positioning in the front of the room. I wondered if Charles was trying to get to his new lesson only because I was in the room for his first scheduled observation. The frustration level of the students almost matched my own.

With little hesitation or cues that would signal a change in the direction of his lesson, he instructed the students that they would now need to take class notes as he worked through some example problems. Initially, the few examples provided to the class of seventh graders involved small positive integers, and the idea of finding a product was tied directly to the students’ understanding of multiplication as repeated addition. The students in his class seemed content that they were okay with small digit multiplication, and I also sensed that the students also seemed to be relieved that their homework for the night would not involve the complicated issues resulting from the juxtaposition of subtraction and negative symbols (US, Autumn observation notes, lesson #2).
However, in examples that followed, Charles began to place negative numbers as factors into the multiplication problems he solved for the students. The connection between multiplication and repeated addition was again mentioned, but only superficially, as the students’ frantically tried to copy all of the information from the screen. Once four examples had been given to the class, I witnessed Charles scramble to summarize the information he has just imparted to the students. “If the numbers have opposite signs, then the answer is negative,” he writes on the overhead (Charles, Autumn observation notes, lesson #2). *I think at this point, I hung my head at the bad math I was witnessing. I wanted so badly to seize control of the class and to teach the lesson as I would do it by giving the students manipulatives and emphasizing the words factor and product. Then, I fondly remembered my first lessons with my own unclear expectations and explanations while using a top-down instructional style. I didn’t learn to teach in a week, and had to realize that my preservice teachers could not develop in such a quick manner, either.*

As the last minutes of his class time began to elapse, Charles attempted to provide an additional point of reference for multiplication with integers. Charles quickly created a multiplication table on the overhead screen for his students:

\[
\begin{align*}
4 \times -2 &= -8 \\
4 \times -1 &= -4 \\
4 \times 0 &= 0 \\
4 \times 1 &= 4 \\
4 \times 2 &= 8 \\
4 \times 3 &= 12
\end{align*}
\]

The students in the class were then asked to examine the list of multiplication facts and identify any patterns they noticed. No one in the class was able to connect the multiplication table to the rules for integer multiplication that Charles had told them only minutes before. Frustrated, he flipped back through a stack of transparencies
upon which had symbolically written earlier in the lesson as merely \((+) \times (-) = (-)\) and he began tapping his marker again (US, Autumn observation notes, lesson #2).

This lack of student response was frustrating and disconcerting to Charles in his role as teacher. The perceived frustration and futility of his efforts seemed only compounded when Charles attempted to assess the understanding of two of the students in the class. However, both students gave incorrect responses to the sample integer multiplication problems that they were asked to solve. Realizing that class time was nearing an end, and without further probing or clarifying the students’ misconceptions, Charles quickly grabbed the homework worksheets he had photocopied from the teacher’s resource file that accompanied the district-approved Prealgebra textbook for their evening assignment (US, Autumn observation notes, lesson #2). Charles told the students they had the remaining class time to begin their homework, but most of the students chose to talk to their neighbor or stuff their belongings into their backpack in preparation for their trek through the crowded hallways to their next class.

Searching for a rationale.

During a post-observation debriefing with Charles, I knew that I had to somehow mask the steam coming out of my ears. I knew that chastising him for this lesson would do more harm than good, and with this teaching episode so early in his field experiences, harsh words and mandates would only destroy the rapport and entrée I was trying so hard to establish. Yet, as we talked, he had not noticed what I
had. He shared with me that he was generally happy with the overall structure of the class, but was not sure that the students had met his lesson objectives (Charles, Autumn post-observation debrief, lesson #2). Even though he had articulated in his written lesson plan objectives that he wanted to teach the ideas of integer multiplication conceptually (Charles, Autumn lesson plan, lesson #2), he expressed to me that he was unsure of how to teach such ideas that had become so second nature to him. I honestly felt that somewhere in his university content coursework that he had honestly forgotten, or never conceptually understood, why those were the rules. “I mean, yeah, it made perfect sense to me, but I looked up from the overhead and all I saw were blank stares” (Charles, Autumn post-observation debriefing, lesson #2).

I tried to use my observation notes in an attempt to garner Charles’ attention to the students who gazed at the projection of jumbled, black scribbles overhead work on the screen in front of the room. With confused looks in their eyes, they scrambled to copy all of the information onto the back of their homework paper.

*The students in the class are frantically trying to copy what you have written, Charles. Why? Is this meaningful mathematics? You are flying through this! Did you catch the one student to your left who asked what the dot in between the numbers means? Did you hear the two students in front of me saying that ‘they see it, but don’t understand it’? (US, Autumn observation notes, lesson #2).*

*In his first observed teaching episode, I expected him to have some degree of tunnel vision and focus mainly on himself and his own actions. I hoped that my notes*
and our subsequent discussion would nudge him in the direction of noticing students in the room, but I knew that extending this focus would take time. So, I chose not to harp on the issue. I did take some comfort in the fact that Charles had realized that his lesson had gone awry, but the debriefing that followed highlighted some of the assumptions that Charles had made about teaching and about his students. Charles had admitted that he had looked at the explanation provided in the students’ textbooks, but he was unable to come up with any different way to explain the concept of integer multiplication, even though I had given many different suggestions for addressing the content conceptually only days prior when I had received his drafted lesson plan. “I really thought that they would be able to get it by looking at a few examples, and then generalizing what was being done on the overhead. I mean, that’s all I ever remember it being taught to me” (Charles, Autumn post-observation debrief, lesson #2).

As evidenced by this classroom episode, I felt Charles clearly demonstrated a propensity to present the content as he understands it and in prearranged chunks dictated by a textbook publisher. When I pressed for a rationale as to why he had chosen to teach his lesson in this way, he simply stated that he didn’t know how to teach the idea any other way. In fact, he even hinted that he thought that his lesson was conceptually-based. Rather than reflectively considering his students’ current understanding and using it as the foundation to build conceptual understanding, I felt as if he had deferred his personal beliefs for active students engaging in meaningful activity in favor of a pedagogy that relied on memorization of facts imparted by the
teacher. While the words of his reflections that he shared with me projected a more constructivist view of instruction, I felt the choices he had made for this lesson more closely mirrored the daily classroom actions of his mentor teacher.

Ignoring the conflict.

Further one-on-one reflective debriefing between us brought to light some thoughts of what went well with the class. Charles was happy with the fact that he was able to answer all of the students’ homework questions, even though there was a great deal of confusion, as there always is, when relying on confusing notation to convey inherent meaning. Charles also mentioned that the second greatest strength of the lesson was the fact that the students in the class were mostly well-behaved and that he didn’t have to give any detentions for gum chewing or dress code violations (Charles, Autumn post-observation debrief, lesson #2). Thus, I sensed Charles basing his initial reflections on his classroom practice based on what went well for him during the lesson and demonstrating a disposition that effective teaching can be measured in practice by low occurrences of class disruptions by the students.

I feel that this teaching scenario exemplifies Charles’ lessons throughout the quarter as creating a cognitive conflict between what he feels as constituting good teaching and learning and what occurs in the classrooms interacting with students. Rather than focus his lesson on the conceptual understanding of finding products from integer factors, Charles consciously elected to maintain the overall structure of the class by direct instruction as modeled daily by his mentor teacher. Rather than
teaching a concept-based lesson in which the students are allowed to investigate the integer products involved within a particular context, to use manipulatives as placeholders for their thinking, to formulate and test their own conjectures, to share their formulating understanding and thinking, and then collectively formalize rules for integer multiplication in their own words, the students were expected to gain formal understanding by listening to the teacher and copying example problems from the overhead.

Traditional Begets Traditional

The four remaining lesson observations I made followed precisely the same format, and their impact on meaningful student learning was negligible. I strived to make my thinking and suggestions more explicit as I responded to his lesson plans and made observations of his teaching. I was simply hoping that he would take the bait and begin to critically analyze the ramifications of his directive actions on the students’ learning, but to no avail.

Contrasting teaching words and teaching actions.

In the following weeks, Charles’ students were taught to solve equations through only symbolic means, and every answer to the in-class example problems was a whole number (US, Autumn observation notes, lesson #3). The students were given algorithms to find means, medians, and modes without understanding what the terms mean in relation to a data set. When commenting on this submitted plan, I try to bring some disconcerting issues to the foreground in my feedback.
Charles, as I read this plan and see it in action in your classroom, I see this as being a very process-driven lesson. Which, in and of itself, is a good thing to get them prepared for [standardized] tests, but when do they get to think about 'What is the difference between these three things?' And 'WHY would I want to use one over the other two?' Would it be more meaningful if they collected their own data and then found these descriptive items? How can we extend their thinking and open it up to other ideas (US, Autumn lesson plan feedback, lesson #4).

But, again, the comments and suggestions I had made to his plan went unheeded.

Even though Charles articulated his own drastically different beliefs regarding mathematics education through the weekly reflections he submitted as part of the program requirements, I could not get him to acknowledge the cognitive dissonance that was, to me, so pronounced. As he presented in his teaching philosophy that was due at the end of the quarter, Charles writes, “Classes should be taught in a way that students can see the relevancy of the subject matter that is being presented and be able to see where it can be applied in the real world” (Charles, Autumn reflection, #9). Yet, as indicated in his lesson on integer multiplication and all subsequent lessons I observed, no application problems were given to the students to solve, and there were no real-world examples of the content given or shared with the students in the class. I had begun to think that Charles was taking an easy road to reflection. Based on my experience as a university supervisor, I began to piece together a reason for why there was such a contrast between his teaching language and his teaching actions. Based on my observation notes and his written reflections, I could not escape
the assumption that he was writing what he thought I wanted to hear rather than what he truly believes.

Staring into the chasm.

In later weeks, Charles further reflects on his beginning teacher thinking when considering student-centered classrooms. In response to the last structured reflection prompts of the quarter, Charles again articulates what I, perhaps mistakenly, took to be an authentic, external representation of his teacher beliefs. “Getting the students involved in the classroom not only makes the class more interesting and fun, but when a person is stimulated and actively thinking, they learn more and retain the information longer” (Charles, Autumn reflection, #9). Yet, I could not overlook the glaring chasm that existed between what I was reading and what I was seeing in his classroom.

As a university supervisor, I began to examine Charles’ situation from many angles. Was it me? Was I the only one seeing this discrepancy? Had I been too lenient in my lesson observations? Had the reflection prompts that I helped to create been too generic? In creating the prompts and with such little actual classroom experience, had we selected issues that the preservice teachers were not ready to examine? Should I have put demands on his classroom performance? Had I not given enough substantive feedback in my responses to his reflections and his lesson plans? Was he even reading the responses that I had sent? I felt as if I was on the receiving end of two different projections of Charles’ teacher self. In the first projection, I was
seeing the graduate-student-teacher who wanted good grades and wanted to impress his professors and university supervisor by using the right words placed correctly in the right responses of his weekly reflections. The second version was the field-placement-teacher who wanted so desperately to be accepted and liked by his mentor teacher and students that he was willing to put his own development on hold if it meant pleasing others. Yet, I consciously chose to leave my personal questioning unmentioned. Since I know and believe that teaching is a holistic activity, I knew that this dichotomy could not hold for the duration of the academic year, and at some point, if I were to fuel the flames with my evidence and questioning, the two personae he was projecting would inevitably clash.

In hindsight, I realize that I should have done more to challenge or to somehow externalize this conflict between his cognitive thoughts and his classroom actions. Yet, at the time, I chose not to intervene. While I did ask specific and direct questions to Charles asking for rationales for the choices he had made during the lessons I observed, I had honestly felt that interjecting my own mandates for more student-centered lessons and activities would be a detriment to the relationship I was trying to build with him. I had also felt that any intrusive manipulation on my part would jeopardize the natural development of his classroom practice and his reflective thinking. I personally felt torn over the struggle to step in or to remain on the sideline, but I felt it best in my position as an educational researcher to let the participant and the environment develop naturally and authentically.
Tradition Trumps Empowerment

It’s not my class.

I began to turn my attention to the relationship between Charles and his mentor teacher as a possible source for the disconnection of thought and action I was noticing. While Charles describes his mentor teacher as a man who is “enthusiastic about teaching” (Charles, Autumn reflection, #7) and willing to alter his teaching strategies from straight lectures so that he can implement group work and projects that incorporate technology,

The things he does seem to go very fast and perhaps he doesn’t spend the necessary time trying to develop understanding. Under the current pacing guide, we are under pressure to cover a new topic everyday, and I really don’t feel like we spend enough time on some things. That is one complaint that I have with the set up this quarter. I don’t really feel comfortable doing things that are different from what he does in class because I don’t want my students to be behind (Charles, Autumn reflection, #7).

It seemed that this particular reflection could not have come at a better time. After witnessing four weak lessons and spending countless hours hypothesizing in my head any possible root causes for his classroom performance, it felt that this particular reflection was a key insight into his thinking about schools and his perceived subservient position within his mentor teacher’s classroom. I chose to capitalize on his words in my reflection feedback and foster a sense of individual empowerment that I hoped would take root.
Some of the rapid movement you are noticing might be a typical middle school idea. If you keep them moving quickly, then they are less likely to get distracted by ‘hormonal issues’ that get in the way of their attention span.

But, within yourself, Charles, is it better to teach your topics and with the aim of teaching and learning for understanding, or do you just want to ‘cover’ the topics on the content pacing guide or curriculum packet? Yes, there is a decision to be made, and one that needs to be made in the best interest of your students and their learning! (US, Autumn reflection feedback, #7).

I’m obligated to mimic.

Later in the quarter, as part of the assessment process, I was able to ascertain additional meaning in Charles’ self-assessment of his performance that gives further evidence of his perceived powerlessness in his mentor teacher’s classroom.

Even though I was encouraged to try whatever teaching methods I would want to use, I had no control over the content I was going to teach, or the class time that I was allotted to teach. Plus, I didn’t teach the class period the day before, nor did I teach the same class the following day (Charles, Autumn competency packet evidence, item C&I #1).

Across my years as a supervisor, I had often considered the ephemeral nature of their five lessons and the randomized teaching of five unconnected lessons within Autumn Quarter field experience as a potential contributing factor to a perceived lack of
lesson and classroom ownership within the general cohort, but I had no idea that its effects were this limiting.

With these conflicting and confusing feelings of isolation and subservience at work in the classroom, Charles reluctantly confided in me that he found it “very difficult to actually do what I wanted” (Charles, Autumn reflection #9), and this was viewed as “extremely limiting on what [I] can do because I am almost obligated to mimic the teaching style that Mr. D. has, and to teach the class as Mr. D. would” (Charles, Autumn reflection, #7). I had tried at every opportunity to be supporting and empowering to the classroom actions of my preservice teachers, but I could not be in the classroom with them everyday. I was still the outsider from the university with little to no influence on the selection of lesson topics or the pacing of the district curriculum. I wielded what power and influence I could, but I was coming to realize that without the direct involvement or supportive input of non-traditional lesson frameworks from the mentor teacher, my words of encouragement and empowerment, along with my suggestions and resources for reform-based lessons, were as whispers in the gusting wind.

Summarizing Charles in Autumn

I felt Charles did demonstrate some level of reflective personal growth in the latter stages of this field experience by acknowledging the cognitive dissonance that exists between the teaching he wanted to do and the forms of content delivery he chose to use. However, his reflective thinking could not reach the critical point of
action by changing his adopted teaching style to resemble pedagogies that are more consistent with his personal philosophy of education. He did not feel empowered to teach differently, and, in ways that were consistent with his thinking like a student, he was content to use his classroom practice as a way to please others and convey mathematics as symbolic manipulation rather than to address his own personal and professional development needs or the learning needs of his students.

After fulfilling the five-lesson teaching requirements of the program for the Autumn Quarter, I felt that Charles was not clearly self-aware of his emerging teacher persona. Even though he had performed the role of teacher in five separate instances during the quarter and completed all of his assigned observations, he cautiously admits that he had not progressed as far as he hoped he would.

I don’t think I am a teacher, yet. A teacher has the ability to see the things that are going on in the classroom while they are instructing. Teachers have a better understanding of how students think and the way that the material needs to be presented so that students can understand. I think of myself as very much still a student, I don’t think I possess the knowledge necessary to consider myself a teacher, when teaching is defined as more than the passing of information (Charles, Autumn post-lesson observation debriefing, lesson #4).

Thus, toward the end of his experience at Creekside Middle School and considering the entirety of his first ten weeks in schools, I felt Charles begin to show preliminary growth in becoming a reflective teacher by noticing discrepancies
between the way he has presented the content to the students and by acknowledging areas for growth. Even though I encouraged him to try alternative teaching methods and had given resources to investigate so that his lessons could be more conceptually based, Charles clung to teaching strategies and interactions with his students that are easiest and safest for him.

But, I realized that it was still early in the game. There were two more quarters that we would spend growing and learning from each other. I had made some small inroads into developing the planning aspect of his teaching in terms of writing objectives and beginning to see the content he was going to be teaching through the eyes of his students. Charles had self-selected Winter Quarter goals that focused on being more creative in his lessons and projecting a sense of enthusiasm in front of the class (Charles, Winter Quarter goals, #1 and #3), but I hoped for more in the ten weeks after the holiday season. I hoped that with more daily experience in front of a classroom, that Charles would more clearly define his own, authentic classroom teaching style. Further, since I was going to give my preservice teachers more latitude with their weekly reflections, I had also hoped that I would be seeing more of an authentic voice from Charles as he would hopefully begin to connect more personally with his teaching self.

Charles in Winter
The Context of Charles’ Winter Quarter Field Experience
Preconceived notions of urban schools.
Transferring from a suburban middle school in Autumn Quarter to an inner-city high school for his winter field placement allowed Charles the opportunity to challenge many of the initial assumptions he had formed about teaching in urban environments.

First of all, the stereotype of the urban high school was definitely entrenched in my brain, but aside from the ethnic make-up, [my placement] high school is much more like the one I went to than the suburban high schools that I have been to. I think that I was a little intimidated before I went the first day because I have never really been in an environment where I was the minority, but with an open mind, things are going really well. I may actually like this class setting more than the one I had last quarter (Charles, Winter reflection, #1).

Judging from the abysmally teacher-centered path that he had chosen to follow during Autumn Quarter by not feeling in control and blindly mimicking the actions of his mentor teacher, I interpreted his initial impressions of Bordertown High School to be a sign of good things to come in making his initial classroom vision a reality. I thought that the commonalities he had identified between his high school and his Winter Quarter placement may provide some comfort level from which I could operate in trying to move his thinking out of the traditional and into something more meaningful for his students. However, the tone of the opening words of Charles’ first reflection of the quarter struck me as disconcerting. With such preconceptions of his students fostered through stereotypes, I felt that he would have difficulties gaining...
his students’ trust and building rapport. As a means of pushing him to think more
depthly about his unspoken assumptions, I thought I might be able to lead him into
further questioning regarding what was fueling his stereotypes of urban high schools.

In feedback to his first Winter Quarter reflection, I presented my own list of
distinguishing features of urban schools in hopes of getting some response from him
or reason as to how he came to form these preconceptions of his new teaching home.

Let’s pause for just a minute to think of what planted these seeds of
expectations when thinking about an ‘urban’ school. What really does make a
school urban? Race? Gender? Attitude and disposition of the faculty and
students? Availability of resources? Median family income? Property values?
The students on free and reduced lunch? The media? Levels of violence? (US,
Winter reflection feedback, #1).

At first, I was concerned that, I didn’t receive any reaction or response to the
questions I put to him, but hoped that through the next ten weeks, he would somehow
begin to question the delineations our culture puts on these urban centers of learning
and why so many teachers avoid working within them.

Charles’ new placement school.

Charles’ field placement school was renowned throughout the urban school
district by its troublesome truancy rates, low standardized test scores, borderline
graduation rates, and a difficulty in maintaining peaceful race relations among the
student body. In a sense, the school itself worked to support urban stereotypes rather
than to refute them. The business and economic structure of the area surrounding the high school is fueled primarily by fast food restaurants, quick-cash check cashing storefronts, pawn shops, and independent, minority-owned liquor stores and carry-outs. The student body of Bordertown High consists of over eighty-percent minority populations. In the neighborhoods surrounding the school, most properties are owned by aging seniors, are poorly-kept rental homes subsidized by Housing and Urban Development funds, or are low-income tenement housing provided as a service by city, state, and national housing programs. While the overwhelming majority of the students walk or are bussed to the school, a sparsely populated student parking lot is visible from the main entrance of the school. The older model cars show the signs of their age, but also serve as a buffer between the school building and the weed-infested and overgrown school athletic fields.

Charles’ new mentor teacher.

The mentor teacher to which Charles had been assigned, Dr. S., was a well-respected teacher within the school. Having completed a doctoral degree in mathematics education from the same university the preservice teachers and I were currently attending, she was the only math teacher within the building to have earned a terminal degree. Since I was now completing the same doctoral program she had experienced, I knew first-hand the courses that she had completed and the training that she had received within her doctoral studies. Based on her reputation within the school and within the university doctoral program, I was anxiously anticipating that
some of our two combined professional belief systems would be able to coerce Charles into becoming more independent in his teacher behavior and teacher thinking.

With a booming voice and caring heart that is only matched by her looming physical stature, the students had come to know Dr. S. as a caring and concerned force in their lives. In my past experience working with preservice teachers placed in the building in previous years, her personal level of caring and concern was a force that most students had not experienced in their previous ten years of public schooling. Daily, Dr. S. would use the students’ vernacular and ethnic colloquialisms to build rapport and to express concern for their lives outside the school building. Students came to view her as a teacher, a counselor, and a nurturing mother-figure who was not afraid to step into authoritarian shoes to verbally reprimand a student who was showing signs of laziness or apathy toward school or life.

I think that Dr. S. is going to be a good mentor for me. Most of the students in her classes seem to like her and pay attention to her. She has earned their respect. She has a unique way of motivating the students, and I think that it seems to work well for her, though I have my doubts that the same threats coming from me would have the same effect (Charles, Winter reflection, #1).

I initially sensed a good vibe coming from the interaction between this new mentor and preservice teacher pairing, but I noticed an unspoken and uncomfortable apprehension from Charles when he was working with his students in small groups before his teaching assignment began. Charles had again raised the topic of respect,
and I wanted Charles to realize that respect from students does not come automatically, and it is not a commodity that can be earned through osmosis. In responses to Charles’ comments on the teacher-to-student interaction he was able to observe in his first weeks at the school, I attempted to get Charles to initiate a conversation with his mentor teacher about how this level of rapport and interaction can be built in the first critical weeks of the school year.

*Why does Dr. S. have the respect and classroom control that she does, Charles? Why does this woman receive respect and attention from the students when other teachers in the building who are much more intimidating and powerful are turned into mincemeat by the students? Why does she have this relationship with them? I suggest that you ask her how she was able to establish the tone for learning in her room. Why does she remain untouched and unaffected by the students and why is she not an outlet for their anger and disinterest? (US, Winter reflection feedback, #1).*

*The beginning of a tenuous relationship.*

*I didn’t mean to be overly critical of her physical attributes with my words. But, there was an important aspect of building rapport and being authentic with students that I needed Charles to notice and acknowledge if he hoped to be successful in this field experience. From my own experience working in both middle and high schools, I had personally seen many new teachers, including myself, fall victim to student apathy and even rebellion by coming across as overly authoritarian or as*
inauthentic. I did hope that Charles was able to glean some understanding from my questions and my attempts to push his thinking about becoming independent in his teaching and classroom management style. He was going to have to earn the respect of the students on his own. I, too, offered to loan Charles my copies of Ladson-Billings’ *The Dreamkeepers* and Delpit’s *Other People’s Children* to learn more about culturally responsive teaching, but my offer was perceived to only compound the nightly graduate-level coursework that he was concurrently experiencing. Consequently, I received no response from my delving questions nor did I receive any inclination that he had read my reflection feedback at all.

As a university supervisor, I initially thought that Dr. S.’ vivacious and authentic personality would help to bring about a marked improvement in the level of enthusiasm Charles had previously demonstrated in front of a classroom, but as the weeks of Winter Quarter progressed, the relationship between mentor and preservice teacher never clicked. Whenever I would enter the room for a scheduled observation, the physical distance that remained between the two of them coupled with the overly formal use of language in their interpersonal communication to produce an odd sense that their collegiality was a mere formality. Charles was not allowed to share her teacher’s desk and organizational space in the front corner of the room and seemed to be banished to a small student desk and chair in the back of the room usually reserved for larger students that traditional desks could not accommodate. For reasons that still remain unclear, mostly because of the lack of inclusion of the mentor teacher’s voice and perspective within my data set, the relationship between
the two of them remained professional and aloof over the course of the ten-week field experience, never reaching the level of two equals sharing the stories and responsibilities of teaching. I feel that this lack of personal connection only added to Charles’ growing feelings of insecurity and subservience within the classroom.

Charles Attempts to Take Control

As the first three-week orientation phase to his new school, his new students, and his new mentor, drew to a close, Charles and his mentor teacher had the opportunity to interact daily during the class period directly before Charles was to teach his lessons. Although I was not privy to the words and ideas exchanged in these short meetings, I had inclinations that the interactions were more directive than supportive. During our small group discussion, Charles did share with me that the pair frequently talked about the expectations that she has for her students, their views of education, and how she would structure a lesson so that the students could get some level of understanding from their work (Charles, Winter small group discussion, week 3). But, based on what I was to see in my first scheduled observations of Charles’ teaching, I began to personally doubt the bidirectional exchange of ideas in their interactions and what he was able to glean from her words and experience and directly apply to his work. I honestly thought that he was interacting daily with his mentor and was receiving similar types of feedback from the two other members of his support triad who had such similar mindsets. I was thinking that I should be seeing some effects of this feedback manifested in his classroom practice. But, what I
was seeing in his submitted lesson plans and my initial observations were merely a repeat of his reliance on the traditional.

The excitement of new challenges.

I was encouraged to know that Charles became excited about the challenges that he would face in his six-week teaching requirement.

The material that I am going to present is what I like, mostly Algebra I and Algebra II ideas. Whereas last quarter, the biggest thing I had to teach was multiplying two integers, and I have no real desire to do that on a large scale (Charles, Winter reflection, #1).

I, too, had enjoyed teaching both Algebra courses in my own secondary experience, and I knew that I would be able to share many of my own lesson plan ideas and a couple of graphing calculator labs that I had created for my own students many years before. Knowing that he had taught sporadic lessons on linear equations and graphing only a few short weeks before with his middle school students, I was also anxiously anticipating some transfer of learning from his earlier teaching episodes as well.

To preserve the pacing and consistency of instruction that her morning Algebra I classes would receive, but what I suspect was a calculated move on the part of Dr. S. to relinquish partial responsibility for a course she appeared to dislike teaching, she suggested that Charles take control of both morning Algebra I classes and plan for the two classes as a team with a second preservice teacher who was also
placed within the school’s math department; this second preservice teacher is not included in this study. Charles and I initially thought this increase in responsibility could be a good thing, “She thinks we should do this together because for one thing, she wants to keep the classes together, and it could be a benefit and good experience for us” (Charles, small group discussion, week 2).

I have, in previous years, often suggested to Winter Quarter mentor teachers that my preservice teachers should attempt to teach at least one lesson to two different classroom audiences to make comparisons between the necessities for content delivery and subsequently contrast the differences in student learning and retention. This experience has often yielded great results from the preservice teachers’ realizations that each class is different and that each class has its own personality. This realization usually has a large impact in the preservice teachers’ lesson planning. At first, I saw no reason to object to the proposal hoping that in doing more and going above and beyond the program expectations, Charles would, on his own, also reach some of the same conclusions as my previous preservice teachers who had also completed this task.

The difficulty of establishing an authentic teaching self.

As Charles became more integrated into the pre-existing classroom environment, the students reluctantly began to accept him as part of their community, but I sensed an unspoken reluctance on their part to completely trust his words, actions, and motives as demonstrated by their reaction to his quirky and misplaced
‘high-fives’ and his misunderstanding of their culture. In one instance, a statement intended to praise one reluctant male student’s participation in class turned on the use misconstrued use of a simple noun and became a confrontational situation. “I had no idea that the word ‘boy’ could be taken as an insult to some of my male students and the rest of my lesson just went downhill after that” (Charles, Winter reflection, #7).

From the outset, I felt that Charles would have trouble establishing himself as an authority figure within a classroom of students he didn’t understand and continued to see as different from himself. But, at my insistence, he began to learn and use students’ names and some of their personal interests as he would interact with them and answer their questions on review assignments as their first semester final exam approached.

As the days go by, I am beginning to really like the school I am currently placed in. The students for the most part have been good to work with and Dr. S. seems willing to help me and allow me the freedom to do the things I want (Charles, Winter reflection, #3).

Yet, in my scheduled observations, I couldn’t escape the feeling from the students’ rolled eyes and outbursts of laughter when he would try to speak and act as the students would (US, Winter observation notes, lesson #1) that his rapport building was predicated on an assumption that for him to be accepted by his students he had to separate his teaching persona from his authentic personality.
The widening chasm between words and actions.

As the honeymoon and orientation phase of his new placement began to fade, and the spotlight began to focus on his emerging role as a teacher within his mentor teacher’s classroom, Charles began to experience a disconcerting incongruence between the student-centered expectations of the program, the pedagogical style that he had articulated in his Initial Writing Sample as his vision of good mathematics teaching, and what the existing classroom framework would be able to support. “I think I am a little concerned about what the students are doing – or rather not doing” (Charles, Winter post-observation debriefing, lesson #1). Charles continues to offer his opinion on what he sees his teaching peers doing on a daily basis in response to a structured reflection prompt that asked him to focus on the daily interactions of his students.

From what I can tell, the teachers [within the math department] are very reliant on the curriculum guide and copy several worksheets every day for the students to do in class and for homework. My mentor does basically the same thing. Worksheets are usually given out during or following a short mini-lecture. A lot of the students don’t bring the worksheets back with them the next day, and many of them sit in class and pretend to do them while actually sitting in the class and daydreaming. It seems to me that we were supposed to be pushing inquiry, but I am not sure that I believe that it is working (Charles, Winter reflection, #3).
Here, I was initially happy that Charles had articulated a reviewing statement that acknowledged the discrepancy between what he sees professionals doing on a daily basis and what he believes. Yet, in the same way, I lamented not being able to see Dr. S. lead her classroom before Charles began his teaching experience. Thus, I had no basis to test the validity of Charles’ assertions of the textbook-driven nature of the school’s mathematics instruction other than my own personal knowledge of a few teachers within the building. I also had a working knowledge of the district’s demands to adhere to the regimented schedule of its curriculum guide in hopes to increase the district’s standardized test scores. I know that I wanted to believe that a classroom teacher with a terminal degree in her discipline would put more emphasis on teaching and learning for understanding rather than rely on contrived worksheets to convey the content meaningfully, but in the age of accountability under NCLB requirements, I had seen many strong teachers succumb to the pressures of high-stakes testing.

Yet, in Charles’ reflective words relating the current state of acceptable math instruction within the school, I feel that Charles acknowledges a cognitive choice that he needs to make in assuming his role as the classroom teacher. From my position, he had two options. He could opt for a more comfortable and familiar teaching style through the use of the textbook teacher’s manual and the district curriculum guide, or he could carefully consider the present knowledge of his students as the basis for his future instruction as he tried to create inquiry-based activities that could lead to meaningful learning. Based on his past teaching episodes in the Autumn Quarter
experience, I admittingly was concerned with Charles’ proclivity for preformed
lesson plans and his use of prefabricated resources without thinking of their
appropriate use with his students. Within his initial unit and lesson plans, I could see
glimmers of the same issues beginning to resurface.

Charles’ Developing Classroom Practice

In Winter Quarter, the preservice teachers were still required to submit their
unit and lesson plans to his or her university supervisor and mentor teacher at least
three days before the lesson was to be tried on any particular class. This was a
program requirement so that the preservice teachers could receive feedback and
supportive advice on the content and structure of their lessons. As a secondary focus,
the preservice teachers hopefully gain a higher level of confidence in creating lesson
objectives, designing lesson structures to support their objectives, and assessing the
levels of student performance, but again, I was hard pressed to find any evidence that
Charles was able to use or incorporate the feedback I had provided.

Prearranged curriculum versus teacher independence.

According to the mandates of the district curriculum guide, Charles’ first two
weeks of teaching was to review the basic concepts of solving first degree linear
equations and graphing their representations in the coordinate plane. Having had
some experience relating graphing to students in his Autumn Quarter experience,
Charles felt he was comfortable with the content and could relate his understanding to
his students with little to no problem. Yet, in the procedure section of his first week of lesson plans, I contradict his pedagogical approach as being too far below the students’ current ability level,

*I sense in this set of plans that you are making the HUGE assumption that your students know very little about graphing. Do you need to start all the way at the beginning? It seems as though your first worksheet that you plan to use is really aimed at a seventh grade (or lower) audience. What could you do with the students to make this more of a review of terminology and get them to tell you what they already know? Think about how many times that your students have seen this content. My guess is that they started to see the x- and y-axis and coordinate plane in sixth or seventh grade. How dull would it be for your students to learn this in the same way year after year after year (US, Winter lesson plan feedback, week 1)?*

From his first week of teaching, I tried to interject my own thoughts and suggestions for making his classroom more interactive. By using the knowledge that exists within the room, I tried to illustrate to Charles that honest teaching respects the students as learners and builds on their current understandings. However, on a secondary level, Charles was following the lead of what he considered to be one of the main authorities in how his lessons should be presented, the textbook. I tried in two separate debriefing sessions to give illustrative examples of how concepts of graphing have been building within the curriculum since the students’ early middle school years, but without a working, first-hand knowledge of the span of the algebra
curriculum across the secondary spectrum, I feel Charles did not have any confidence in what I was trying to get across. His mentor was feeling the administration’s pressure to follow ‘The Guide’ and increase test scores, and relying on traditional means was one way to meet the goal.

In a sense, I indirectly tried to support a fledgling faith in his own abilities and his own thinking in his unit and lesson planning, but my words and suggestive questioning stood in direct contrast to the order and activities the official ‘authorities’ that Charles was using in his planning. I even led a small group discussion activity comparing and contrasting the number of learning objectives that could be met with traditional lessons versus non-traditional, student-centered lessons. But, the textbook and district curriculum guide had ordered and sequenced the lessons and objectives for him. I had seen too many preservice teachers across the past three years default to the textbook-mandated ordering of content that had been used on them in their secondary school experience.

I uncomfortably took his actions to be only an uncomfortable reaction to doing too much too soon and a strong avoidance of being met by student resistance at his attempts to change the prescriptive path the course was following (Charles, Winter reflection, #3). I had initially hoped at the beginning of the quarter that with more experience with his students, his own thinking would emerge, and Charles would allow his own thinking and understanding to dictate the direction his lessons should follow.
I, too, offered my own thinking as his supervisor in my reflection feedback to drive a reflective wedge between his own thinking and his preconception of curriculum materials. *Trying delicately to not be overly directive, I tried to lead him to see the artificial and suggestive nature of the documents.*

*I think the operative word, here Charles, is Curriculum GUIDE. There are some very good activities in the guides, but there are also a lot of time wasters that may have no relevant meaning for your students. But, we have to get over the mentality that we (as teachers) can learn to teach from reading a teacher’s manual! How many of the teachers you [work with] have a conceptual understanding of the content they teach? Could this be part of the problem?* (US, Winter reflection feedback, #3).

*In this articulation, almost persuasion if you will, of my own beliefs and some probing questioning, I try to get Charles to consider his submitted plans and his work in light of his current developing understandings about how students best learn and the actions of his colleagues. In my use of questioning, I attempt to push Charles into a critical examination of the resources many teachers around him have taken as gospel. My goal was for him to be his own thinking teacher. I tried to push Charles to use his own thinking and knowledge of mathematics to tailor his instruction to the needs of his students, and further to get Charles to accept and to wrestle with the cognitive dissonance that I continued to notice arising between his words and his actions.*
This previous reflection excerpt does demonstrate an initial acknowledgement of the discrepancies between what he considers to be more engaging and meaningful mathematics instruction driven by student-centered activity and the classroom realities of delivering content through a predominantly tell-show-do framework. *I felt that this initial recognition of the gap between how he wants to teach and what he will be able to do is encouraging in terms of his developing teacher reflection and is illustrative of his taking ownership of the classes he had been assigned to teach. For, in order to begin to create an action plan toward creating meaningful change in his classroom practice, he must first initially understand, and then reflectively acknowledge the cognitive dissonance he was experiencing.*

* A willful deferment of power.

Unfortunately, however, I watched Charles turn a blind eye to the blatant discrepancy. While he did admit that there was a difference between his beliefs and the pedagogies put into practice by the professionals he sees in action every day, his peers in adjacent classrooms gave the impression of meeting unit objectives and progressing through the pages of the textbook and curriculum guide. Thus, with forward progression through the textbook being the only demarcation of student learning, Charles saw no reason to adjust the current practices being put into place. There was no cognitive reason to rectify the two opposing forces at work in his mind. I witnessed Charles relinquish his initial beliefs for what constitutes effective
teaching and learning in favor of the teacher-driven, process-oriented pedagogies that were in place upon his arrival at the school.

I am pretty sure that Dr. S. would support me in however I decide to go about my teaching, but I am a little nervous about changing how the class is taught. I really don’t see myself handing out one worksheet after another, but I don’t really want to bring upon a huge change in the class. I am just afraid that I will be bored using this format (Charles, Winter reflection, #3).

I feel that this deferment of his personal beliefs stemmed in part from some cautionary statements that I had made in a written reflection earlier during his Winter Quarter orientation phase. When considering ways that he could implement his own teaching style, I did caution not to

Change too much in the class too quickly. Too much change at one time often meets with hostility and frustration from the students. You are going to change the rules of the game [of school] on them, and they are not going to be happy with this. Rather, think of small and incremental changes that you can possibly make during your week of exam review. Try some open-ended questions when you are working with their small groups. Try to build success for them in your way of teaching. With some small changes, allowing them to have some fun with math, and experiencing some positive feedback and success, they will be much more willing to come over to your new methods of teaching (US, Winter reflection feedback, #2).
In my responsive feedback, I was trying to be empowering and show a possible course of action by implementing small incremental changes over the course of his six weeks. Of course, my plan of attack was not as prescriptive and easy to create as hitting the copy button on the departmental photocopier, but it was nonetheless a possible pathway for him to investigate. In leading his students to some small degree of success and instilling some feeling that they CAN do and CAN think, I tried to impress my own experiences in testing the boundaries with students’ comfort level with change. But, I realized that he needed to make the choice himself. I needed him to come to the realization that the day-to-day interactions between him and his students could be different and more meaningful.

Charles’ struggles in attempting the non-traditional.

I was elated when Charles used some of my ideas and some of my feedback in his first week of lesson plans. “Yes, Charles, this type of lesson is EXACTLY what I have been talking about” (US, Winter lesson plan feedback, week 1). Within his unit on linear equations and graphing, he attempted to implement a reform-based lesson in which students relate the information contained in a broken line graph through stories that they create. To my dismay and to his frustration, Charles’ lesson was not well received. Realizing that this activity was very much different from filling in blanks on a worksheet, the students began to shut down. I noticed that the students in his classroom were unwilling to try, unwilling to participate, unwilling to take a risk. They created a multitude of distractions to draw Charles’ attention from the lesson
and vocalized their lack of interest in his attempts to engage them (US, Winter observation notes, lesson #1). Sitting in the back of the room observing his lesson and feeling very much the role of the conspicuous outsider, I began to watch both Charles and his problem-based lesson unravel. I also began to think about what the students were doing and why they were doing it. It was as if they had learned the coping strategies for ‘just getting by’ within the fill-in-the-blank instruction they were used to coping with, and knew that if they continued to voice their opposition and resistance, they would get their way, and they did.

Rather than finding more positive ways to deal with the additional distractions, the poor attitudes, and further discipline problems that arose out of his non-traditional lesson, I witnessed Charles withdraw any personal connection to his actions as a classroom teacher, and the small, initial sparks of interest and enthusiasm I had read and noticed at the beginning of the quarter were quickly extinguished. In a lesson that I feel could have held the kernels of initial success with additional structure and scaffolding from Charles, he withdrew the small changes he had tried to implement. He scrapped his activity-driven lessons, and reverted back to Dr. S.’ style of content delivery that focused on processes. It was as if he hit a brick wall, dusted himself off, and said ‘this is too hard and too risky to change.’

Charles’ retreat to the security of the traditional.

This conscientious deferment of his own beliefs and his willingness to follow the processes initiated by others established a choke hold on Charles’ reflective
development and his emerging development as a teaching professional. \textit{I felt that once his retreat was set in motion, the students had known that they had won.} In the face of a teaching style that required their active participation and retention, they had voiced their defiant opposition. \textit{Additionally, feeling that his was the subservient position in the classroom and the fear that can accompany a classroom spiraling out of control in front of his mentor teacher and his university supervisor, Charles had given the students what they wanted and returned to the curriculum guide worksheets later in his first week.}

\textit{In the midst of the lesson I observed, I figuratively saw Charles' faith in his own thinking squashed and saw him succumb to his own fears. He waved the white flag, and I felt helpless to do anything about it. I felt obligated to follow Charles' lead since I had made the personal pledge to each of my participants that I would support any classroom action they would deem necessary. Yet, I somehow hoped that I would be there when he would cognitively acknowledge the futility and frustration that was inherent in his classroom actions.}

After this first scheduled observation of the quarter and a tenuous first week in front of the students, Charles’ tension and frustration reached an unprecedented level. The end of my first week of teaching could not come soon enough. Though I enjoyed the week in the classroom, it seemed like one of the longest weeks of my life. I quickly found out that the students were no where near the level I need them to be, and I had to readjust my plans each day. I had to cancel the graphing calculator stuff I had planned because I didn’t have enough time to
get through the ideas I wanted to. I basically had to spend the entire week showing them how to solve equations. I really can’t believe that these students are so far behind. It seems to me that the only way that these students could be so far behind is because of the teaching (Charles, Winter reflection, #4).

When I read this reflection on his first week of teaching, I felt a tinge of guilt since it was my insistence that he do something different, but I also thought that together, we may be able to turn the situation into a positive if I could compound the effect of some of my next set of observation notes to push his contemporary thinking by pointing out some of the students’ actions and reactions to his teacher-driven style. On a deeper level, I also wanted him to realize that he bore as much responsibility for his students’ learning as the middle school teachers he was attempting to blame for their poor performance and low retention.

The following week during a quiz review, I noted that Charles took his natural position beside the overhead projector and filled the screen with an unorganized mess of graphing terms, function mappings, and example problems. Yet, while Charles did his best to provide hints as to what would be on the quiz the following day, two students are permitted to sleep during the class, three girls near the back of the room talk about the outfits they plan to wear to a party that night, and one distracted male student feels empowered enough to solicit phone numbers from the two girls sitting behind him (US, Winter observation notes, lesson #2).

In our discussion immediately following his review for the following day’s quiz, Charles was naively unaware of all that was going on in his classroom. At first, I
thought this was only natural since many preservice teachers fail to notice the wide
range of student actions within any given class only two weeks into their daily
teaching experience. But, at the same time, I needed to make my point; the teacher-
driven pedagogies that he had selected were only contributing to the problems he was
facing. Even if his first attempts had met with dismal results and student rebellion, I
still wanted him to keep trying.

That is not to say that Charles made no attempts to pull their attention to his
objectives and example problems within the lesson. Earlier in the review, “[Charles]
wonders why the students are so overly active and off-task today. He gives them one
minute to stand up, exercise, jog in place, fidget, squirm, talk, and get some energy
out” (US, Winter observation notes, lesson #2). Most of the students complied with
Charles’ unorthodox reaction to their disinterest and off-taskness, and the noise level
within the room did drop allowing Charles to progress slightly with his quiz review.
However, the successful behavior modification was short-lived, and Charles seemed
at a loss for any plausible solution to sustaining the attention of his students beyond a
timeframe short of making threats to assign more homework, threats of
detentions, and threats to removing students from the classroom.

Again, I thought of Charles’ retaliations with the students as natural
reactions based upon his past history with math teachers focused on processes and
his previous experiences relating content to students in traditional formats. Yet, I still
could not get Charles to recognize the connection between his choice of pedagogy
and the students’ disinterest. Even with my evidence and my lesson plan ideas still
fresh in his mind, he still viewed traditional instruction as a model for teaching since he had learned so well within this framework. Citing the rationale for his conscious choice to copy his mentor teacher’s style as simply, “She [Dr. S.] must have a reason for teaching the way she does, but I am just not sure the endless amounts of worksheets are the answer” (Charles, Post-observation debriefing, lesson #2), Charles reluctantly, yet willingly and unquestioningly, accepts a business-as-usual style in assuming control of the Algebra I classes he has been assigned to teach. This echoes the stifled disposition for the “obligation to mimic” (Charles, Autumn reflection, #7) the teaching style of his mentor teacher that he adopted during his Autumn Quarter field experience.

Charles Abandons His Vision

This excerpt stands in direct comparison to the vision of his future classroom articulated in his Initial Writing Sample when he recounts that he “never liked the routines of high school,” and wanting to use, “interesting activities that would help the students learn” (Charles, Initial Writing Sample). This accepted disposition also establishes a pronounced uncertainty in asserting his own power in the classroom and in making pedagogical decisions that best serve his students. I honestly could not understand his reliance on traditional methods. He had, weeks before noted in a reflection that “the students are bored and don’t care” (Charles, Winter reflection, #3), but Charles repeatedly made the cognitive choice to continue the same practices.
It seemed the issues of subjugation and fear were more than I could help him overcome.

Living in the shadows of routine.

At this point, after two scheduled classroom observations that were not too successful in terms of student engagement and student learning, I could have placed a requirement upon Charles for planning and creating a conceptual or activity-driven lesson for the following week and my following week observation. But, I felt that this would be counterproductive. I had to balance my support of his efforts with my instinct to be confrontational, and I could not risk jeopardizing the validity of my study by acting as a puppet master. Charles had clearly demonstrated to me that he was still thinking of the classroom as a student. He was still operating within the mindset that was driven by grades and positive evaluations. He continued to view my observations and our debriefing as evaluative rather than supportive. I felt that any additional responsibilities that I would place upon him would be viewed as punitive consequences rather than opportunities for growth. Plus, following my own developing understanding of coaching preservice teachers rather than controlling them, I knew that any meaningful realization had to come from Charles rather than being imposed upon him. This, however, did not stop my comments and feedback from highlighting discrepancies that could lead toward his vision rather than working against it.
From a four-legged stool positioned at the front of the classroom beside an overhead projector, Charles daily tried to lead his students in the established routine of reviewing homework, taking notes from a lecture, copying sample problems from the overhead screen, asking low-level questions of the students that focused on completing steps and processes of solving equations, and attempting homework from their Algebra I worksheets and textbooks (US, Winter observation notes, lesson #3). The unit on graphing linear equations had been planned for two weeks, but was now beginning its third. I continued to interject my own thinking and offer my own perspective in trying to get Charles to acknowledge and to wrestle with the issues of making the content more engaging for his students.

As I noted in my observations of his third lesson, many of the students continued to be preoccupied with passing notes to their friends, sending text messages on their cellular phones, or sitting blankly in their seats focusing on the sweeping minute hand of the classroom clock (US, Winter observation notes, lesson #3).

*If we made this more relevant to their lives, rather than keeping it in abstract x’s and y’s and subscripts that are confusing to them, would this help them to get it? What would happen if you gave them a contextualized problem that requires the use of these representations of slope and simply said ‘figure it out’? Could we have them create something that relates all of the slope concepts that you are showing them rather than having it this dry and irrelevant? (US, Winter observation notes, lesson #3).*
In what I was becoming to believe was the norm in his class, the students seemed unfocused and uncaring about the ideas that were being presented and demonstrated for them.

As the last minutes of class ticked away, only two students in the room, those seated closest to his overhead projector, remained focused on the lesson and able to complete a small portion of their homework worksheet. Over half of the other students folded their assignment and placed it in their back pockets; the rest crumpled up the paper and threw it in the trashcan on their way out the door. After the last female said good-bye to Dr. S. and left the room, Charles collapsed onto a student desk near the classroom doorway, heaved an exhaustive sigh, and placed his head in his hands. This reaction appeared to me as a physical manifestation of the internal frustration he was experiencing in this field experience. In allowing Charles the freedom to default to the teaching style of his mentor rather than assert his own teacherness in her classroom, the incongruence was beginning to take its toll physically and emotionally. Upon seeing his frustration in such a way, I felt I did share some blame in Charles’ current dilemma; I did allow Charles to continue teaching the way he did. I did not like it, but I did allow it.

Fanning the flames of cognitive dissonance.

My attempts to problematize Charles’ current classroom practice with my delving questions and feedback met with little to no success. I fervently wanted each of my participants to know that they had the freedom to do what they wanted. I had
emphasized many times in our discussions from Autumn Quarter teaching takes on many different forms with different student populations. Yet, when directly confronted with unsettling issues that arise naturally from the work of teaching, I now realize that it is only the preservice teachers who have the power to change what they were doing in their classrooms. I began to see my role as offering suggestions and assistance along the way. In putting the tough and uncomfortable questions directly in their line of sight, I put the spotlight on issues and events that they would not have normally noticed. I was the one who dared to pick up the rock to see what was lurking underneath. But, again, the university supervisor cannot plan, teach, assess, and reflect for the preservice teachers we are charged to develop. To further his professional development, I honestly felt that Charles must personally accept the cognitive dissonance that arises out of their classroom practice and actively seek ways to relieve it. I felt it was his responsibility to make the changes and reconcile the differences to what I was pointing out. I did not force him to respond to the questions and my reactions that arose out of what I read and observed and offered to him in my feedback. Working with graduate students, I felt I should not have to.

However, in our debriefing sessions and throughout the latter written reflections of the quarter, I noticed Charles becoming more defensive of his classroom actions. Further, it seemed that he formulated excuses and began to see his problems in the classroom as inherent problems within the students themselves.

The problems I am encountering stem from the students. They were supposed to be able to solve one-variable equations, and most should have been able to
solve two-variable equations, but fewer of the students in the class seemed to be able to use the prerequisite skills. It was really quite sad to see a high-schooler struggling to answer ‘what is 2*2?’ or using a calculator to figure out ‘what is 2*2+4?’ (Charles, Winter reflection #4).

_excuses come easier than reflective rationales._

On one hand, Charles had grown to be aware of the students in his classroom even to the point of acknowledging the discrepancy between his expectations and the realities of his classroom existence in both oral and written forms. Yet, he only shallowly searches for reconciliation to the open-ended questions that I throw in front of him. When responding to a structured reflection prompt regarding the learning gaps that are evident in his classroom, Charles cites that some of his students “just seem to be gifted” (Charles, Winter reflection, #5). I press him to go further in my response, “If we feel that all students can learn, as you mention in your previous reflections, do you feel it is right for a teacher to have such a dichotomous outlook on those who ‘can’ versus those ‘who can’t’?” (US, Winter reflection feedback, #5). In another written reflection, Charles considers his students’ daily moods as insignificant when he is trying to teach his lessons. _I again challenge the motivation of his choice to ignore his students’ feelings_,

> Is this just a ‘game face’ that you put on before each class? Do you feel that this may just be a survival tactic for teachers who do not see their students as
individuals or don’t want to deal with the underlying issues of classroom management? ” (US, Winter reflection feedback, #7).

Personally, I was growing weary of his shrugged shoulders, his blank stares, and his stock response of ‘I don’t know.’

As the weeks of the quarter dragged along for Charles and I and piles of snow began to accumulate so did Charles’ disillusionment. “I don’t know how to solve all of the problems my students are having, especially in the way they are learning algebra, but it seems to me that the system is failing them” (Charles, Winter reflection, #5). Dismayed at Charles’ reluctance to productively change any of his actions in the classroom and becoming more frustrated with his unwillingness to do something different, I offered more direct feedback.

I feel that this partially goes back to the tasks that we give them to do and the questions we ask them. If we continue to give them banal tasks or low-level thinking questions, and expect them to think mathematically, then we are only going to meet with defeat. But, again Charles, they are YOUR class. It is YOUR responsibility to address their learning needs rather than blaming fifteen other things! (US, Winter reflection feedback, #5).

While my comments here were more pointed, I felt justified in being more direct since the issue of his classroom ownership had not been resolved.

It seemed to me that the source of Charles’ classroom frustrations were not only limited to a meaningless and unconnected curriculum fueled by the completion of worksheets and direct instruction that focused on processes. Rather than accepting
personal responsibility for the students’ learning, resolving the cognitive dissonance surrounding his classroom actions, and demonstrating a sense of efficacy as their classroom teacher, Charles searched for fault for his students’ difficulties and disinterest in their poor attendance, their lack of motivation to learn and earn good grades, and an over-crowded secondary curriculum that he felt mandates the topics he needed to cover within a specific time frame. Even though Charles admits that “I have tried to keep and maintain Dr. S.’ classroom rules and discipline the students as she would” (Charles, Winter competency packet evidence, Item CSC&E #3), I couldn’t get Charles to internalize his difficulties and search for meaningful solutions. I was nearing the point of giving up. Responding to a written reflection in which I perceived Charles’ reporting statements about his classroom control difficulties began to border on whining, I allowed myself to vent. “Have you ever considered that it might not be the students’ actions that are creating the problems, but rather your reaction to them?” (US, Winter reflection feedback, #7).

Again, it did not surprise me to not get a reaction or response from my question. It was at this time that I honestly began to solidify my thinking as to why the multiple layers of reflection were not working to push Charles into any sort of personal or professional development. At first, as is my nature, I began to find fault within myself and my abilities as a university supervisor. I had worked with reluctant preservice teachers before, but none like this. I had previously hypothesized that Charles had become paralyzed in his development by his feelings of classroom inadequacy and by his own fear of what would happen if he brought about too much
change for the students. Yet, I continued my attempts to unravel the puzzle of Charles’ development, and I returned to the words of John Dewey.

Unsolved puzzles of practice.

In my own thinking about Charles’ written and audible reflection, I had responded and provided my feedback based on my reactions to his thoughts, but I had not thought of how he was viewing the task of writing his reflections. Clearly, Charles had struggled to succeed and, if my reading and research was correct, this difficulty should have stimulated some learning in response to the unfavorable conditions in meeting his goals. For, it is the way that these “puzzles of practice” (Dewey, 1933) are framed and reframed that stimulates growth and meaning. Then, it came to me. Charles was not framing or reframing his problems at all. He was merely reporting them and expecting some easy solutions or quick fixes to have lasting impact. I began to think of a direct link between the way Charles was viewing the mathematics he was teaching and the steps he was to follow to be viewed as a teacher by his mentor and his students. To him, his content was unproblematic and stoic, and I felt that this had spilled over into his field experiences.

As I tried to extend this line of thinking and investigation further, I came to understand that Charles clearly practiced reflection as a noun, a written product to submit for a compliance portion of his grade each week that perhaps took no more than thirty minutes out of his schedule. Charles did not see reflection as a verb, as an action, as something to spur his thinking, or as a means of finding deeper meaning.
Much like his other university coursework, “which were okay classes, but more or less just a bunch of unconnected busy work” (Charles, Focus Group Transcript), Charles’ weekly reflections were an item to check off his itinerary for the week, or another task to complete. Clearly, the acts of weekly reflection and internalizing the feedback received were doing nothing for him in terms of growth. In adherence to the program rules of following the schedule of structured prompts, he was fulfilling his requirement. Since I was aware of the multiple issues he was facing, I was honestly at a loss of how to make his field experience more problematic if he was unwilling to meet me halfway.

On a secondary level, I knew that I was not alone in my charge to help Charles develop as a classroom teacher. The lack of initiative to resolve the dilemmas of Charles’ classroom practice may have also been hindered by the continuous classroom presence of his mentor teacher and the impersonal relationship between them. Rather than giving Charles his own time in front of the classroom and to develop his own independent teaching style, Dr. S. remained a constant presence in the room staying seated at her desk during each day of Charles’ field experience. Even though Charles began to show small glimmers of progress in the later weeks of winter, “It falls on me to find a way to reach out and bring the students back into the class and not to allow them to opportunity to be a disruption or be disengaged in the class” (Charles, Winter reflection, #8), any disruption or digression to the flow of his lessons was never allowed to reach a critical point of action before Dr. S. would interject her own stern, yet culturally responsive, way of reigning in the students to
get them back on task. In trying to act as she would, rather than as he should, I feel that Charles was sending implicit messages to the students in the room that undermined his authority in their eyes. “If [Charles] could not see and use his own power within the classroom, then there is little to no way that the students will come to view you as an authority figure in the classroom” (US, Post-observation debriefing, lesson #4).

One last attempt at student-centeredness.

During his final week of teaching both morning algebra classes, and at my insistence, Charles made the commitment to move in a different direction with his teaching. While I had made such suggestions all along, I felt that this move in the late days of Winter Quarter was a conscious move on Charles’ part after he had sensed my growing displeasure in his reflection feedback and previous lesson observation notes. Building off of a small group discussion I had led on structuring and implementing alternative assessments in secondary mathematics the week before, Charles finally seemed motivated to head in a different direction. Although, at this point, I was sure that the upcoming end of quarter assessment of his teaching performance had some bearing on his decision.

On the first days of his final week of teaching, Charles began teaching in his usual way.

I asked around the school math department trying to find something interesting to do to introduce the point-slope form of a linear equation, but
everyone I talked to seemed to believe that it was just plug-and-play, a
formula that the students would have to memorize. As a result, I just gave
them an overhead with notes and some examples of what point-slope form is.
It seemed that the students in the class really could not care less, and I am not
sure that I blame them” (Charles, Winter reflection, #9).

Borrowing an idea that Dr. S. had used the year before and basing his teaching
decisions on the reactions he received from the students were small steps in a positive
direction, but Charles attempted to recreate the activity with little consideration to
the additional layers of support and assistance he would need to give for his students
to be successful (US, Winter lesson plan feedback, week 9).

The task was an alternative, open-ended, summative assessment for the linear
equation unit it had taken nearly six weeks to complete. The multi-day project asked
the students to draw pictures illustrating the use of slopes, to write about the
application of linear equations to their own lives, to create a rap or poem that would
help them to remember the critical characteristics of slope, and to create their own
contextualized problem that could be solved by using linear equations. While this
project was intended to generate interest in its creation and to address multiple
learning styles within his class,

I was quite surprised with the resistance that I met with this project. My
intention was just to allow the students that are doing poorly the opportunity
to boost their grade and hopefully learn a little more about the mathematics
involved with slope, but most of the students really don’t care that they are
failing the class, and after some of them get a project grade of F, I really don’t think that they are going to have a chance to pass the class (Charles, Winter reflection, #9).

This cumulative class project, and the subsequent reflection it prompted, had the potential to signify a turning point in Charles’ reflective development during the Winter Quarter. I so wanted him to experience some positive impact for finally taking this level of risk, but again, I was let down. Charles chose to present the assessment to the class in one enormous chunk of work rather than its separate pieces, and the requirements for its successful completion were never clearly articulated. Additionally, Charles provided limited classroom instructional structure that would ensure the successful completion of in-class group work. Within the whole-class instructions I witnessed for the completion of the project, Charles’ sarcastic undertones undercut the supportive environment necessary for students to apply and create (Charles, Winter observation notes, lesson #5).

Even though “this was the most natural and unscripted that Charles had ever appeared when delivering his lesson in front of a classroom in two quarters” (US, Winter observation notes, lesson #4) that I had been working with him, only a small percentage of the students submit their work for evaluation. Charles reluctantly admitted that “it almost seems that it would have been more beneficial to just have a couple of lectures on the things that are giving students trouble” (Charles, Winter reflection, #9). While I feel he reflectively realized and addressed the need to provide students with more engaging opportunities for learning, his rationalizations for why
the assessment did not meet his expected results returned to the students’ prevailing attitude that “failing is acceptable to them and they realize that school is not important” (Charles, Winter reflection, #9). Thus, Charles, again, refused to examine his developing classroom practice with a maturing teacher’s mindset. My hopes for positive change and momentum to carry into Spring Quarter had been dashed.

As Charles prepared to leave his winter placement, I took whatever scraps of progress that I could piece together to justify that some good had happened in his time at Bordertown High. Pouring back through his reflections, lesson plans, and debriefing transcripts, I took little comfort in that Charles did begin to examine more reflectively his frustrations with his classroom teaching experience and the difficulties he experienced in the final week. Expressing gratitude for the experience in the urban environment, Charles shares his summary of what he would take away from the previous six weeks.

It is so frustrating because I really have not been able to reach out to some of the students. I almost feel like I have failed this quarter. I still feel like I have a lack of control in the classroom, and it seems that there are a number of students that don’t really respect my authority, or even me (Charles, winter reflection, #9).

In all honesty, I too thought he had failed. If I could have based a grade solely on my displeasure in his unwillingness to change or to try different things, or if I could have somehow docked percentage points for failing to recognize what I felt was so obvious, I would have. He had completed all of the program requirements, and
under the current rubric for grades that was in place during the entire academic year, I had no recourse or empirical rationale for lowering a grade or for shaving off percentage points. I had only my subjective opinion and bitter disappointment that he needed to take more direct ownership of the experience instead of performing for someone else. I wrestled with my own decision to grant him a passing grade as trying too hard to give him the benefit of a doubt, or that I was rewarding him for inaction based on a flawed system of compliance and percentages. To some degree, I was correct in thinking both of these things; yet, I still had hope.

Summarizing Charles in Winter

After two completed field experiences, I honestly had my doubts if anything I was sharing with Charles as his university supervisor was having any affect on his contemporary thinking. I did realize that the non-relationship between Charles and his mentor teacher was detrimental in establishing a comfortable classroom presence for Charles, but I was genuinely hoping for more growth over the quarter. I knew that I had pointed out countless disjunctions between the beliefs that Charles had articulated in his earlier reflections, but in this current placement, the field was not currently receptive to the seeds I was attempting to plant. The pointed questions I would direct at his classroom practice seemed only to belittle Charles’ self-esteem and self-confidence. In adapting a classroom persona that favored a path of what is viewed as easy for him to find and implement, he was truly teaching as he was taught.
I continued to attribute some of the difficulties he encountered to the lack of student effort, the cultural rift between the students and himself, and the constant classroom presence of his mentor teacher. I was able to find some encouragement at the end of the quarter as he makes initial strides toward personal accountability by admitting that

I don’t necessarily believe that it is the fault of the students. I could have done more to make things more exciting and real. I just wish that I had been able to find a way to motivate these students. I just feel that I haven’t done enough to show them the beauty of mathematics and how relevant the things we were doing could actually be to their lives (Charles, winter reflection, #9).

His final reflective words for Winter Quarter contained some strong and harsh truths for both of us to hear. As he was relating what he could have done, I too was projecting the same words onto the interactions that Charles and I had shared. Once grades had posted, there was no other recourse, other than knowing that he had disappointed me, and he had also disappointed himself. If this were normal circumstances within the cohort, he would be passed on to a different university supervisor and perhaps continue the same deferment and denial. However, we had one more quarter to complete together in the program, and I had ten more weeks to move him towards the teacher we both knew he could be.
Charles in Spring

The end of Charles’ Winter Quarter placement could not come soon enough. Dealing with unmotivated and uncaring students and feeling forced to adapt the teaching and classroom management style of his mentor teacher led to a tenuous classroom environment. Yet, with the change of quarters also came a change of field placements to which Charles and I both looked with joyful hope. Moving from an urban secondary school serving one of the roughest neighborhoods in the city, Charles was pleased to once again return to a suburban environment after learning he had been placed in one of the most affluent and well-established secondary schools in the greater metropolitan area.

The Context of Charles’ Spring Quarter Field Experience

Citing the benefits of an experienced and closely-knit faculty, abundant educational resources, and a dramatically increased sense of respect and motivation to learn from the student body, Charles’ initial impressions of his student teaching placement gave the impression that “I have again been given a great placement where I am going to have the ability to learn and have a great time” (Charles, Spring reflection, #1). Charles, as well as two other preservice teachers from the cohort, not included in this study, was quickly adopted by the pre-existing community of mathematics teachers within the building, and all three were treated to a departmental lunch by the math chairperson as a sign of welcome and good will. However, after hearing Charles’ glowing review of his new surrounding twice before, I anxiously
reserved judgment until I was able to see first-hand how much of himself he was willing to bring to his new classroom.

Last quarter, I didn’t notice as much collaboration between the teachers in the math department and it seemed like they for the most part did their own thing. I definitely think that it is a much more enjoyable environment when the teachers all get along and are so willing to help each other and share their materials and ideas (Charles, Spring small group discussion, week 1).

Paired with a mentor teacher who, “seems like she is going to be great to work with and willing to let me go on my own and do the things I want” (Charles, Spring reflection, #1), Charles seemed poised to break through the barriers he had experienced in the two previous placements “in becoming his mentor teacher” (Charles, Spring small group discussion, week 2) that had hindered the establishment of a reflective classroom practice that was consistent with his own belief system.

It was odd, but I seemed to notice the change in school environments almost immediately on Charles’ face and in his demeanor. I tried to convey to him that the slate had been wiped clean at the beginning of this new quarter, but just as handwriting impressions can still remain on a newly-cleaned blackboard, the vestiges of his difficulties at Bordertown still tainted my impressions of his glowing reviews. Nonetheless, I took the opportunity to steer Charles in a reflective direction in my feedback.

It seems as if your whole disposition toward teaching has changed since the switch. Okay, now, time to think deeper. Why is this feeling you have now so
different than the feeling at Bordertown? What are the causes for this school to be only seven physical miles away from Bordertown, but the two schools are separated by light years in terms of school culture? (US, Spring reflection feedback, #1).

Charles’ new placement school.

Douglas High School has served a continuously growing suburb of the city since its construction in the early years of the Twentieth Century. As decades passed and more businesses crept outward from their inner-city building headquarters toward the area surrounding the international airport that services the central region of the state, new classroom wings, buildings, and athletic facilities were constructed to meet the needs of the booming community high school. The math and art departments of the school currently occupy all three levels of the remodeled original building structure. Yet, surprisingly, as additions to the school were made, no attempts were made to reconcile the contrasting architectural styles of the separate pieces that comprise the school complex. For many years, the separate pieces that comprised the high school campus stood isolated from each other on the five acre property at the center of town. Today, the current structure is networked by a seemingly endless system of twisted narrow hallways, winding stairways, and porticos that do not easily facilitate the smooth, hourly passage of over two thousand students through its hallways.
The student population of the school is predominantly Caucasian, but minority groups are well represented due to a recent influx of Hispanic and Asian immigrant families to the suburb. While Charles could readily identify students in each of his classes from all socioeconomic levels, the school gave the impression of being “excessively average and middle-class” (Charles, Spring post-observation debrief, lesson #1). I initially took this to be a good sign noting the apprehension and preconceived notions that he had felt entering the Winter Quarter urban placement. I thought that Charles would be less ‘othered’ within this school, and may be able to relate more readily to the student population.

Being the only high school within this readily accessible school district and with the excellent reputation of the school’s mathematics department, the Field Placement Coordinator and Program Manager attempted to place preservice teachers in the district whenever possible. In fact, each member of the school’s math department had some level of interaction with preservice teachers from the university program over the past four years. I had personally worked with six of these secondary math teachers in my experience as a university supervisor, and each time, I was very impressed with the support and encouragement that the mentors were able to provide for the preservice teachers. In fact, I had borrowed many of the lesson ideas that these mentors so willingly shared with me as exemplary models of non-traditional instruction and assessment when other preservice teachers needed some inspiration for their own teaching or when they needed to see some examples of how the tenets of problem-based learning could be enacted within an actual classroom.
Charles’ new mentor teacher.

Charles’ mentor teacher, Ms. P., was a Caucasian female in her mid-thirties who had received her degree and licensure in another state, but had moved to the area with her husband nearly a decade ago. She currently had eleven years of classroom experience within multiple school districts. Blending her whimsical nature, her dry sense of humor, and a small touch of jovial sarcasm into her classroom practice and her interactions with students, I felt that her personality would be a strong complement for Charles’ wit as he assumed control of her first-year algebra courses and her slower paced remedial algebra courses. I looked for ways to blend his personality with the teaching style he wanted to develop citing her as an example to follow. I was pleasantly surprised at the close personality match that had been made by the Field Placement Office when such issues had not normally factored into their placement decisions.

Charles contemplates the repetitive nature of content.

After an initial week growing accustomed to the school culture, learning student’s names, and learning to navigate the maze of school hallways, Charles was encouraged by the structure that had been placed on the algebra classes he was beginning to teach.

I think it is nice that the school district does not place all freshmen in Algebra I. Instead, students that are not ready for Algebra I are put into a two-year course which allows them to work more slowly and develop some of the skills
that they may be lacking. Last quarter, everyone was lumped into the same Algebra class whether they were ready for it or not, and this is a problem because there are definitely some students who are not ready for Algebra I (Charles, Spring reflection, #1).

*I took this to be another green light for Charles as he prepared to begin his teaching once again. I knew from these words that I would not be hearing his woeful moans about his students’ lack of readiness for algebra, and this was one less viable excuse he could use.*

But, on the other side of this placement issue, Charles expressed a degree of boredom with the content he was assigned to teach.

It seems that I have been teaching the same class three different times. I have not gotten to teach anything beyond linear equations, graphing, slopes, and equations of lines. I know that this is important stuff for students to know, but I have had to teach these same ideas in each one of the schools I have been in. You just have to wonder how many times it needs to be taught until they actually get it, you know? (Charles, Spring small group discussion, week 2).

*I had not noticed this interesting perspective on the courses that Charles had been assigned to teach, and during a small group meeting in the third week of the quarter, I tried to steer the group talk to consider the impact of the repetitive nature of what could be considered the canon of secondary mathematics. Now that all of the preservice teachers in my group had gained some teaching experience at the middle*
and high school levels, I thought it was a fitting time for them to begin to question the structure of our discipline as a whole spanning seven academic years.

Why do you think our students need such a high level of repetition to the math they are learning? Are all of the topics that are included in textbooks still considered necessary for student success? What do we really need from our students to learn in an algebra course anyway? What can we do in our own classrooms to make sure that our students know their content well so that they don’t need all of this repetition across grades? (US, Spring small discussion group, week 2).

The discussion that followed was an interesting mix of opinions, each advocating for less redundancy and more learning for understanding.

Inconsistent beliefs inhibit classroom practice.

While we didn’t reach any definitive answers to the questions I presented, I hoped that our time together that week gave the preservice teachers a more critical perspective on the content they were to teach and the learning objectives they would have for their new students. However, I couldn’t help notice that in the presence of his peers from the cohort, Charles shared some ideas that were not mirrored in what I had seen him do in the classroom. “I think we have to give the students every opportunity to do what they can before we show them an official way to do it or a process to follow” (Charles, small group discussion, week 3). While I didn’t feel comfortable calling him out in front of his friends, I did have a near-choking moment
when he had voiced his opinion on how we should be teaching students to solve equations. Could this entire series of field experiences be nothing more than a game to him? This solidified my opinion that Charles would never get out of his student-thinking mode, not as long as he remained a preservice teacher and under the constant watch of others.

Immediately after our discussion session, I went home and filtered through my data set for Charles. Even though in previous quarters, Charles had expressed a specific interest to highlight what he called the “applicability of the mathematics that his students are learning” (Charles, Winter post-observation debrief, lesson #4) and had written a direct intent of wanting to “lead students to see the beauty of mathematics” (Charles, Autumn reflection, #9), but when juxtaposed with the classroom observations that I had made in all three quarters, I felt that Charles’ participation in our group discussion and the previous reflective passages alluded to an unspoken assumption that Charles holds about the nature of mathematics. Rather than leading his students to construct their own understanding of algebraic concepts through problem-solving scenarios that emphasize the communication of their own thinking and testing their own conjectures through inquiry, as he asserts in his developing philosophy of education (Charles, Fall reflection, #9), I began to wonder if Charles even knew what his words would look and sound like when put into place in an authentic classroom. Did he honestly think that the practice he was exhibiting was student-centered or problem-based?
In our history together, Charles’ classroom practice, as evidenced by his reflective writing and his past two field experiences, appeared to cling to a deep-rooted belief that algebra needed to be taught as a series of processes for which students must be ready to learn or to memorize in order to gain understanding. This was how he had learned secondary mathematics and had coped through four years of advanced mathematics. I could not believe what I was seeing or hearing. I was further frustrated with a selection of mentor teachers who looked well-qualified on paper, but whose classroom practice was so directly opposite to the constructivist perspective of the program, even if two of the three mentors that Charles had experience had been products of the same teacher preparation program.

Attempting to Understand Charles

I began to get a better picture of the duplicity of Charles’ existence within the teacher preparation program. Charles’ university coursework was not being reinforced by what he was seeing in his field placements. I feel that this only compounded the problems I was having in trying to get Charles to critically examine his classroom practice. Two contrasting viewpoints of effective teaching were being presented to him. The first was the academic view from the university, of which I was a proponent and supporter, and the second was predicated on the coping mechanisms that some classroom teachers adapt to make their career and life easier. Without taking the time to reflectively reconcile the opposing teaching philosophies operating around him, Charles was content to further defer his developing teacher thinking in
favor of lessons that are process-driven and pedagogies that rely on the teacher demonstrating rather than students doing.

While I had hoped that the change in schools and teaching assignment could signal positive change for Charles, I again was let down. I honestly wondered if there was any hope. My patience was wearing thin for Charles, but my new perspective into how the incongruencies within the program could conceivably be a detriment to preservice teacher empowerment seemed to explain what was fueling the duplicity I was seeing and hearing. I had tried in every conceivable way I could invent to push his thinking, and I felt with each scheduled observation that I was leading the proverbial horse to water. While I had no qualms with him personally, I felt insulted by his avoidance of the questions I had provided to spur his thinking further, and I felt totally alone in my efforts to get him to pour more of himself into his work. Yet, I somehow understood where he was coming from because I, too, had spent the majority of my field experiences and my induction years deferring my own teacher thinking and development in favor of practices that reduced my personal workload and simplified my teaching life.

Seeing myself in Charles.

My feelings of unsettled discomfort about Charles and his lack of progress kept me brooding about my work for the majority of Spring Quarter. In fact, it led me to further reflect on my own student teaching experience in the late 1980s and my own professional development. In fact, as a way to more fully understand Charles
and his actions, I dug through my personal files to find my field experience observation reports and my final student-teaching evaluation.

While I now consider myself to be a student-centered and problem-based teacher in my own right, I was sadly reminiscent as I noticed some low scores and some pretty harsh comments from my own mentor teacher and university supervisor. I had played Charles’ same game, only fifteen years earlier. These flashbacks made me somewhat grateful that I was no longer that same, uncertain, and insecure teacher that I was, but more importantly, I realized, almost in a burst of light, that preservice teachers cannot develop on a set timetable. Each of us must develop in our own time and in conjunction with the courses we teach and the students and teaching peers we encounter. I had seen glimpses of myself in Charles at various points throughout our time together, but none had been to this degree. I resolved to continue working with Charles and to continue offering questions and suggestions to further his developing sense of reflection. However, in this case, I felt the greater win was to plant seeds of encouragement and possibility in hopes of a more full harvest within his induction years.

As I continued to work with Charles, and consequently, treat all of my participants more as teaching equals rather than preservice teachers, I felt our relationship begin to develop. My work with Charles and my frustration with his lack of progress toward the realization of his initial visions of teaching had led me to be more reflective in my own path to teacherhood, and I came to reconsider my interactions with each of them. Although I saw little progress of Charles moving
away from the teacher-centeredness I had fretted and fumed about only weeks before, I inherently knew that my role as supporter and inquisitor would do more to help each of them in the long run than any punishment or consequence.

Charles Experiences the Dilemmas of Student Teaching

In two separate observed teaching episodes from his student teaching experience, Charles again demonstrated evidence of utilizing lesson structures that focused on students following processes, or completing routine tasks absent of relevant meaning. Yet, rather than rant and bemoan, I returned to calling his attention to the actions of his students and to funnel their words and actions back to him. Building off a previous lesson on scatterplots, Charles attempted to lead the students to understand the difference between positive and negative correlations between two related data sets. However, rather than using data sets that the students had collected or data relevant to the lives of his students, Charles photocopied problem sets from an older edition textbook to provide scenarios and data for the students. While the students were encouraged to “take notes and follow along, Charles continued to draw free-handed scatterplots of the data for his students and to answer his own low-level questions regarding the relationship of the two quantities” (Charles, Spring observation notes, lesson #2).

In a separate lesson, that he later self-described as being his least successful lesson from the entire sequence of field experiences, and to which I wholeheartedly agreed,
I basically gave a ten minute explanation and review of direct variation. Then, the students had a worksheet using some of the ideas of direct variation and some word problems that were supposed to lead them to indirect variation. The students had no desire to work on the sheet, and I spent most of the time wanting to pull my hair out because most of the students were talking about anything but math (Charles, Post-study questionnaire, item #10).

*The time-trap of student teaching.*

*With such an increase in responsibilities throughout the school day that he had neither seen within the program nor remembered seeing in his teachers from secondary school, Charles, like so many preservice teachers before him, fell into the time-trap of student teaching. I had seen this happen repeatedly in my four years supervising and expected its arrival in week five of Spring Quarter when preservice teachers begin to buckle from the constraints of time and the pressures of keeping up with the job. Charles had begun to demonstrate a propensity to implement teaching strategies that were most easy for him to create and implement. While I sensed that he had shown evidence of this in Autumn and Winter Quarters with only one class to teach, the pressures of teaching five classes only compounded its effects.*

Charles did recognize this tendency in one of his weekly reflections, but he did not attempt to rectify his actions or search for alternative solutions.

When I was teaching only one of the preps, I can definitely say that I was more comfortable and confident in my teaching, but I never really thought that
taking over the second prep would be as difficult and require all of this extra
time. The first thing that goes when I feel like I don’t have time is what little
bit of creativity that I do have. It is just easier to use the book or to run off
worksheets. That may not really be what I want to do, but they are already
made and making worksheets or activities for two preps just takes so much
time (Charles, Spring reflection, #4).

I felt, here, that Charles’ false sense of comfort and confidence during the lesson
came more from his perception of being able to control the classroom than from clear
evidence of student learning. Yet, I honestly felt that I couldn’t blame or rebuke
Charles for actions that I too had taken as a means of coping and survival, but I did
applaud his honesty and integrity in trusting me with his authentic thoughts and
reflection.

But, after a couple of semesters or years, you do start to build a resource file,
and this takes away, or at least alleviates, the time of creating new things for
each lesson. You are making some big steps toward positive growth, Charles.
Thanks for trusting me (US, Spring reflection feedback, #4).

Direct instruction is just easier.

I also began to notice signs of reflective growth and independence when he
openly began to share his own ‘dirty little secrets’ of his own classroom practice
around our small group discussion table. While it took a great deal of courage for
Charles to confess to the realities of his classroom practice, Charles reluctantly admits to his peers within a small group discussion that,

I like to do the group work occasionally, but mostly the direct instruction is easier for me. I don’t have the time to put all of that into it. It’s not what I want to do, but that’s what I wind up doing. It just seems easier for me to use the direct instruction (Charles, Spring Small group discussion, week 4).

Charles’ slow, but encouraging progress did not keep me from suggesting that he implement lessons that were more engaging and interesting for students, and it did not stop me from pressing him to critically think about the effects of his instruction on students.

In American culture, and in education as American’s have defined it, have students been conditioned that they do not need to take a responsibility for their own learning? Have students come to rely on their teachers (or you) to tell them everything? (US, Spring reflection feedback, #5).

Yet, Charles continued to implement strategies that were comfortable and easy to create for him. Attempting to rationalize his choices, Charles simply stated that I did try in both classes to do some self-guided and constructivist-like activities, but many students lack confidence and getting them to think on their own is difficult, but I definitely feel like I at least tried to get them to do it however (Charles, Spring competency packet evidence, item C&I 4).
Imposed policies versus invented practices.

With little to no inclination to define and implement his own teaching style in either his Winter Quarter or Spring Quarter field experiences, Charles also experienced a continuous struggle with the difficult task of rationalizing and accommodating classroom policies and practices enacted by his mentor teachers rather than reflectively developing and adapting his own thinking to his actions in the classroom around him. This was most clearly evident in his struggle to cope with a homework policy implemented by his Spring Quarter mentor teacher and his attempts to gain organizational structure as the ‘traveling teacher’ within the department.

In what I perceived as additional signs of reflective growth, Charles began for the first time to deviate from the structured reflection prompts issued by the program and decided to address some of the questions and issues he was struggling to address on a daily basis. “As this quarter has progressed, I have definitely decided that there are some things that I am doing, because they are what was happening when I took over, that just do not work for me” (Charles, Spring reflection, #6). Though this initial sentence of his written reflection acknowledges the cognitive dissonance between his daily classroom practice and his personal beliefs, the paragraphs that followed steadily progressed into a reflective vent about the amount of time it takes him to grade and the less than stellar quality of his students’ submitted work.

Again, Charles faces a serious consequence to uncritically accepting the classroom routines established by his mentor teacher. Given the homework policy of his mentor teacher in which all homework assignments given during the week are due
and collected on Fridays, Charles laments the loss of his personal time and the opportunity to put some of his own ideas into place.

I really don’t like to look at all of the homework papers; it takes too long to actually look at them and grade them properly. When fifty-some students turn in 3 or 4 homeworks at a time, it turns into a grading nightmare! If the students were putting forth the proper effort, I believe that I might possibly be able to cope with the time issue, but the crap that is being turned in is just not worth the effort that I am putting into it. While some of the ideas that I am using make sense and will probably be used in my future classroom, I just wish that I could find a good solution on how to handle homework better (Charles, Spring reflection, #5).

But perhaps, I felt the largest step he had taken up to this point was contained in his last sentence of this weekly reflection. “Just out of curiosity, how did you handle homework when you were teaching? How did you grade it? Did you go over it? Any suggestions before I pull out my hair?” (Charles, Spring reflection, #5). In this one turn of phrase, Charles extends a direct question to me as his university supervisor. While the other preservice teachers in the study had been including questions for me within their reflections in hopes of receiving a story or insight from my own experience, this was the first time Charles had broken his cycle of simple reporting statements in hopes of getting some resolution or alternative suggestions to one of his problems of practice. I thought Charles had extended a hand to make his reflection a communication instrument between us, and I graciously accepted.
I feel that a further complication to the establishment of Charles’ personal teaching style and a classroom presence was the lack of an actual classroom. Ironically, in this school of haves, the current school facility did not have enough individual classrooms in the remodeled math and art building to accommodate the number of teachers. Thus, each year, one member of the math department was assigned to be the ‘traveling teacher.’ Each day, this teacher would move between three separate classrooms in two separate areas of the school campus. Through no fault of his own, Charles’ mentor teacher was assigned to be the ‘cart lady,’ and he inherited the three-tiered audio-visual cart that was to become the organizational equivalent of his classroom teacher’s desk when he assumed his teaching responsibilities.

I think that the Spring Quarter placement worked against my personality. Having to use the cart and make sure that I have everything on it that I need to teach was really hard. I think it highlighted how unorganized I really am. It turned into a nightmare trying to keep track of everything. It really did highlight my weaknesses (Charles, focus group transcript).

Again, instead of trying to explore different strategies for organizing his teaching materials and students’ work, he reluctantly adapted the organizational structure of his mentor teacher and tried to cope with the perils of not having an individual classroom. The lack of a personal space to call his own gradually became a rational excuse to fall back on the comfortable tell-show-do teaching style he had adapted in his two previous placements.
I almost wish that I had been in a classroom where I could have basically spent the whole day. I really feel like this held me back from doing some of the things that I wanted. I didn’t feel like I could set up the room the way I wanted. I just did not want to have to move things around with me from room to room to room to room. I was going to try some things with calculators and the laptops, but when I started to plan and make my presentation, I realized that it would just be more stuff that I had to load on my cart and keep track of. I was not sure that it was going to be worth the extra hassle (Charles, Spring reflection, #7).

Struggles with classroom management.

In addition to the difficulties Charles was experiencing in terms of lesson delivery and developing his own classroom policies and procedures, classroom management was also a difficulty for him. While he was able to establish initial levels of rapport with each of his classes,

Some of the students in my morning classes and I have a clash just about every day. There are just many kids in the class that think they are privileged and are basically not doing anything, and getting less that stellar grades, which is my fault at least in their eyes (Charles, Spring reflection, #6).

While Charles admittedly tried to “maintain the rules my mentor teacher had in place since August and follow the overall school rules” (Charles, Spring competency packet evidence, item CSC&E 3),
It amazed me how kids will lie right to my face and tell me about the things that they feel they should be able to do in Ms. P.’s room and how unfair it is that I am disallowing things that I know have always been against the rules (Charles, Spring reflection, #4).

Almost daily, Charles would have issues with students coming late to class, listening to iPods during class, and abusing the relaxed bathroom pass policy - all of which were not his own personal rules, but the policies enacted by his mentor teacher and the school administration. “It feels that almost every day they are testing me in some way, and with some students, it has been a battle since my first day” (Charles, Spring post-observation debrief, lesson #3).

With so many issues going so awry in his classroom, it was becoming so evidently clear to me that Charles would not be able to develop into the teacher that he had wanted to become as described in his Initial Writing Sample. Even though I tried to stir the cognitive dissonance around him through my questions and my feedback, I was only recently beginning to see some small glimmers of Charles using his experiences and his reflection to push himself in new directions. After almost an entire year within the program and through three complete field experiences, Charles had demonstrated an overwhelming disposition toward teaching that focused on teacher-centered lessons and symbolic manipulation. He had clearly demonstrated a preservice teacher following the path of least resistance by adapting a style of teacher thinking that relied on policies and frameworks that had been prefabricated.
and were polar opposites to the personal beliefs that he espoused during the early stages of each field experience.

Charles’ Epiphany

That is, until Charles was able to reach a moment of epiphany in the final weeks of his student teaching experience during our post-observation debriefing. After observing a lesson in which Charles never moved from his stool beside the classroom overhead projector as he led his students through a packet of photocopied worksheets intended to lead the students to find a mean and median from a histogram, Charles readily admitted that most of the students in the class were off-task and had not met the learning objectives for his lesson. “I don’t really think that any of them got it today. Most of them were bored, and I can’t really say that I blame them” (Charles, Spring post-observation debrief, lesson #5).

I don’t like the teacher I’ve become.

I noticed Charles acting different that day; he seemed more pensive and subdued with the students in his class as I observed. I admitingly was not too happy seeing another lesson based on generic data and worksheets. After a short discussion in which I may have been a bit too emphatic in listing a plethora of alternative teaching strategies he could use to teach the same content in ways that would engage the students’ interest and a few minutes of silent reflection, Charles raised his lowered head, looked his university supervisor in the eye, and admitted with a squeak in his
voice, “I don’t like the teacher that I have become” (Charles, Spring post-observation
debrief, lesson #5).

*At that exact moment, the conversation between preservice teacher and university supervisor took on a more serious and personal tone as the two of us emotionally exchanged our views about Charles’ developing classroom practice for nearly an hour. While I still do not feel comfortable sharing publicly the raw emotion that transpired between us,* he summarized his thinking in his weekly reflection submitted the following day.

I had a vision of the things that I wanted to do and ideas of things that I wanted to try. I was definitely planning on doing different things, activities and handling the classroom situations differently than I ended up doing it. I never wanted to be the boring math teacher that gives notes, homework, and tests with little student engagement in the class, but as the stress of the quarter started to get to me, I fell back on the things that I could easily do (Charles, Spring reflection, #7).

*Not only had Charles again used the personal dissonance arising out of his classroom practice as the source of his reflection as he had done with the homework issue, but also here, Charles finally acknowledges that the path he intended to take is clearly and drastically different from his daily reality. Lamenting the route he had so readily accepted as a means of coping and surviving in his mentor teacher’s classroom,*
I really feel like I have failed these kids. I don’t think many of them really understand the things that I have been ‘teaching’ for the past seven weeks, and it really seems like many of them have quit all together (Charles, Spring reflection, #7).

Charles continues in his personal reflection as he mentions how deeply troubling the student teaching experience has been for him.

I never wanted to be what I have become, and the thought of turning into my old algebra teacher truly frightens me. She is the reason that I wanted to be a teacher so that students wouldn’t be subjected to her, but I have started down the road to becoming her, and it is truly frightening (Charles, Spring reflection, #7).

Glimmers of hope for Charles.

Our heartfelt conversation the day before and Charles’ words in his written reflection the following day were a big clue to me that I had somehow done something right. I had wrestled with the questions of what to do with Charles during Winter Quarter, and at times, I honestly felt like giving up. But, as I have come to learn, the best I can do for any preservice teacher is to provide encouragement, to be supportive, and to deal with each of them with honesty and integrity. Charles didn’t need point deductions and contracts to sign for improved performance, he only needed to realize that there will be a time and place for him to develop and grow into
the teacher he knows he can be, and I tried to include this idea in my supportive feedback.

I remember all that you have said about the high school teacher that you didn’t want to become. Well, actually, its part of the data that I have been poring over and analyzing searching for some way to bring this exact issue to your attention. Honestly, I think the most positive thing to come out of the past couple of weeks at Douglas High School is that you have now realized this. There may be only a week or two, if that, left at Douglas, but what is crucial for your career as a teacher is how do you keep from sliding into the ‘do what is easiest trap’ in your first years of teaching. Like we discussed yesterday, take it one class at a time. Make the commitment to make each class and each lesson better for your students than the one before. After a few years of trial and error, you do get better and you spend your planning time sharing and fine-tuning rather than trying to invent (US, Spring reflection feedback, #7)

Yet, even with these encouraging words and with taking these first small steps to establishing his independent teacher style, these realizations came too late for him to change his field experiences. Charles was in the final week of his student teaching experience and had begun the phase-out process by returning two of his algebra classes to his mentor. Although he espoused a deeply-sensed need to change his current classroom practice, the late timing of his realization did not allow for its manifestation in his mentor teacher’s classroom.
A glimmer of hope for Charles’ further professional growth and development, however, does exist as evidenced by his last written reflection to his university supervisor.

The last year has been stress-filled, and I have definitely learned a great deal about myself, my abilities, and about the person I want to be. I don’t think that I reached all of the goals that I set forth for myself last summer, or even this quarter, but I feel like I have opened the door to reaching those goals in the future (Charles, Spring reflection, #8).

*With the prospect of his own secondary math classroom in a far more rural part of the state near his hometown, Charles excitedly realized that he had deferred his own classroom presence and authority for too long. The hopes of his professional self-actualization seemed eminent as he expressed a reluctant excitement at his future career in mathematics education.* “I feel like I have been given the tools to be successful in the future, but at this point, I am just a little anxious about the though of having to do these things on my own” (Charles, Spring reflection, #8).

**Summarizing Charles**

The ten weeks of Spring Quarter are traditionally the most hectic and stress-filled times for the secondary mathematics preservice teachers. As they struggled to keep up with the mounting paperwork that accompanies an entire day of teaching and as they tried to manage consistent and fair expectations of student behavior and engagement in the lessons they create, the four preservice teachers in this study each
took their own path in developing a functional sense of their new teacher personality. The goals of the Spring Quarter student-teaching experience were to move the preservice teachers into a more central role as teacher within their mentor teacher’s classroom, each of the four were able to move beyond learning goals and expectations that could be listed in the conceptual framework of the education unit. They were able to reflectively and decisively learn about the humanistic elements of teaching and working with students; plus, they were able to learn more about themselves.

Charles consistently experienced difficulty in establishing a classroom style and presence that was reflective of his personality and his beliefs. Falling back on lesson implementations that were comfortable and easy for him to create and execute with minimal advanced planning or consideration for the current learning needs of his students, Charles filled the role of classroom chameleon by consistently adapting the classroom teaching and management style of each mentor teacher he worked with. Charles was either consciously or subconsciously making every attempt to circumvent the establishment of a teaching style he could call his own, but trying to make sense of a dual world in which his university teacher preparation was at odds with the day-to-day realities of public schooling.

As mathematics teacher educators, we may begin our work with preservice teachers with the best of intentions; we may even go as far as to plan, arrange, and script what we think should happen in terms of developing meaningful field experiences for our preservice teachers. But, in progressing the preservice teachers through multiple and diverse field experiences with little consistency between
placements, I feel we often lose sight of developing the teaching self in favor of measuring specific artificial teaching performance benchmarks and indicators.

While Charles admittancey acknowledges picking up bits and pieces of classroom practice from various locations and interactions along his path, he consistently places his teacher development within his first year of teaching, not as a project for current refinement and development. That is, until Charles had the light-bulb moment that he could no longer separate his own humanity from his work as a thinking and reflective classroom teacher. Coming in the eleventh hour of his student teaching experience, his remorseful change of heart arrived too late for adjustments within the classes he has taught, but in admitting that he does not like the teacher he has become, he has opened the door to allow positive change within his classroom practice. Knowing that he had too long deferred his own assertiveness and belief system in favor of systems that work for others, Charles looks to his first year teaching position as a time when he can grow into the teacher he wants to be.
CHAPTER 5

THE CASE OF CARRIE

Introducing Carrie

Carrie is a twenty-four year old Caucasian female who also entered the preservice teacher preparation program immediately after completing her bachelor’s degree in mathematics at the same university. Carrie grew up in the suburbs of the city in which the university is located and attended middle school and high school in a suburban school system adjacent to the city. Through her involvement in high school athletics as part of the girl’s cross-country team and having high school friends in neighboring school districts, Carrie had some degree of familiarity with the urban school system and its suburban counterparts. She had definite impressions of which school systems had good reputations and which nearby school systems have poor reputations in the areas surrounding the city.

While still an undergraduate student, Carrie envisioned her work as a secondary mathematics teacher to center on “help[ing] high school students make the transition from high school math to college math” (Carrie, Pre-study questionnaire, item #1). Her experiences while completing the content requirements in mathematics for her undergraduate degree led her to believe that she could do more for her students. “I want to help students see why they need math, that they CAN do math,
and that it is okay to make mistakes. Learning can be fun, and I want to help make
their high school years more enjoyable” (Carrie, Pre-study questionnaire, item #1).

I initially categorized her initial reasons for wanting to teach as altruistic and
naïve in their generality, but as I came to know Carrie in our first few weeks together,
I came to understand that they did provide a glimpse into Carrie’s contemporary
thinking as she enters the program – that mathematics teaching can be more
meaningful than the traditional lecture-format allows and that she can be an
impacting force on the lives of students in her classroom. Since she had already
espoused some of the principles of reform-based mathematics instruction, I knew that
half of my battle with Carrie had already been won. I was only hoping that her words
were an honest depiction of her initial beliefs so that I could focus the majority of my
supportive efforts in the direction of how to make her classroom practice in harmony
with her beliefs on effective mathematics teaching.

Articulating a Vision for Teaching and Learning

Before having any classroom experience, Carrie envisioned her future
mathematics classroom as being student-centered and operating within the parameters
of current reform-based pedagogy. It was this propensity for less-traditional
instruction that merited her inclusion in the study. If a stranger were to enter her
classroom as a first-year teacher,

He or she would happily see that there would be six groups of four students
per group. Each of these groups is diligently working on separate assignments
which they will present to the class on another day. Although each of the
groups is working on separate problem situations, each relates to the same
concept (Carrie, Initial Writing Sample).

I found it very infrequent in my three prior years experience as a university
supervisor that a preservice teacher with little to no classroom experience projects
such strong beliefs for group problem-solving experiences. She does include them
into her projection of her future classroom.

I will be walking from group to group asking questions about the activities
they are doing and prompting different scenarios and suggestions for how they
approach their group project. In the way I have planned the lesson, the
students should already be knowledgeable enough to produce an interesting
presentation. I will be happy to see these lively students interacting
appropriately, and I cannot wait to see the final outcome of what they can do
(Carrie, Initial Writing Sample).

I could not believe what I was reading from an Initial Writing Sample, she had
clearly put much thought into how she wanted her class to operate, and I curiously
wondered what aspect of her past or prior experience had shaped her vision of
student-centered learning. In my first round of classifying members of the cohort for
their possible inclusion within my study, as outlined in Chapter Three, I excitedly
placed Carrie’s writing in the more progressive pile of papers.

Since the program espouses the values of constructivist learning strategies
through its methods courses, it seemed readily apparent that I would not need to use
too much coaxing to get Carrie to try new things during her field experiences. This Initial Writing Sample from Carrie illustrates that mathematics education does not necessarily have to match a traditional instruction model to be effective, but rather, it needs to reflect the way students learn. In her imagined, future classroom scenario, the students actively construct their understanding to mathematical concepts and communicate with each other to complete the assigned tasks as the teacher fades to a secondary focus and more facilitating role within the room.

While I was impressed with the specificity of details that she had included, I wondered if she had considered the social and classroom norms that she would have to establish within her classroom to make this type of instruction possible and fluid. Since the program did not afford the preservice teachers to see the critical first two weeks of the school year, I knew that I would need to use some scaffolding and illustrative examples when we would discuss how these non-traditional pedagogies were put into place. I had my own trial-and-error stories from my own practice in getting students to share their work with others and how to build community with a classroom that supports the work she wants to do. Once I had obtained her consent, I was anxious for the possibility for more positive growth from her.

My initial hunches were confirmed when I began to notice a high level of consistency within Carrie’s reflective writings that she submitted to me during the first weeks of Autumn Quarter. Her reflections were very much consistent with her pre-existing simpatico with non-traditional instruction. The first three structured Autumn Quarter reflection prompts asked each member of the cohort to articulate
their own initial beliefs, to create a metaphor for the act of teaching, and to begin to consider what cultural and media influences may have shaped their initial ideas of teachers and classrooms. As the sole recipient of her reflective writing, and her university supervisor for the duration of the teacher preparation program, it seemed that Carrie had been critically thinking about her future career for quite some time.

Initial thought on effective teachers.

To be an effective teacher, Carrie asserts that teachers, in general, should not only be passionate about the subject that they teach, but Teachers must also be passionate about helping children and becoming better teachers in general. Having a passion for teaching, loving the subject being taught, and relating to the students on a personal level will help any teacher to educate effectively. Being patient, respectful, and sensitive to students’ feelings will boost student confidence and aid in their learning process. We cannot force the information we’re teaching into the students’ brains; we must learn to be patient while they try to figure it out (Carrie, Autumn reflection #1).

In response to her writing I offered my support for her thinking and drew attention to our similar opinions.

I agree! No, we can’t cram it into their brain, but we can provide the experiences for them to put it into their minds in meaningful ways. I see many similarities in the way we see classrooms, Carrie, and we have very common
ideas of what students should be doing when they are in a math classroom. With the way we have culturally defined math teaching, do you feel that we sometimes teach the learning right out of kids in the early elementary grades? Your thoughts? (US, Autumn reflection feedback, #1).

From my own successes and not-so-successes, it had taken almost four years of authentic middle school and high school teaching experience for me to reach the same level of thinking, and again, I was excited about what the two of us could accomplish with this mature mindset already in place. In hindsight, I should have more personally explored the prior math influences that had helped to shape her current thinking, but at the time, I was simply happy to be working with a preservice teacher that didn’t need to be coaxed into reform-based ideas.

Initial thoughts on effective teaching.

As for defining characteristics of what constitutes a successful teacher, Carrie pulls from her own personal learning experiences when she reflectively shares her thoughts of her past teachers. The most memorable and successful teachers for her were ones who “were approachable and had effective ways of teaching” (Carrie, Autumn reflection, #4). While the phrase, ‘effective ways of teaching’ was not immediately explicated in her writing, I was able to ascertain through our personal conversations that her working definition of these words relied on the images she remembered of the most successful teachers. These were ones from her secondary and undergraduate experience who gave
Amazing group projects, who would do experiments with us, and who would give us group work that had meaning behind it. We, as students, were more able to learn not because of the weight of a grade over our head, but because we were actually pulled into the learning experience through our group work and interaction (Carrie, Autumn small group discussion, week 5).

Clearly, Carrie’s more mature view of teaching had been shaped by her previous experience in student-centered learning environments, and I, perhaps prematurely, attributed her disposition to attending secondary schools within a suburban area that could be under the direct influence of recent graduates from the mathematics education program. This may have had a strong impact on her learning and classroom experiences as a student.

Explicating a Metaphor for Teaching and Learning

In creating her metaphor for teaching, Carrie focused, as did Charles, that teaching was very similar to driving a car. I thought this viewpoint was very interesting considering that these two participants were very different in their dispositions about mathematics teaching, but had selected the same metaphoric images. But, while Charles focused more on the processes of driving the car, Carrie carefully noted her own role as the driver and the impact of the road she was traveling.

Drivers may take a wrong turn and get lost for a moment, but they can always get a map and find their way back on track. Similarly, teachers are human and
do make mistakes, too. Just like driving, teachers also need to pay attention to
the road ahead, or what she will be teaching in the weeks ahead. Also, a driver
will sometimes need to take a detour when the road is closed; likewise,
teachers must also find different teaching routes for her students. Not
everyone can learn in the same way (Carrie, Autumn reflection, #1).

Again, I detected a level of maturity in her thinking that I was not used to
experiencing with secondary mathematics preservice teachers that I had helped in the
past. Most preservice teachers enter the program with strong beliefs that
mathematics, at any level, inherently understandable to students through traditional
instruction and symbolic manipulation, if only the students work hard enough to
memorize the steps or the processes that are demonstrated for them. Here, Carrie
avoided any direct use of first-person pronouns and singular verbs that traditionally
describe teacher-led classroom actions. For her, teaching was a collaborative effort,
and she had strongly acknowledged that teaching itself is a dynamic activity that
needs to be monitored, adjusted, and corrected while in the act. Carrie had
understood and had constructed her contemporary understanding of her work, even
before our collective work had even begun, around the idea that teaching is a human
endeavor and a highly problematic enterprise.

Carrie in Autumn

The Context of Carrie’s Autumn Quarter Field Experience
When Carrie received the information detailing her Autumn Quarter field experience placement, she immediately became excited. From her experience in attending high schools in the region, she was familiar with the reputation of the Creekview School District and knew that the school system was awash in money and resources. Since the school was located in an affluent suburb, she was also relieved that she would not have to deal with many issues of “disrespectful students who would be carrying knives and guns in their backpacks” (Carrie, Autumn small group discussion, week 3). She was also pleased with the opportunity to begin her teaching experience at a school in which the students wanted to be there, and the teachers carried the reputation of being professionals as evidenced by the school’s strong academic prowess within the city and the outstanding achievement of students on state and national standardized tests and college entrance exams. The local dominance of the school’s athletic teams was also a source of community pride with the football and basketball and girls’ lacrosse teams making it to the final rounds of the state playoffs in the three previous years.

_Carrie’s placement school._

Creekview Meadow High School is situated in a large field of well-groomed, perpetually-green grass trimmed by a multitude of groundskeepers to the length of manicured Astroturf. The school is well-kept and students move through carpeted hallways between classes as they pass by shiny, freshly-painted lockers, framed student artwork, class photographs, murals, plaques and awards earned by student-
athletes, and posters advertising group meetings and school-sponsored dances. Several of the mathematics faculty at the school were products of the same teacher preparation program in which Carrie is now enrolled.

Since I personally knew many of the teachers and the chair within the math department at the school, including one new teacher that I had personally supervised in the program in the previous academic year, I was able to fast-track her introductions and connect her with teachers I knew to be exemplary and willing to help.

The teachers at the school are professional and take their job seriously. They want their students to succeed and graduate from high school. Most of the students respect their teachers and behave during class. But, I noticed there is not much diversity in the student body or the faculty for that matter. I think I have a total of three students in the class I will be teaching that are not Caucasian (Carrie, Autumn reflection, #2).

Carrie’s mentor teacher.

Carrie was paired with a female teacher within the mathematics department who shared some of the same interests as Carrie. Commenting on what she has learned about and learned from her mentor teacher in a weekly reflection submitted later in the quarter, Carrie recounts, “On the very first day of my internship at Creekside Meadow she exclaimed, ‘I love being a teacher. It is by far the profession for me’” (Carrie, Autumn reflection, #7). While I thought that the randomized pairing
could work in terms of gender and excitement for teaching, I was personally concerned about her initial impressions of her mentor teacher after hearing the mentor described as a ‘spoon-feeder’ by my good friend who was chair of the mathematics department. With so many excellent teachers within the department, I continued to wonder, as I have in years past, why the field placements made by the college and the department were not more carefully considered or controlled. I had been asked on many separate occasions to give feedback on the mentors that had been used in prior placements, but I never honestly felt that my feedback actually made it to those who were responsible for securing field placements.

First Teaching Experiences

Together, the ‘expert-novice’ pair worked collectively throughout the quarter as Carrie planned, prepared, and taught the five lessons that were required by the program over the ten weeks she was at the school. Although based on the classroom practice I observed from both of them, I began to doubt the labels of expert and novice that had only been given in terms of direct classroom experience. While Carrie did feel supported in the feedback and assistance she received from her mentor teacher on a daily basis whenever she had asked a question or wondered about a particular student, there were points of disagreement between them as evidenced in our post-lesson reflections.

During her first two lessons of the quarter, I was a bit saddened to read her initial lesson plan drafts and to observe that Carrie, too, could abandon her beliefs for
student-centeredness and the importance of group work in favor of lesson structures that relied on direct instruction. *After seeing such actions from all four participants in their first lessons of Autumn Quarter, I began to question the purpose of this initial field experience as being a help or a hurt to the professional development of the preservice teachers.*

*The ease of adapting traditional teaching.*

As I entered her mentor teacher’s classroom for my first scheduled observation of Carrie, the room itself seemed very ordinary with its collection of desks arranged into neat rows and columns facing front with a lectern and overhead projector facing the main whiteboard. But, the overall feel of the room was somewhat sterile. The eggshell painted walls and bulletin boards were barren save for three isolated posters on the wall that only listed the state benchmarks for Geometry and Algebra II. *It could have been any math classroom in any high school in any town in America. I had to stop and think for a few moments of how a high school student would perceive coming into this room and sensing their feeling towards mathematics being as bland as the décor.*

I sat to the side of her over-crowded classroom of thirty-two high school sophomores and juniors to observe her first lesson that was to focus on solving systems of equations by the combination method. Carrie began the lesson with a review of the previous day’s homework assignment followed by a presentation to the class of what to do if the linear system involves parallel lines or different
representation of the same line (Carrie, Autumn observation notes, lesson #1). Even with an expressed affinity for non-traditional and student-centered activities for learning, Carrie had fallen into the traditional lesson format employed by a majority of mathematics teachers, including me in my first two induction years.

Initial dissonance from homework.

Checking the previous day’s homework assignment is an important value to Carrie’s mentor teacher, but so much not with Carrie.

Each day Ms. K. goes over every problem of the homework. I agree that homework is important, but what about the students who did not do their homework? They just sit in their seat and tune out with a poor attitude. This is definitely not productive for them, (Carrie, Autumn reflection, #7) but she includes the time for homework questions and review in her lesson because “when I teach a lesson for her, I am expected to do the same.” (Carrie, Autumn post-lesson debrief, lesson #2).

Even though Carrie’s reviewing statements in her weekly reflection give evidence that she does not value homework to the same degree as her mentor teacher, and her written reflection shows a definite disconnect between their views on homework, Carrie assumes a subservient position in the classroom and bends to her mentor’s lesson structure. *I chose to share my own views, and even promoted views opposing the ideas of traditional homework, within our small group session that week.*
When we consider ‘going over’ homework, what does that entail? If students aren’t doing it in the first place, then why are we wasting everyone’s time by giving them the correct answers and expecting them to gain some form of inherent meaning from them. There are hundreds of thousands of ways to interpret the catch-all phrase of ‘going over’ any piece or chunk of content. I am on a personal crusade to eradicate the phrase from the language of teaching, but that’s just me. How can we make students more active during a homework review? How much class time can you be willing to spend just on homework questions? How can you keep a homework check from growing completely out of control and taking up all of the class time? I advocate selecting a few ‘problems of interest’ that condense the main points of the lesson without being too redundant, and most of the time, students can catch their own mistakes if we only allow them the opportunity” (US, Autumn reflection feedback, #7).

But, to preserve the rapport that Carrie and I had established and as an additional means of gaining entrée, I recognized and honored the preservice teachers’ reluctance to not make too many waves in her mentor teacher’s classroom at this early stage in her development.

As the systems of equations lesson progressed, Carrie led the students through the symbolic manipulation of solving systems of linear equations through combinations with only two questions directed to the entire class as a method to monitor the students’ understanding. “I kept thinking during the lesson that the
students in the back of the room were not paying attention, but I knew that I had to get through the rest of the examples that I had planned to do” (Carrie, Autumn post-lesson debrief, lesson #1). I understood Carrie’s actions in her initial lessons as being a sincere reaction to the nervous situation of being in front of a classroom for the very first time. In fact, I sympathized with her and her teacher-centered actions as doing what was initially comfortable for her until she had gained a bit of confidence.

Initial dissonance from lesson structure.

Carrie’s classroom actions, and in fact the entire structure of her first two lessons, closely paralleled the day-to-day actions of her mentor teacher when Carrie reflects

Ms. K. never mentioned that having patience with students is a value of hers. She flies through material whether the students understand it or not. Her philosophy is, ‘We’ll review it before the test.’ I hear a lot of ‘Is this making sense? Good, Ok, Moving on’ all in the same breath (Carrie, Autumn reflection #7).

Again, I noticed Carrie’s reflection showing evidence of a deferment in her preference for a class structure in favor of one that would be pleasing to the mentor teacher. In my reflection response, I proposed a series of leading questions to push Carrie to examine a probable, deeper explanation for the beliefs and behavior of her mentor teacher.
Have you ever thought, Carrie, that she may do this because she doesn’t like the silence that wait-time requires? Do you feel that she knows the conceptual underpinnings of systems of equations? Why do you think this is? Is there any credibility to the idea that teachers who are not as strong in their content area don’t like to relinquish control of the discourse in their classroom because of their anxiety of where students’ questions will lead? (Carrie, Autumn reflection feedback, #7).

I knew that these were some pretty bold and touchy questions for Carrie to consider or even articulate an answer for, especially if that meant directly contradicting a person in power over her. But, I feel that my questions were also justified in calling into question the nature of mathematics as held by teaching professionals. Since I was only providing this feedback to her written reflections as ‘think-about’ to stimulate further independent reflection, I had hoped that Carrie had come to see a level of contrast between her fellow math teachers within the department.

First Teaching Successes

As the quarter progressed, Carrie asked for and received support from me to attempt teaching strategies that more closely match her initial vision of her classroom practice. Meeting the program requirement of submitting lesson plans to her university supervisor at least three days before she planned to teach, I questioned her initial plan for her third teaching episode. Carrie had written her objectives for the lesson as “the students will be able to classify triangles based on side lengths and
angle measures” (Carrie, Autumn lesson plan, lesson #3), but her plan had again relied on a traditional lecture to impart the information to the students. I thought a bit of pushing was in order when I suggested something different in my feedback.

What would happen if we tried something completely student-centered with this lesson, Carrie? When you come right down to it, couldn’t anyone complete the lesson you present by simply looking at the vocabulary and then finding the words in the textbook index or glossary? Are we calling this teaching or telling? I am sure that many of the students have seen this vocabulary since they were in seventh grade, and you can structure a lesson to ascertain what they know instead of facing the battle of starting from scratch (US, Autumn lesson plan feedback, lesson #3).

I did not hear any immediate reaction from Carrie after I had electronically sent my comments to her lesson plan. However, I was very pleasantly surprised when I entered her classroom for my observation, expecting to witness more direct instruction.

The benefits of empowerment.

Carrie had heeded my suggestion and independently designed an opportunity to implement an in-class investigation for the classification of triangles. Her lesson would now segue into a new textbook chapter on triangle congruence for her geometry students. Since she had an entire weekend to plan her new lesson before its implementation and had received comments and feedback from me as to how to
create an inquiry-based lesson, Carrie took personal initiative and carefully reconsidered her objectives to create an original list of questions and activities that would guide the students to recall their own knowledge of the vocabulary and create congruence statements for figures that they would draw based on criteria that she had given. I felt that this was a more fitting way to address the revised objectives for her lesson and encourage the students to collaborate in constructing their understanding. It also showed signs of how Carrie had felt empowered to branch out on her own as a result of her reflective consideration for her lesson plan and her students’ learning. I, too, felt empowered that at least one of my preservice teachers were actually reading and responding to the feedback that I had taken so much time to offer.

As her discovery lesson, which was third in her series of her required five lessons, unfolded within her classroom, Carrie cheerfully encouraged the students to talk with each other as they progressed through the activity and would not give any direct answers to the students. Instead, she would key them into the idea of working together to complete their tasks as they progressed through her activity.

The key is to work together and use what the members of your group know to help you build understanding. I will be around to each of the groups shortly to clear up any questions that you have and to help you (Carrie, Autumn observation notes, lesson #3).

Since most of the students had exposure to the vocabulary of classifying triangles, such as isosceles or obtuse, most students did interact within their assigned groups or
were able to use their textbook to refresh their memory and expand what they knew about congruent figures to create geometric congruence statements.

Circulating through the room to monitor their understanding, Carrie felt energized from the level of engagement and interaction that she received from the students and the way they were collaborating to complete the tasks she had created. The students were able to maintain a very high level of engagement with the activity until, taking my further suggestions from her drafted lesson plan, Carrie stopped their work to provide closure to the lesson and assign homework for the evening (Carrie, Autumn observation notes, lesson #3).

The transition that Carrie had made between her second and third lesson was incredible, especially for her first quarter experience. I lamented the fact that she had not brought a video camera to capture her latest lesson on film. Since one of her tasks to complete for the program involved analyzing a videotape of their own teaching, I felt this experience would have provided an excellent source of evidence upon which she could further reflect as she progressed through the program, and also serve as an initial point of reference for growth throughout her teaching career. But, Carrie was not sure of how her students would respond to this new teaching style. Thus, she opted to videotape a safer and predominantly traditional lesson in the final weeks of the quarter to meet her program requirement so that “this way, it will look like I am more in control of the classroom if someone from the program wants to look at it” (Carrie, Post-observation debriefing, lesson #3).
At the time, I didn’t understand her puzzling statement, but then I realized that in some respects, Carrie was trying to earn a favorable grade, too. The videotaping requirement in each quarter of their field placements could be such a powerful visual representation of their current classroom thinking and practice, but as I was coming to understand from my participants, the close ties of these assignments to their course grades was acting as a deterrent to possible sources of learning.

Discovery increases student engagement and interaction.

As a means of assessing the students’ understanding from the triangle classification activity, Carrie employed her own assessment idea asked each member of the class to write their responses to structured questions on an Exit Ticket before they left the room. “I had no idea that this class would go that well!” (Carrie, Autumn observation notes, lesson #3). Carrie excitedly shared with me as a huge smile beamed across her face and the last student left the room.

The students became involved! Smiles appeared on their faces as they were interacting, and they awoke from their math slumber! You just can’t believe how happy I was, knowing that I had students learning from something that I created on my own (Carrie, Autumn reflection, #9).

I, too, was encouraged by the unexpected success of her first discovery-based lesson. It has been my experience that high school students who have been trained in how to receive mathematics usually have strong resistance when asked to construct their own understanding. However, the content of this lesson was relatively safe and
familiar for the students and an excellent opportunity for Carrie to do something different from her mentor teacher, and more importantly, experience success from her own practice.

Carrie’s mentor dashes her feelings of success.

With such a successful first attempt in creating her lesson independent of any textbook, I was encouraged and anxiously anticipated Carries next teaching opportunity. However, our victory was very short-lived as Carrie reverted back to a direct instruction model for the remaining two lessons she would deliver to her mentor teacher’s classes. While the specific reasons for her regression to more traditional methods for the remainder of the quarter were never made explicit at the time, I was able to infer from Carrie during later quarters that her Autumn Quarter mentor teacher was quite uncomfortable with the level of noise in the classroom during her triangle activity, and her student-centered lesson had not contained enough attention to the student’s homework questions.

After we had our debriefing on the lesson and [I] had left, Ms. K. looked at me funny, and said that she felt that the class was too unorganized and the students were too loud. I was on such a high, and this just shot me down.

From that day on, I thought she was a little crazy and wouldn’t be as supportive as she initially said (Carrie, focus group transcript).

A secondary concern that Carrie shared with me was the feeling expressed by some teachers within the math department that the algebra and geometry classes needed to
address the certain benchmarks within the curriculum more quickly as the autumn testing dates for college entrance exams drew near.

However odd, I took this regression to more traditional teaching strategies as a political move on Carrie’s behalf in order to secure a more positive evaluation from her Autumn Quarter mentor teacher. I initially stressed about the abrupt change of direction she was taking, as evidenced by the teacher-centered lesson plans I received in subsequent weeks focusing on measuring angles formed by parallel lines crossed by transversals and getting students to solve quadratics by using the quadratic formula. But, I was confident and secure in the positive reinforcement that she had received from her student-centered triangle activity.

Carrie Reflects on the Processes of Teaching and Learning

I was further willing to let my anxiety level subside when I would receive more information about Carrie’s developing beliefs about teaching through her weekly reflections as the quarter progressed. Rather than seeing her mentor teacher’s traditional ways as mandated expressions of how secondary mathematics instruction should look and sound, Carrie kept her own reviewing and rethinking statements between the two of us. It was as if she was relying on her mentor teacher to be a counterexample to effective classroom practice as she continued to solidify and articulate her personal beliefs.

In response to a structured reflection prompt in which the preservice teachers were asked to relate two instances in which they had difficulty learning something, Carrie shares her experiences learning to ride a bike and learning to play euchre. In
what I had come to expect from her reflection over the course of the quarter, Carrie was able to relate the details of her story, and then step back from her writing to examine the more far-reaching implications of her written communication.

In both of these learning experiences, I started out learning with someone else, either my mom or my middle school friends from the pool. Perhaps, I needed someone to be there for me. Like many students, perhaps I just needed motivation. Once I had that motivation, I practiced on my own. I wanted to learn on my own just so I knew that I could. I don’t get this vibe from the students when Ms. K. is teaching. This could be the same feeling that I got from my students in my third lesson. Many students are afraid of math. Perhaps they have fallen, like I did when I learned to ride my bike, and it hurts when you fall. Getting back up on that ‘math bike’ is hard to do, but with motivation and determination, it can be done (Carrie, Autumn reflection, #6).

With such a mature disposition and such clear evidence of this level of teacher thinking within the first phase of our field experiences together that continued to matriculate throughout all of her reflection responses, I was willing to overlook any small, political posturing that Carrie was willing to make. In a sense, I couldn’t believe that I was seeing such a deep level of thought within her reflections, but I felt that I could still offer suggestions to lead her current thinking further.

Perhaps you weren’t explicitly taught the nuts and bolts by yourself, but you had the overarching ideas of concepts and then made sense of them yourself.
based on your current level of ability and current understanding. In other words, you constructed your own ideas. I think the bike analogy is great! How many of your students have the same disposition of being afraid of math? What about those students who fall off and don’t want to take another ride? What has been their past ‘wreck’ for it to be so serious that they don’t want to try again? (US, Autumn reflection feedback, #6).

Summarizing Carrie in Autumn

From a reflective and teaching experience standpoint, I was initially happy with the progress that Carrie had made during Autumn Quarter. She had shown glimmers of both personal and professional growth in planning her lessons and creating an inventive way to illicit summative assessment information from her student through the clever use of an Exit Ticket. In recognizing that her mentor teacher’s classroom practice was not a match for current understanding, Carrie moved beyond reflective thought and into action that resulted in effective teaching for her and effective learning for her students. While the lesson she created had obviously taken more work to create, she was able to use the resources at her disposal to meet the students at their current level of understanding and build upon it through questioning and meaningful mathematical activity. Having experienced a very high degree of success with the students’ learning and the inquiry lesson structure that she had independently created, this initial positive response to her classroom practice
was inherently connected to her beliefs, and, most importantly, I felt it could be replicated if the issues surrounding her teaching were less regimented.

Even at these early stages within the program, I began to question the wide ranging levels and dispositions the preservice teachers bring with them into the program. How could it be that I had one preservice teacher afraid to assert his own authority to present lessons that paralleled his belief system while others were using their Autumn Quarter lesson requirements to explore and create what works best for them? Why had one preservice teacher viewed the classroom as a student for the entire quarter while others had come to see the classroom as a teacher much more readily? Why had one preservice teacher chosen to craft his written reflective responses geared toward what he felt I wanted to hear while others had independently chosen to use the weekly reflection as a means to more fully explore their current teacher thinking? As I began to work with and know each of my participants on a more personal level, it seemed my work was getting more complex.

The supervising strategies that I had relied upon for three previous years were yielding some success, but not total success. My initial research questions were only yielding more questions as I prepared for a closer working relationship with my participants in Winter Quarter.

**Carrie in Winter**

*The Context of Carrie’s Winter Quarter Field Experience*

Seemingly from the end of her Autumn Quarter field experience, Carrie was eager to take on more classroom responsibility and had a clear design on what areas
she wanted to improve upon during her ten-week Winter Quarter field placement. “I
know that I want to work on developing more classroom flexibility and creating a
wider range of daily activities to get the students excited about learning math”
(Carrie, Winter Quarter goals, #1 and #2). *Having just exited a secondary suburban
environment, which we both felt was overwhelmingly teacher-centered and not an
exceptional model of the ideals of the program* (Winter, small group discussion, week
1), Carrie was looking forward to the challenges that an urban middle school could
offer, even though the stereotypes of the urban school environment were present and
a source of apprehension in her mind during the holiday break between academic
quarters at the university. *With all four participants entering urban environments for
their Winter Quarter field placement, this issue of urban stereotypes puzzled me.*

*What had shaped their prior beliefs and past experiences about urban classrooms?
My list of questions was growing longer, and sadly, my list of answers to those
questions wasn’t getting any longer.*

Upon arriving at her new school and meeting her new mentor teacher, she was
pleasantly surprised at her seemingly good fortune of her placement. “First, of all, is
this really an urban school? It could almost be suburban!” (Carrie, Winter reflection,
#1). Carrie was happy to see many of the resources that would be available to her
during her experience, including an extensive, recently-renovated computer lab in the
school library, an experienced faculty with a reputation for collaboration and content
integration, and well-maintained facilities.
The desks in my mentor’s classroom are going to be perfect for group work, and there is plenty of room for the students to be active in their groups. I already have a mental image of what I want to do to set up the room. My mentor also has markers, glue sticks, rulers, and other supplies that will be perfect for hands-on activities (Carrie, Winter reflection, #1).

*It was with this vitality and excitement that Carrie plunged into her winter teaching experience, and for the first time I saw an authentic interest from her to take control of the direction of her field experience. She directly expressed to me her willingness to seize control of her new classroom and make it her own.*

Carrie’s new placement school.

Horse Park Middle School, Carrie’s placement for the quarter, is situated within the county’s largest school district encompassing one hundred twenty-seven square miles and thirty-one total elementary, middle, and secondary schools that serve the nearly twenty-one thousand students on the west side of the city and surrounding areas sprawling into the city’s southwestern suburbs. *Through political gerrymandering, the school district had continued to grow to serve many different areas of the county without having a clear target population.* While the majority of the neighborhoods served by the school district would be classified as suburban housing developments and rural farm communities, the district is classified as urban by the state department of education based on racial and socio-economic demographics aggregated from each school.
Carrie’s new mentor teacher.

Carrie’s mentor teacher, Ms. S., is a middle-aged Caucasian female who accumulated twenty years experience teaching middle school mathematics within the district, but not all of her years were spent at Horse Park Middle School. Described by Carrie as “the nicest and most flexible teacher in the building” (Carrie, Winter reflection, #1), but through their conversations and a few initial observations of her classroom teaching, Carrie retracted her initial assessment and afterward described her mentor as a “more traditional teacher” (Carrie, Winter small group discussion, week 1).

In our small group meeting that week, I again heaved a heavy sigh, and for the first time, publicly questioned the process of selecting mentor teachers in the presence of my preservice teachers. “Wouldn’t you think that someone, somewhere, should be keeping track of math teachers in the surrounding area that would actually be models of the classroom teaching we want you to see, rather than putting you with any warm body” (US, Small group discussion, week 1). While I didn’t mean any specific insult or injury to Carrie’s new mentor teacher, my frustration with the selection of mentor teachers had reached a very high level.

Carrie’s new class and their learning needs.

Yet, Carrie still viewed her placement as a positive and was excited to be paired with “someone with that much experience who was so willing to take me into
her classroom and share all of the many resources she has collected over the years” (Carrie, winter small group discussion, week #1). Even though Ms. S. had been designated as the advanced mathematics teacher for the middle school, Carrie was unable to assume control of these accelerated Algebra I classes since they were all taught in the afternoon. “Unfortunately, my mentor teacher only teaches one math class in the three hours I am with her in the morning, so my math class will be the first period, Inclusion Prealgebra class” (Carrie, Winter reflection, #1).

Even though I had initial reservations about her placement, I felt that this new information about the class she would be teaching could create more learning opportunities for her. In her nightly university coursework, I knew that she would be taking a class within the program that addresses gearing lessons towards special needs learners. Thus, some of her learning from her coursework could be reinforced by her observations and experiences within her field placement. However, I took this opportunity to provide a few precursors to what she would be thinking about over the coming weeks with some probing questions I offered as feedback.

I think we need to be very careful of how we define ‘inclusion,’ Carrie. If I was willing to offer you one hundred dollars for a thorough definition of the idea, what would you say? This is a huge hot-button issue with many teacher unions and school systems. To what extent and criteria will your class be an inclusion classroom? Will you have a resource person with you? What levels of disadvantage will your inclusion students have? Should all students with disabilities fall under the considerations of a ‘least restrictive learning
environment’? What limits, if any, do you feel could or should be placed on these types of situations? (US, Winter reflection feedback, #1).

Being designated as a special needs class, I learned from Carrie that the school district provided a traveling resource teacher who would remain in the classroom throughout the school year to facilitate the classroom activities and progress of the six designated special needs students in the Prealgebra class. Even though Carrie knew the identity of the six designated special needs students in the class, the specific learning disabilities and other information contained within the students’ Individual Education Plan (IEP) was not shared with her during the field experience (Carrie, post-observation debrief, lesson #1). While I understood the school’s decision based on privacy issues, I did question the non-disclosure of information that would only help Carrie address the learning needs of her students.

Carrie Becomes Integrated in the Classroom Community

Adjusting to middle school learners.

During her three weeks of orientation to the school and the students before her six-week teaching requirement began, Carrie was welcomed as a helpful addition to the classroom environment. At the beginning of each quarter, I did encourage each of the participants of this study to become integral parts of their mentor teacher’s classroom immediately upon their arrival at the new school. Coming from an initial placement in a secondary school in which the students were “much more reserved – bordering on apathetic” (Carrie, Autumn reflection, #5), the constant flurry and buzz
of active, hormone-driven, middle school students was at first seen as inappropriate and disconcerting for Carrie.

So far, at my school, I have noticed that the students are wild and crazy! They are not disrespectful in the way that they make nasty comments to the teacher, but they are disrespectful in the way that they are constantly out of their seats, interrupting class by making jokes or talking excessively, and do not come to class prepared (Carrie, Winter reflection, #1).

My first impressions of these initial reactions to middle school students were reminiscent of my own experiences teaching middle school classes. In my stream-of-consciousness response style, I began to share my own thinking and provide a few furtive questions to extend her thinking about her new students.

Hmm…but isn’t this typical middle school behavior? Keep in mind that some of these students are walking, talking bags of hormones! In some preadolescent males, they can get a charge of testosterone that will enable them to run the length of three football fields without getting tired. These hormone spikes can come at any time and without warning. Just as an aside, Carrie, I want you to discuss the number of students on behavioral modification medication with your mentor teacher. I feel, way too often, students are placed on these medications that send them into zombie-land while at school, and then they take more. What is your current thinking about all of the medicines our students are currently taking? (US, Winter reflection feedback, #1).
But, as Carrie gains vital experience and insight into the flexible nature of middle school and pubescent adolescents who, as she comes to realize after just a few short weeks in her new classroom, are only “immature and wanting attention” (Carrie, Winter reflection, #2). Interestingly, almost as a direct consequence to her reflective considerations of the questions I had presented to her in the feedback from the week before, her tone changed as she came to see these challenges with student behavior as an educational advantage.

Honestly, it makes the day more interesting because they show me their personalities more than the high school students from last quarter. Sometimes their behavior makes me chuckle, and I have to hide it so that it doesn’t ‘egg them on.’ I wanted to laugh so hard when [one of her special needs students] actually took the chalkboard eraser and pounded it on the chalkboard like in the movies. Dust was flying everywhere; it wasn’t pretty. I have been paying close attention to how Ms. S. handles their behavior because I am going to have to handle them myself when I begin teaching in one week. Their behavior is not appropriate for the classroom, but it is not going to change. I know that when I plan my lessons, I will be thinking of their reactions and distractions and how I can respond to them without resorting to screaming at them or babying them by ‘shh-ing’ them” (Carrie, Winter reflection, #2).

_Eager to take control._
Thus, I was encouraged at her willingness to accept her students for the wild and crazy adolescents that they are, and I was further encouraged by her willingness to adapt a positive teacher mindset in viewing problems and challenges as opportunities for her growth at such an early stage in her Winter Quarter field experience. Carrie was progressing her thinking at a very fast pace, but I still pressed her to think more deeply about the behaviors she was noticing.

Do you think that the chalkboard incident was an acting out? What could [he] have been acting out against? Are they bored? Unchallenged? What more challenging things will you bring to them next week? Are they new to the school and jockeying for position as the class clown? Is this one of the battles being waged in the ‘identity versus role confusion’ conflict that you learned about last summer in your educational psychology class?” (US, Winter reflection feedback, #2).

Knowing that she will be responsible for creating a supportive learning environment encouraged Carrie to reflect on the existing knowledge and energy within “MY Prealgebra classroom” (Carrie, post-observation debrief, lesson #1) to support the goals she has planned for her students in her weeks of teaching. While the use of one particular pronoun may be completely insignificant, I did take the use of her word ‘my’ as a definite signal of ownership. This was going to be her classroom; she was going to do what she wanted. Through these initial Winter Quarter reflective writings, Carrie does acknowledge ownership of her temporary classroom. Building upon her successful creation of student-centered learning labs from her secondary
teaching experiences, she felt encouraged and empowered to find “the kind of activities that students like to do, and I know that they will be engaged throughout the class period” (Carrie, Winter reflection, #3). I began to surreptitiously weave a connective tissue from her student-centered Autumn Quarter triangle lesson that could be strengthened and developed with more day-to-day experience.

I was delighted to read in her submitted lesson plans of her willingness and eagerness to try many different activities and cooperative learning to engage her students in their learning. I attempted to instigate her further independent reflection of teaching through inquiry-based frameworks and making connections to her university coursework by providing feedback that contained questions to extend her thinking.

I noticed that you have included two days of predominantly traditional instruction that separates the group work that you want to use. Why couldn’t we have these student-centered types of activities everyday? What could be the possible advantages and disadvantages of teaching like this? How do your activities meet the same objectives as traditional instruction? I feel that you have presented the basic facts of what you want to do, but now you need to elaborate on what you think about them. What projections do you have for your activities? Who is going to benefit the most from them? Whose learning styles will you be addressing? Dig a little deeper into your thoughts about why you want to teach this way, Carrie! (Carrie, Winter reflection feedback, #3).
Blending practice and beliefs.

Though she found the act of planning units and individual lessons for her solitary, morning class “exciting, but time consuming” (Carrie, small group discussion, week 3), she was able to sort through overwhelming piles of materials given to her by her mentor teacher, local curriculum guides, interactive applets from Internet websites, and plans that her peers within the cohort had shared with her. However, the materials given by her mentor teacher “were mostly overhead transparencies which are mainly for notes or examples, and Ms. S. feels this is a great way of getting the information out to the students” (Carrie, Winter reflection, #3). But, as Carrie shared with me after her first observed lesson of the quarter, giving notes every day is definitely not my style doesn’t allow for a lot of interaction or critical thinking for the students (Carrie, Winter post-observation debrief, lesson #1).

Carrie’s Developing Classroom Practice

Holding true to her beliefs of what constitutes good teaching and learning, I was encouraged to find that Carrie was able to experience success in leading her students to understanding throughout her Winter Quarter experience on topics of transformation, area and volume, and the Pythagorean Theorem while also defining and developing a more reflective stance toward her classroom practice.

With the majority of her students in the Prealgebra class conditioned to take notes and to solve uncontextualized example problems placed on the overhead
projector as their daily routine, Carrie felt compelled to break the students out of their comfort zone within her first days as assuming the role of teacher from her mentor. While I did caution her, as I warned each of my preservice teachers, that she needed to consider the students and not to change too much of their daily routine too quickly, Carrie demonstrated that she had already formulated a working knowledge of her students and was planning to make the teaching transition as smooth as possible.

Knowing the majority of the students were visual learners and also knowing the intrinsic lure of the Internet for her students (Carrie, Winter lesson plan, lesson #1), Carrie led her class to the computer lab to investigate symmetry in the coordinate plane. Interestingly, Carrie questioned whether this particular lesson would fill the requirement of teaching. “Does this count as one of my thirty lessons since I will only be having a supportive role answering questions and troubleshooting their difficulties in the computer lab?” (Carrie, Winter reflection, #3).

While this question initially surprised me, I had to consider the question in light of her past experiences in math classrooms and her current evolving definition of what it means to teach. Had I given the impression that teaching meant that she had to be directly in front of the classroom? Had the program instilled this? Was she being reactionary to her images of her own middle and high school math teachers? Additionally, I thought it odd that she would feel the need to ask for permission or seek approval from her university supervisor to implement a plan she believed would work for her students.Obviously, she still had some inclination that our relationship
was hierarchal rather than supportive and helping, and I had work to do to build our relationship toward a more collegial nature.

**Blending practice and beliefs.**

Since she would not be taking the traditional space at the front of the room, Carrie initially questioned that the lesson and activity she had constructed constituted actual ‘teaching,’ but as the students interacted with the website she had selected and interacted with her in the act of completing their tasks in the activity, she was more than pleasantly surprised at what the students could do. “The students were responsive to me and the activity! After teaching, I was on a high! I felt that the lesson went great and the students had understood the content” (Carrie, Winter reflection, #4).

**Trying to reinforce her success in my feedback and to offer suggestions of ways to extend the activity that had gone so well, I did not want such rich learning opportunities to go unnoticed as possible sources of reflection that could spur her future growth in this non-traditional direction she was exploring.**

*I would suggest that you could even extend this activity in which they present their initial and final shapes on an overhead grid, and then play a game I used with my middle school students called ‘Stump the Class.’ In this lesson extension that gets at deeper thinking about concepts, the students would be working and being challenged to find the transformation, or series of transformations, that had to be performed to get the final shape. There is no
rule that you cannot play along as well. Would the students enjoy the lesson even more if they were to stump you at your own game? Think of how this can bolster their thinking and their self-esteem (US, Winter reflection feedback, #4).

These initial levels of rapport and success with her Prealgebra students only helped to solidify student activity and student communication as daily routines within Carrie’s lessons for the majority of the Winter Quarter. Further, she was receiving positive praise from me, her mentor teacher, and from the reactions of the students in her class. It seemed that her classroom practice had successfully blended with her beliefs and her personality to provide a wealth of classroom experiences upon which she was able to base the remainder of her weekly written reflections.

Reflection takes a personal turn.

Upon further independent introspection of her symmetry and subsequent lessons on transformations in the coordinate plane, Carrie demonstrated not only her ability to place structure around an inquiry based lesson, but also demonstrated her developing ability to step back from the classroom situation and explore a deepening level of self-questioning her actions and the lessons she has created.

I think that the students enjoyed the lessons and enjoyed being allowed to talk to each other and talk to me. They thought it was fun, but they did not all successfully understand how to find the ending location of a rotation. I initially thought this lesson was great, but it could have been a lot better. I was
happy because it had went well for me, but it turns out that it did not go so well for the students (Carrie, Winter reflection, #4).

Here, for the first time in her authentic and honest reflection on classroom practice, Carrie feels empowered to abandon the list of structured reflection prompts to independently investigate her thinking on a topic of her own choosing that had arisen out of her own work in the classroom. This was a tremendous sign of growth for her, and I did my best to encourage this line of investigation. From her words, I was able to pick up on Carrie noticing that what may constitute a successful lesson in terms of lesson flow, student interaction and engagement, and maintaining classroom discipline may not be a successful lesson in terms of student learning and retention. I felt that I could capitalize on her current thinking and possibly extend her thinking toward the bigger issues of planning and assessing her students’ learning.

I would like to follow activities such as this with what I called an Exit Ticket. I used a similar idea last quarter at Creekview Meadow, but I think I want to change it to get more students’ thinking on paper. This time, I would give the students three open-ended questions about the activity near the end of class, rather than simple yes or no questions. This way, by the time they leave the room, I get a pretty accurate snapshot of their current understanding (Carrie, lesson plan feedback, week 4).

This sharing of my own experiences and her subsequent reflection on the idea I had given spurs a line of thinking that leads Carrie to consider alternative forms of assessment at the conclusion of her lessons. I was thrilled to be getting honest and
authentic examples of how our uses of reflection were creating a direct impact on her classroom performance. “I will be asking them to write about transformations on Friday. Hopefully, this will allow me to see how they each think about rotations, translations, and reflections” (Carrie, post-lesson observation debrief, lesson #1). At this point, Carrie had only come to assume the role of teacher for less than four days, but she clearly demonstrated a commitment to continuous self-improvement in her new role and a commitment to the students in her class based on her constant reflection of what would be effective for her students’ learning.

They can work in groups!

In a second teaching episode in the latter weeks of her Winter Quarter field placement, and what she describes as her “most successful lesson from three quarters of field experiences” (Carrie, post-study questionnaire, Question 9), Carrie chose to use group work based on contextualized problem solving to emphasize the importance of the Pythagorean Theorem. Knowing that I would inevitably ask for her rationale for placing her students in their respective groups in her lesson plans and in the following debriefing session, Carrie already formulated her justifications for the placement of students in groups. “I carefully selected the students’ groups so that I could give them a problem that the students in the groups could be interested in” (Carrie, Winter lesson plans, week #3). Thus, the series of reflective questioning that I would use after every scheduled observation had become almost second nature to Carrie. Rather than trying to construct a response to the grouping rationale question
on the fly during our post-observation debriefing, this issue had become a reflective consideration during her planning and preparations.

As this activity progressed, the student groups were allowed twenty minutes to solve their problem and create a visual representation of their solution and their problem-solving methods. Then, each group was to present their work to the class and answer any questions that may arise.

I could not believe how awesome the students did today! Each group was able to solve the problem I gave them, and they were all able to answer the individual questions that I gave them as I circulated throughout the room as they worked. I even deliberately placed four of the inclusion students in the same group, just to see what they would be able to do on their own, and they did the best job of explaining their work to the class! (Carrie, post-observation debrief, lesson #3).

Further, Carrie continued her practice of reflecting on the day-to-day problems, questions, issues, and successes that naturally occurred from her teaching.

They can work in groups after I teach them how! Discovery learning takes some time to get used to and I have found that some of them almost need to be trained to work in groups or to discovery learn (Carrie, Winter reflection, #6).

Upon hearing and reading these statements, I knew that some progress toward becoming a reflective and thinking teacher was being made. After three weeks of trial-and-error in trying to get her cooperative groups to function independently without her constant presence and to work as a team relying on the students’ own
strengths and weaknesses rather than her direct instruction, Carrie audibly and physically reflected on her Pythagorean application lesson, the importance of engaging the students engaging in meaningful mathematical activity, and the importance of setting expectations of using student thinking as a way to fuel class discussion.

Carrie Moves Toward Teacherhood

As the weeks of Winter Quarter progressed and her acceptance level with her class and comfort level within the school community grew, Carrie developed a willingness to use her classroom practice and interactions with other teaching professionals as grist for her reflective mill. Her written reflections also developed a more conversational style in the form of self-questioning. This was most evident as the plans for her instructional unit on surface area and volume were put on hold in favor of a school-wide, principal-mandated review for the State Achievement Test given to every fourth and eighth grader. “After cramming all of that information into the students, I thought to myself, was it worth it?” (Carrie, Winter reflection, #6). She continues,

If teachers were not in this time crunch to drill everything they can into the students before the test, they could take their time and really teach the concepts. I mean, talk about a lot of ‘stuff’ to learn! Formulas for area, surface area, and volume just became a blur to them since I had only two days to
teach all of it. I think they had become formula robots; this leads me to believe that the material was covered too fast (Carrie, Winter reflection, #6).

By this point in the quarter each of the four preservice teachers within the study had come to expect the stock reflective questions that I would ask during the debriefing sessions that followed my observations. But, this reflection excerpt led me to feel that Carrie had independently begun to ask these questions of herself whether I was in her classroom or not. While this self-questioning spurs her own reflection and the articulation of her contemporary thinking regarding the current level of accountability issues facing schools, Carrie’s question also provided a pause in her thinking as an opportunity to receive written feedback on her thoughts from her university supervisor.

Questioning becomes a source for learning.

Interjecting my own thoughts and open-ended questions about the current standardized testing movement opened the door to an extended conversation about testing during the current week small group discussion.

Well, we know what the research tells us about cramming, but have we, as a community of teachers, changed our behaviors to meet our beliefs? Some have, others are waiting until retirement, and still others are waiting for someone else to do it for us (US, Winter small group discussion, week 6).
Considering the feedback and questions I provided as think-abouts throughout the course of her teaching day, Carrie found herself constantly thinking about her work as a classroom teacher.

The feedback that we received from our reflections and the questions you’d throw back at us helped me to think about some of the bigger issues that we were facing. For me, the submission of my reflection and the feedback I received became a delayed conversation between us that started sometime during Winter and just continued until now. I think I am going to miss getting this type of interaction next year when I get my own classroom (Carrie, post-study focus group).

Thus, I felt tremendously encouraged that the work I was doing was reaping positive benefits in some of my preservice teachers’ classrooms and also in their minds.

Questions arise from classroom practice.

Encouragingly, the issues of planning and lesson delivery were not only the only problematic issues for some of my preservice teachers. One of these larger issues that arose during the Winter Quarter for each of the preservice teachers in the study was how to cope with student absences and their subsequent make-up work. Since each of the participants found this to be a troublesome issue, I chose this topic as the focus of a small group discussion in the next to last week of their teaching experience.

It gets so frustrating keeping up with which students have turned in assignments and which ones haven’t. I have had one student suspended for ten
days, and he has not asked for any of his work, and I don’t know what to do about it. I know I should be after him to turn in his work, but at the same time, I have worked so hard trying to get them to be independent and do this on their own (Carrie, small group discussion, week 8).

While the discussion allowed the preservice teachers to vent their frustrations regarding student apathy toward grades and homework, Carrie goes further by using the discussion to fuel some further reflective thought regarding her own student absence and make-up work policies. “All of this talk of absences and student make-up work really got me thinking” (Carrie, Winter reflection, #8). In describing her current situation and thinking,

Students in eighth grade should be responsible enough to know that they will need to do make-up work, and they should ask for it. If not them asking for it, their parents should ask for it. As much as I did not want it to come to this, I will be going around the class and target students who need to turn in work. What really bugs me about this is that these students know what they are doing! Their assessments prove it! However because they are not doing their homework, their grades are suffering (Carrie, Winter reflection #8).

*Reflection generates policy-in-the-making.*

*Based on the small group discussion and her mounting frustration caused by the cognitive dissonance raised by the juxtaposition of her wanting her students to be independent learners and wanting her students to experience the successful feelings*
of earning good grades, Carrie uses her reflection to pose a possible solution for her future classroom and the possible implications of her policy-in-the-making.

I started thinking of different ways to manage these students. Perhaps I could give them the option of choosing their test grade averages over their entire class average. For example if Suzy scored an A average for the quizzes, test, and projects for the six weeks, but scored a B average including homework, then she gets the higher grade. On the other hand, this may cause some student to take chances on their test scores because they are lazy and don’t want to do the homework. If I decide to make the tests and quizzes more challenging, they could do worse in the class, and there is no going back (Carrie, Winter reflection, #8).

While she did not have the power within the classroom or within the school to implement and test the viability of her new plan, I interpreted this reflection as an additional definite sign of personal and professional growth for Carrie. In bringing the topic of conversation to the table, I merely provided the catalyst for her reflective thinking by presenting a topic for discussion in our small group without providing any specific concrete solutions. It was my own form of modeling the constructivist classroom instruction pedagogies that I was wanting them to use, but I honestly do not feel that any of my participants caught on to what I was trying to do. However, I was happy that their opinions and beliefs about student absences and make-up work were surfacing this early since it had traditionally been a topic I had reserved until
Spring Quarter to raise. Clearly, Carrie’s weekly writing was now demonstrating a maturing level of reflection as she reflectively considers a problem of practice, projects a potential course of action, and then, considers the possible implications of her actions in terms of students’ perception and student learning.

Growth from problematization.

Overall, I felt that Carrie’s Winter Quarter field experience was a time of problematic circumstances and productive change and growth on her path toward becoming a classroom teacher. Through her active pursuit of self-improvement and a relentless search to experiment with different levels of student interaction and communication through group work and class presentations by her students, Carrie was able to develop an independent classroom presence and implement her own style of teaching aligned with her personal beliefs. Reflecting on the ways in which she felt she had changed over the course of the quarter, Carrie noted that

I do spend a great deal of time planning lessons. When planning these lessons I think of students’ responses and where I expect them to have difficulty. I am beginning to see what I want to teach from the viewpoint of some of my students. When I am thinking about how I am going to present a lesson or activity, I am thinking about how [names of specific students] are going to see it, and what is going to cause them trouble. I am also more organized this
quarter; each lesson flows and does not jump around (Carrie, Winter competency packet evidence, item P&P #2).

*Further, Carrie was also able to capitalize on the opportunities for reflection and questions from me that problematized her experience and pushed her thinking in new directions.*

[My university supervisor] consistently presented ways to improve the content of my lessons. He would almost be a devil’s advocate in the way he would present counterexamples to what I was thinking in my plans. This forced me to think deeper about the connections I could help the students make. He also focused my attention on reflection about how students would react and respond to my lessons (Carrie, Winter supervisor feedback form).

As she was able to refine her initial teacher thinking in light of classroom realities, Carrie summarizes her Winter Quarter experience in the following way.

I am becoming a very reflective person. After each lesson I write a blurb about how the lesson went and how it could be improved next time. I didn’t think of these things when I was teaching this past autumn. Where did the student have the most difficulty? I am also thinking of these things before the lesson. Therefore, sometimes I will write a lesson plan, reflect on it after it has been written but before the lesson has been taught, and I will modify the lesson once more, sometimes even twice! (Carrie, Winter competency packet evidence, Item R&P #1).
Summarizing Carrie in Winter

Considering the entire picture of the Winter Quarter field experience, I feel that Carrie took great strides in becoming the teacher articulated in her Initial Writing Sample. While the goals of the program for winter was to move the preservice teacher toward greater independence within the classroom in terms of lesson planning, content delivery, and assessment, I feel that Carrie was able to reflectively develop in all three areas. When given the freedom to explore her own path and given the independent freedom to be on her own in front of her Prealgebra class, Carrie was able to exceed even her own expectations.

Carrie looked toward her first authentic teaching experience as an opportunity for growth as evidenced by the challenging goals that she set for herself at the outset of the experience. As she learned to place more cohesive frames around the often times awkwardness of ill-structured or aimless group work, and found clever and inventive ways to incorporate language and communication into her formative and summative assessments, Carrie was able to develop an on-going reflective, yet delayed, conversation with her university supervisor as she reflectively reconciled the issues that presented themselves in her classroom.

Carrie in Spring

The Transition to Student Teaching

Coming directly out of a Winter Quarter field experience in which she felt independent, energized, and empowered with her newly-honed skills and enthusiasm
for teaching content through problem-based frameworks and questioning and structuring lessons so that students are enabled to work collaboratively in structured groups and encouraged to communicate their mathematical thinking with each other and in front of the whole class, Carrie felt as if she would be able to meet any challenges that her student teaching placement could offer. With a strong sense of pride in her teaching abilities and confidence in her developing and reflective teacher style, Carrie considered herself the “queen of asking questions that get students to start thinking, and I am getting better at asking more open-ended questions that allow for more discussion” (Carrie, Winter reflection, #9).

*Without being overly confident, she maturely realized that her small class of eighteen compliant, urban, middle school students was an easy audience that she could lead with few, if any, disruptions to the class or her lesson plans. Deep down, I felt that she hated to leave her teaching Utopia and to leave her middle school class that had grown fond of her.*

I know that my students [in Winter Quarter] were able to learn through the activities and groupwork that I created for them to work on, but I readily admit that I did not always see everything that was going on in my classroom. I personally didn’t find anything wrong with the little bits of singing or talking they were doing. They were eighth graders, and I do not want to hinder them from being themselves. But, as I move into my student teaching experience, I need to make sure that I keep my eyes and ears open to everything that’s
going on, even when I am helping an individual student (Carrie, Winter reflection, #9).

Knowing that she would be going to a secondary school for her next field placement led Carrie to believe that she “would definitely need to work on developing a sense of withitness” (Carrie, Spring Quarter goals, #2) if she were to successfully implement her teaching style with a less-focused audience of high school students.

Unsecured placements.

Carrie’s transition from the suburban-esque middle school to her student teaching placement was not as smooth as either of us would have hoped. Through no fault of her own, the college Field Placement Coordinator and departmental Program Manager had a difficulty receiving official notification from the urban school district that would confirm her placement within one of the city’s most challenging schools. Due to the bureaucratic hurdles that had to be cleared, Carrie’s arrival at her Spring Quarter placement was delayed an entire week, but her enthusiasm to do her best work was no less diminished.

Carrie’s new placement school.

Whereas her previous school had been classified as an urban placement based on demographic information maintained by the city school district and the state department of education, its feel was overwhelmingly suburban. By contrast, Celestial High School, her field placement for student teaching, lived up to the
stereotypes of the typical urban school that she had feared months before. Located on
the west side of the city’s urban center and northwest of the university main campus,
the area served by the school was surrounded by endless rows of strip malls, fast-food
restaurants, and low-rent housing complexes predominantly filled with undergraduate
college students and immigrants who had recently arrived from East Africa and
Central America. Rumors of gang violence within the neighboring community
prompted the school to develop a stringent dress code banning bandanas, sagging
pants, and white t-shirts.

While the school district made many attempts to accommodate the vast range
of primary languages present within the school, restricted school budgets and rising
costs of daily operations drastically limited the amount of physical and human
resources that were available to the school administration and faculty (Carrie, Spring
reflection, #2).

Even though the school does make some forms of technology available to the
students, there is not nearly enough for all the students. Ms. K. [Carrie’s new
mentor teacher] and I have agreed that we will just try to do the best that we
can with what we have (Carrie, Spring small group discussion, week 2).

Carrie’s new mentor teacher.

Ms. K. had served as a mentor teacher for other secondary mathematics
preservice teachers in all three field experiences during the four years prior to
Carrie’s arrival. As an eight-year alumna of the same teacher preparation program in which Carrie was currently enrolled, Ms. K. was

Very familiar with the ideals and philosophies of the program, and did her best to help me to see the connections between what I had learned in the program and what I was seeing in the classes I taught (Carrie, focus group transcript).

Actively involved in national and state organizations supporting the professional development of mathematics teachers, Ms. K. was able to share many of her own personal resources with Carrie as well as her own experiences as a newer teacher in a challenging environment. Hearing of how her new mentor teacher also recently earned National Board Certification gave Carrie “a major new goal after I am able to finish student teaching and get my teaching license” (Carrie, Post-study questionnaire, item #17).

Thus, Carrie and I felt comfortable entering her new placement armed with her newly established teaching style and a plethora of ideas for activities to engage students.

I decided that I would mainly run my classes with group work. The plan was to have a problem of the day on the overhead while I walked around to check homework for effort. Then, I would give the groups their task for the day, and they would work while I circulated to facilitate their learning in the activity (Carrie, Spring reflection, #1).
New contexts create new difficulties.

But, as Carrie quickly experienced, her current students were not the same learners that she had successfully worked with just three weeks prior. As noted in her initial reflection of the quarter,

These classes are extremely hard to control! Students are constantly out of their seats, dancing around the room, and some just walk around aimlessly looking for the tissues or someone to talk to. There has been so much resistance from them and group work has been non-existent. I asked one student to wake up, because she had fallen asleep, and she exclaimed ‘I’m sorry, but do you know what it is like to only get three hours of sleep because you have a three-month-old that keeps you up?’ (Carrie, Spring reflection, #1).

In a separate account of how she had difficulty establishing a connection with her new learners, Carrie shares with our community of five one week that “I think a few girls in my third period class call me ‘Whitey’ behind my back” (Carrie, Spring small group discussion, week 3).

Within a few short weeks of her arrival, Carrie was immediately aware that cultural, language, and social barriers were getting in the way of the rapport she so desperately needed to establish. In some ways, I began to feel that the success that she had experienced with the students on Horse Park Middle school had come too easily. She did not have to coax a willing group of student to participate in her activities. Within her new placement, she was facing the apathetic nature of
disinterested students who in no way wanted a change in their daily routine that had been established with Ms. K.

Carrie Grows from Classroom Adversity

It seemed that with every passing day, Carrie was being tested by her students and pushed to find ways to maintain a sense of daily order to get her work done. In presenting ideas to see the issue from the students’ point of view, I suggested these questions to get her to think more like her students.

Even though you entered Celestial High with a clear game plan, Carrie, what is it about this school that is causing your strategies not to work? What changes are you making? Are they merely procedural or are your changes working at the very core of how these students have come to play the game of school? You mention to me that you are going to have to put your foot down to stop some of the behavior you are seeing, but what are you going to use to reinforce your foot? (US, Spring reflection feedback, #1).

Classroom difficulties have complex causes.

This year, Ms. K. had accepted the extra work of teaching three different preps each day, and in return was assigned to an additional duty period rather than teaching an additional class. Carrie began taking control of the less-populated morning Algebra classes before taking the Geometry and Precalculus classes later in the day. While the first period classes contained fewer students, the challenges they
presented were no less challenging. “I did not anticipate being unable to reach so many students. Seriously, my first-period class was IMPOSSIBLE to reach. During the last grading period, four students passed out of twenty-two. This was shocking to me!” (Carrie, Post-study questionnaire, item #11).

While her teacher training from the university in the first three quarters of the year-long program did include some training for dealing with special needs learners and all university classes were required by the program to weave threads of multiculturalism into their syllabi, Carrie was hard pressed to find common ground in relating to students so very much different from her. While I didn’t want to reduce the difficulty she was experiencing in her new placement to one issue that focused on race, I felt that her actions, as well as the actions of her students, could possibly be motivated by unspoken racial tensions.

When you say that the class is against you, Carrie, what do you really mean by these words? What was it about your two prior placements that you didn’t have to worry about this? How much of a ‘disenfranchisement effect’ do you feel you are experiencing? Could they be viewing you as ‘whitey’ or as the object of a taboo cultural hatred that goes beyond the walls of this school? (US, Spring reflection feedback, #2).

I honestly felt that I did not need to demand answers from Carrie in response to the questions I had posed in her reflections. Based on her performance over the past two quarters and the interactions we had shared when she had questions about what I was trying to say to her in our delayed, reflective conversation, I knew that she
was hearing my feedback to her thoughts, even though, this time, the answers were not coming as easily to her. However, I took this as a sign of positive growth for Carrie. In the Winter Quarter, we had worked through many of the nuts and bolts issues of planning, implementing, and assessing her lessons. Now, in what seemed to me to be a natural progression, Carrie was encountering and figuring out her own solutions to more complex issues in the world of teaching and learning how to tailor her non-traditional form of instruction to diverse audiences.

Defiant attitudes and strong resistance.

Four weeks into the academic quarter, and two entire weeks into her assuming control of her mentor’s teaching load, Carrie attempted to implement a geometry lesson in which students were asked to investigate the measures of angles inscribed in a circle through group work and problem-solving. Since I was waiving the requirement of seeing the preservice teachers’ lesson plans before their implementation as a means of making lesson planning more personal and meaningful for them, no lesson plan could have accounted for the level of distraction and disinterest that I encountered from the students when I came to Celestial High School for a scheduled observation and conferencing with Carrie. I had come to expect Carrie to have control of the classroom regardless of the noise level within the room and to have a clear direction for the activities she asked her students to complete.

However, as I entered the room for my first scheduled observation late in her teaching day, Carrie already looked frazzled and harried from all that she had
experienced in the course of the previous seven periods. While I expected some level of student resistance to her lesson based on the comments she had made in her reflections and within our small groups, there was too much going on in this particular lesson for one person to notice.

Within my observation notes, I drew her attention to many of the female students in the room were off-task and talking, even two students step-dancing in the back of the room (Carrie, Spring observation notes, lesson #1) when their task was to investigate angles in circles. Trying to bring the girls back into the fold of the class, Carrie attempted to direct their attention to the task at hand, but was met with defiant attitudes and strong resistance (Carrie, Spring small group discussion, week 4). In recounting her own interpretation of what was to follow, Carrie summarizes her actions within her weekly reflection almost in an attempt to seek my reassurance that she did the right thing.

My next step was I asked to see the most vocal girl after class. I tried talking to her, but she would not speak to me; she wanted to speak to Ms. K. who was busy. Then, she just walked out the door while I was saying something. So, I wrote her up and called home to explain the situation. (Sigh) This tells me that she does not view me as the teacher. Ms. K. is the teacher in her mind, and in everybody else’s. I honestly cannot say if this will ever be my class (Carrie, Spring reflection, #3).

My experience contains lessons for Carrie.
I picked up on Carrie’s overworked nerves and her mounting frustration at a classroom that had run amok with disinterested and unmotivated students. Even though I was going to be late for a dinner engagement across town, I stayed in Carrie’s classroom an additional hour after school was released as we discussed possible strategies for improving her classroom management skills. I shared with her, almost immediately, that all of the occurrences that she had experienced were not completely her fault, but I also encouraged her to think about her personal actions and her expectations for the students that could have been fanning the flames of unrest.

Yes, we are facing the end of the school year, and with the break in the weather, everyone wants to be outside. I think we need to focus on the group structure you are currently using, the arrangement of the desks and tables in the room, and using your eyes and your voice to be assertive (US, Post-observation debriefing, lesson #1).

Small changes can make a big difference.

Having only recently returned to my own personal files to glimpse at my own personal journey through my preservice teaching experience, I shared with Carrie a few of the lessons that I had picked up on along my way of becoming a classroom teacher. I quickly gave her some examples of using voice inflection to get students’ attention, and gave additional examples of how direct eye contact can convey the message to students that she needs their attention. Carrie initially did not want to
resort to threats or yelling at students, but at this point, she had admitted that something needed to change in the way that students perceived her and in the way she presented herself and her lessons to the students.

In relating the attempts she had made to build rapport and relate to these students in her class, Carrie noticeably struggled in knowing how to cope with their attitude and disinterest. Within her reflection on the events and actions of the students in her geometry class, I attempted to offer a few suggestions to steer her thinking in the direction of lesson structure to combat the students’ unwillingness to comply with her requests.

*We could give them a crash course in how to work together in group, Carrie. Could this be part of the problem as well? Do they have the maturity, or have you made clear your expectations for how you want them to work together? Based on their past experiences with group work, or how they use groups in other subjects within your building, could this be what they do in other classes? Don’t automatically assume that they know how to play the rules of your game! (US, Spring reflection feedback, #3).*

Carrie not only faced resistance from the students in their actions, but also in their attitude toward what she was trying to teach. As evidenced in her written thoughts I read each week, Carrie continued to develop the reflective and on-going dialogue she had used in Winter Quarter as an additional opportunity to question herself and reflectively respond to what she notices happening around her.
Why aren’t my students working in class? They don’t want to be there. Its nice outside and they know summer is coming. They don’t like math. They don’t understand math. Some of them have already failed for the year. Many of them cannot add simple numbers such as -2 and 4. As soon as I walk away from their group work table, they stop pretending to do the math (Carrie, Spring reflection, #4).

As a further example of her self-questioning style of reflection later in the quarter, Carrie examines her students’ current attitudes toward the subject she teaches.

When did all of their bad attitude and bad thinking about math start? I think many years ago, possibly in elementary or middle school, these students have linked school-related math to ‘boring’ or ‘not fun,’ and they have linked other non-school math as ‘non-math’ and ‘fun,’ just like the Suduko I gave them at the end of class yesterday. They don’t see that as math, and they dove right in (Carrie, Spring reflection, #8)

Unraveling her puzzles of practice.

While I sensed that these reflective excerpts yield evidence that Carrie is struggling in finding ways to relate to her students on personal and professional levels, I was encouraged that the verbalized reviewing and rethinking that she offers about her classroom difficulties moved beyond a basic reporting of classroom events. While she had reached this level of reflective thinking on a diagnostic level with her teaching practices, she was not putting the same degree of thought into the social and
political issues at work in her classroom to the point of engaging in a natural and ongoing conversation with herself with the expressed intention that she will receive suggestions and feedback on her ideas from me as we both searched for solutions to her troubles relating to her students.

At first, all of the feedback that we got was kind of overwhelming. It’s funny now, but I first thought that all of his questions and comments that I got back from the very first lesson plan I submitted was a bad thing, and I felt like I had to re-do them. In fact, I did revise and resubmit it, but as we moved through the field experiences, I would write my reflections knowing that [Tim] would answer or give some suggestions about where to go and what I could try next (Carrie, focus group transcript).

While she did not have the experience or the confidence within herself to resolve her problems of practice on her own, I felt that she was active in looking within and without her own self for possible answers and courses of action, and as supporter and cheerleader for their development, I was willing to do all I could to help her.

With the difficulties she was experiencing in establishing rapport with the students, Carrie also struggled in establishing an authoritative presence in the room as well. Rather than resort to “acts of desperation” (Carrie, Spring small group discussion, week 3) such as yelling at her students to gain their compliance in her activities, class discussion, and group work, or sending her students unattended into the hallway outside her room, Carrie had numerous conversations with her mentor teacher, me, and her peers within the cohort to find classroom management strategies
that would blend naturally with her personality and the sense of community that she was trying to establish with her developing, collaborative teaching style.

Realizing that “I am a passive teacher” (Carrie, Spring reflection #5), she engaged her developing teacher thinking in conversational-style written reflections that she developed during Winter Quarter as she attempts to seek a root cause for why she is having so many discipline issues in her first weeks of teaching. In what I noticed as a direct polar opposite to the actions Charles was taking by playing a blame game, Carrie had taken a more mature and more reflective approach by first looking inwardly for solutions to the issues she is experiencing. Carrie knew that she needed to assert herself.

I need to get tough, and I think that they will respect me more for being tough. When those choice few students are still talking when I am talking, I am going to have to put my foot down. I also have to decide when enough is enough. I can tell them to ‘listen’ or to ‘sit down,’ but when they do not listen to me (or just laugh in my face and say I am funny), I have to stick up for myself by giving detentions or 180s. Why haven’t I been tough yet? I want them to like me. But, I must also say that the ‘I want them to like me phase’ is fading. More than anything, I want them to listen and respect me (Carrie, Spring reflection, #6).

Here, I feel that Carrie was first coming to realize the impact of my words during our first Spring Quarter post-observation debriefing just a few short weeks ago. At that time I pressed Carrie to reflectively examine her working relationship
with the students and directly questioned why she was so worried about being liked by the students. At the time I asked the question, I felt there was too much going on in the classroom for her to actively consider the implications of my question in light of the student resistance she was experiencing. Yet, as Carrie began to put more assertiveness into her words and eye contact with the students, and as she also began to follow through with the threats she had made for specific students, Carrie pressed her thinking, even to the point of reaching some personally uncomfortable conclusions. As a result of her introspection fueled by our reflective interactions, Carrie put forth one cause for her classroom management difficulties. While I suspected, and also suggested to her, that this was not the only and exact cause to her problem, I was no less encouraged as she made the furtive attempt to address the situations and articulate her current understanding in light of the actions of the students in her classroom. Once she made her contemporary private thinking public, we were able to form a plan of action to address her discipline concerns.

As the weeks progressed and Ms. K. began to fade from the immediate view of her students, Carrie was alone in her classroom and began to become more assertive with her students. “I have been using my teacher voice lately! Unfortunately my throat hurts and I might lose my voice, but I have a teacher voice!” (Carrie, Spring reflection, #7).

Teaching Goes Beyond Knowing Content.

With three full weeks left remaining in the six-week student teaching requirement, and after a great deal of introspection fueled by our conversations about
how I dealt with disruptive students in my teaching, Carrie was able to reconcile her thinking about classroom management and further examine the verbal exchanges she has with her students. As I knew in my heart she would, Carrie was able to take a dismal situation, learn from it, and then begin to view the disruption as a positive and use it to her advantage.

At first, I thought I was having trouble in the classroom because the students were resisting me. I believed that the students thought the class was boring because I was teaching the class. Now, I know them a little bit better, and I believe that they think the class is boring because they don’t want to be in school right now. My new approach is to use the constant undercurrent of distraction to my advantage. I join in their distraction and pull it around to what I want to talk about. This is working better than simply saying ‘be quiet’ or ‘listen up.’ Many times they do not catch how I manipulate their conversation to my conversation. I have adapted my teaching to the students I currently have. It’s chaotic, and not what I expected, but its working (Carrie, Spring reflection, #8).

Arriving at meaningful rapport with students.
I smiled pleasantly as I read her words and knew that words I had used earlier in the academic year had been a source of learning and meaning for her later in her field experiences.

Ah, Carrie, this is what I meant at the beginning of Winter Quarter when we were talking about using what is already going on in the room to your advantage, I had said it a couple of times that one day at Horse Park Middle School this winter, but at the time, I think you didn’t realize what I was talking about. Now, you honestly know that you can use what your students already know as a basis for what you are planning to teach. Once you clearly set the expectation to the students that they are accountable for their own learning, then they come to expect it. Just think what great things you would be able to accomplish if you were able to teach this way for an entire school year! (US, Spring reflection feedback, #8).

Thus, rather than trying to work against the noise and distraction in the room, Carrie had found meaningful ways to adapt her teaching style to the way her students interact with each other. When I came back to Carrie’s same geometry class that was so chaotic when she had first taken control earlier in the quarter for a second observation with this group, I was very pleasantly surprised at the clear explication of short term goals and time limits for activities that Carrie was able to provide (US, Spring lesson observation notes, lesson #5). Rather than placing herself on the outside and demanding their attention and respect, Carrie, too, had learned the all-important lesson of meeting the students where they are, as evidenced by the way she
was able to turn the students’ conversations at the beginning of the class as a segue to her planned activities (US, Spring lesson observation notes, lesson #5). She was clearly interacting with them from within their community on a personal level, and thereby earning most of the students’ attention and respect before directing their attention to her learning goals and math activities.

*Pulling it all together.*

Additional teacher growth can be found in Carrie’s reflection about the comments that her students make to her. She had begun to notice that her response and reaction to their terse words could carry a great deal of influence in how the students would approach her lessons.

If I had a nickel for every time a student said, ‘this is boring.’ Out loud in class, I might be rich. While this would have bothered me weeks ago, now I look at them and say, ‘No, this is fun!’ They usually give me a smile and some sort of explanation such as, ‘I know. I’m just tired.’ Honestly, I think some students say mean things just to have something to say or to hear themselves speak. I am beginning to believe that ‘This is boring’ translates into ‘I already know this,’ or ‘I just don’t feel like doing this right now.’ ‘I don’t get this’ actually means ‘I’m too lazy to read the problem’ or ‘I just don’t feel like doing this right now’ (Carrie, Spring reflection, #8).

So, as Carrie’s student teaching experience drew to a close and her mentor teacher re-entered the classroom environment in order to prepare students for their
final exams, I was ecstatic that Carrie was able to reach a point at which she was comfortable with her newly found assertive classroom nature, and I was incredibly proud of the work she had done across the quarter.

I think Autumn and Winter Quarter gave me the courage I needed to know I can teach. What happened in this past Spring Quarter gave me the challenges I needed to pull it all together and to survive my first year of teaching (Carrie, Post-study questionnaire, item #14).

**Summarizing Carrie**

Looking at the entire span of our more than thirty weeks together, I noticed that Carrie began to approach her classroom practice with a more mature perspective and a few realizations about some big picture issues about teaching. Due to the problematic nature of her Spring Quarter placement and the issues she needed to address to reach her students, Carrie summarized her new outlook toward her work within the classroom.

I know that I am not always going to be the perfect teacher who gives excellent explanations off the top of my head. I now know that I am a learning teacher, and as I teach, I still learn (Carrie, Spring reflection, #9).

Drawing strength in the new integrated perspectives of teaching and learning that had come to fruition during Spring Quarter, Carrie begins to see herself as an equal within the math department of Celestial High School. “It was also really reassuring to
know that there were some teachers with over thirty years experience having exactly
the same difficulties as me” (Carrie, Post-study questionnaire, item #15).

During our final focus group discussion, I asked each of the preservice
teachers to encapsulate their thinking about the changes that they had made in their
own thinking, reflection, and beliefs. I was impressed that Carrie had matured in her
thinking to reach the conclusion that the work of teaching is highly problematic, and
that, even she might not always have the correct answers. As she illustrates in two
separate passages in which she reflects on the totality of her experience, “You know,
in many ways, I did feel like a student. But, rather than deriving a formula or trying
to calculate a derivative, I was actually applying what I’ve learned to teaching”
(Carrie, Spring reflection, #8). Further, she adds, “Teaching is difficult, especially
with thirty unmotivated students in your room, but it’s all about learning to read your
students and doing what you know is best for them as long as it is consistent with
what I believe” (Carrie, focus group transcript).
CHAPTER 6

THE CASE OF AZEEM

Introducing Azeem

Azeem is a twenty-five year old Caucasian male who came to the program with a slightly different background than the other three participants. While he did enter the program directly after completing his bachelor’s degree in mathematics, Azeem spent two years of his undergraduate years pursuing a degree in engineering; he worked for four quarters as an assembly engineer with a local engineering firm as a co-op student. While the life experience he gained was vital to the completion of his degree, he came to realize that the day-to-day life of the engineer was not what he was expecting from a career. “After pursuing the glamorous life of an engineering intern, I didn’t find contentment or enjoyment in it and working in an office all day was definitely not for me. Becoming a teacher was the next best option” (Azeem, Pre-study questionnaire, item #1).

Knowing this piece of information was an immediate connection between Azeem and I, neither one of us had chosen teaching as a first possibility for a career, but rather mystically, it seemed that teaching had chosen us. However, Azeem did have an insight to the general structure and expectations of the program and what to expect from the work of teaching since his wife had completed her preservice teacher
preparation in early childhood education the year before his admittance to the program.

While Azeem brought a high level of maturity to the cohort, I felt that his initial thoughts about the work of teaching and learning tended to border on overly romanticized versions of the day-to-day interaction in classrooms between teachers and students. While he did present some progressive ideas about how secondary mathematics classes should look and sound in terms of group work and problem solving, I felt his initial encapsulation of his future classroom predominantly relied on teachers being in control and students unquestioningly respecting the authority of the teacher.

Articulating a Vision for Teaching and Learning

Projecting his vision of his future mathematics classroom, Azeem provided the following verbal picture of his math world.

The first thing I would expect out of my students is respect – even before the class would start. But, to start off my classes, I would give the students an interesting problem for them to solve, not out of textbook, but an actual real-life applicable problem (Azeem, Initial Writing Sample).

I interpreted this initial thinking as a direct influence from the work he had done as an engineer, and it shows his deep commitment for the work that students do in the classroom be readily applicable to the lives of the students. His initial words also provide evidence of a deep-rooted need for students to show an unconditional respect
to teachers in classroom settings. While I initially pressed Azeem, and the other participants, to more clearly elucidate their thinking as to what characteristics make a group of students more respectful, I found it interesting that I received no definitive answers other than each of the participants seemed to want the students to be “hard-working, quiet, and to do what is asked of them” (Azeem, Autumn small group discussion, week 6).

I sensed that Azeem was operating within two separate realms of mathematics education. His personality and inquisitive nature supported the interactive group work of engaged students working towards a meaningful mathematical product. On the other hand, the authoritarian disposition seemed to reside in a more traditional realm of teachers gaining the respect of students without earning it, and I also sensed a need for Azeem to feel recognized as the sole source of authority and information in the classroom. I had no specific root cause for Azeem’s feelings for controlling a classroom in the way he described, but I had an inclination that his view of classroom management had been shaped by his past experience in secondary schools and his professors within the university mathematics department.

Initial thoughts of group work.

When presenting his ideas of what teachers need to consider before a lesson begins, Azeem provided the following response. “A teacher should try to connect the material they are teaching to application and know the relevance of what he is teaching” (Azeem, Pre-study questionnaire, item #5). The flow of the class he
envisions would involve the students working in groups to solve their real-world problem and presenting their work to the class before he presented his own solution to the students.

But, before I would show the students the ‘cookbook recipe’ for solving the problem, I would brainstorm with them on why the problem is important and applicable to their lives. I would also like to have some kind of hands-on activity for the students to grasp the topic I am teaching; I could do this through [graphing] calculators, or paper-folding in geometry (Azeem, Initial Writing Sample).

To me, Azeem’s initial thinking about teaching demonstrates a personal value for group work, student communication while engaging in the act of problem solving, and making the mathematics being taught relevant to the students and their lives. Yet, I also detected an odd blend of two contrasting pedagogical blend of teaching pedagogies that may not easily coexist. As part of my initial goals for our work together, I knew that I would need for Azeem to experience the classroom as a teacher and then decide which school of thought most authentically matched his personality and his dispositions toward how mathematics should be learned.

Initial thoughts of relevant content.

However, this initial rift between his projected teaching strategies seemed to be more cohesive as a result of his first set of university coursework that preceded his first field experience. During the first Summer Quarter of the teacher preparation
program, the preservice teachers within the cohort experienced their first mathematics methods course and an educational psychology course specifically directed at the learning processes of students in mathematics and science. As a result of his engagement with the content of these courses, Azeem became more familiar with examples of problem-based and socio-constructivist lesson frameworks. With some further thinking about how students learn best, I feel that Azeem entered the Autumn Quarter with a more concrete picture of his classroom vision.

Students are less motivated to learn when they don’t see the reason for learning the content in the first place. The best solution to this is introducing real-world examples and problems for each new topic they learn. This seems like it would create a lot of additional work for the teacher, but the potential benefit to the students makes it well worth the work (Azeem, Autumn reflection, #1).

Clearly, Azeem had come to realize, as did I, that the students and their learning should be the focus of each lesson, regardless of the amount of work it would take to create challenging problems within their range of students’ abilities and to give feedback to the students and create assessment instruments to gage their learning and understanding of the content. However, I did see some holes in his thinking when I considered topics that I would teach and also question their placement within the curriculum and their necessity with the growing emphasis on technology in the classroom.
I can see what you mean, Azeem, when you mention seeing the benefit of the content the students are going to be learning, but you may rethink your position after trying to justify to students that they must really know how to rationalize a denominator at some point in their lives outside of high school (US, Autumn reflection feedback, #1).

Explicating a metaphor for Teaching and Learning

Seeing his future students and his future teaching persona as forming a cohesive team in his initial metaphor for teaching, Azeem reflectively asserts, “I want the lessons to be centered on the students rather than myself. I will provide support, guidance, and leadership to them as they work toward a common goal together” (Azeem, Autumn reflection, #1). I found his pronoun use odd by reading ‘they work’ instead of ‘we work,’ and this led me to initially question the extent to which Azeem considered himself part of the classroom community he would need to create to achieve his vision. However, I took comfort in the fact that Azeem was forming this disposition on his own and early in his teaching career, whereas I struggled with the overuse of direct instruction for the first three years of my classroom practice before I began to think about better ways to do my job.

Azeem in Autumn

The Context of Azeem’s Autumn Quarter Field Experience

Azeem’s placement school.
With a firm content knowledge for secondary mathematics, strong commitments to student-centered learning, and a seemingly vague notion of how secondary classrooms operate from a teacher’s perspective, Azeem entered his first field experience at Northpoint High School. This suburban school of approximately twelve-hundred students was built to serve a once affluent suburb of the greater urban area, but due to the aging population of the surrounding area, the decreasing influx of business tax dollars caused by the construction of mega-malls in other areas of the city, and absentee land owners renting once stately homes as duplexes to students at a small liberal arts college within the confines of the suburb, the school had begun to show signs of wear and disinterest from the community that once supported it.

Over the past five years, the demographics of the “student population has begun to shift from upper-middle class Caucasian students to a more diverse mix of African-Americans, Hispanic, Asian, and Somali students from economically disadvantaged homes” (Azeem, Autumn reflection, #5). The school is kept clean, yet display cases that showcased state championship trophies from the late 1960s and early 1970s have begun to show their age. With the failure of three successive tax levies in past elections, the local school system was finding it hard pressed to meet the growing needs of the changing community, rising costs, and maintaining the physical needs of its aging secondary school facilities.

_Azeem’s mentor teacher._

Azeem’s mentor teacher for his Autumn field experience, Mr. M., was a kind-hearted man in his mid-fifties with twenty-nine years teaching experience, all but one
within this high school. His own children had graduated from the school earlier in his career, and he and his wife still live within the community the school serves. He has remained active within local and state organizations focused on the professional development of mathematics teachers and spends many hours as a mentor for first-year teachers within the building and within the school district. In fact, as he was teaching and mentoring Azeem each weekday morning, Mr. M. was also mentoring a first-year social studies teacher during selected afternoons throughout the school year in one of the district’s middle schools as part of a state-mandated teacher initiation program. With such rich experience in working with preservice and novice teachers, I was happy and secure to watch as Azeem and his mentor teacher were able to forge a productive working relationship in such a short time. I sarcastically thought to myself that the Field Placement Office had finally done something right in selecting a mentor teacher.

*Poised to make a difference.*

Before entering his first field experience, and before gaining any practical classroom knowledge, Azeem had outlined his fledgling disposition for constructivist-style learning and the need for students to be actively engaged and communicating with each other throughout the learning process. While I initially thought that he, too like Charles, was using the language of the program to write what he thought I wanted to hear, I realized through some subtle cues spread throughout his written reflections that this situation could be different when I
recognized ideas and phrases that appeared in my own philosophy statement. The students I teach “already come to my class knowing something” (Azeem, Autumn reflection, #7) and “Since active engagement helps me to learn faster and better, it is better for me to teach for understanding rather than trying to get them to memorize something they will forget in a week, anyway.” (Azeem, Autumn reflection, #4).

While it is unclear if Azeem’s use of the language of the program is a direct intention to impress me or definitive evidence of his internalization of the ideas presented in his university coursework, these reflective passages implied to me that Azeem has put a degree of forethought as to how he views students and their mathematical activity. I just needed to somehow channel his words into action in the relatively limited teaching experience of Autumn Quarter so that his new understandings could be positively reinforced.

Azeem also reflectively hints that his own teaching will be a direct, yet polar opposite, influence from the experiences he had as a secondary mathematics learner. Describing himself as being accelerated in his mathematics classes throughout his middle school and secondary education, Azeem entered high school having received credit for Algebra I and Geometry and was placed as a freshman into a second-year algebra course. Recalling his mathematical past from high school, the content was,

Delivered through a lecture format and I don’t remember even being able to talk in the class. The student-to-student and even students-to-teacher interactions were not too common. My teachers were not very responsive to the classes or our needs. They were just determined to get through the material
whether understanding was taking place or not. I think my personality is serious and precise, but I can use my class time to encourage interaction so the students can learn the language of mathematics. By solving examples in class, answering student questions, and allowing the students to work in groups or pairs on class work, I can be more approachable to the students, and their understanding is more important than pushing through the material (Azeem, Autumn reflection, #4).

While I thought his personal mathematical history was nothing new, in fact, it closely matched many of the recollections of preservice teachers I had worked with in the past. His words did give some initial credence to the hypotheses I had formulated about his deep-rooted need for students’ respect and classroom control.

While I shared his articulated views of making mathematics a communal and integrated activity, I decided to capitalize on Azeem’s maturity and suggested ways for him to think beyond the content and begin to consider how to structure his lessons to accommodate the group work he so wanted to use.

I want to mention three things to you that I want you to consider with thinking about using group work in your classes, Azeem. How often will you allow students to collaborate? How will you make your expectations clear to them for how they are supposed to participate? How differently do you have to design tasks for your students so that their collaboration is necessary and meaningful? (US, Autumn reflection feedback, #4).
While I did not specifically expect a direct answer to these think-about questions within my reflection feedback, my line of questioning did open the door for him to consider the issues of student empowerment and agency within his classroom.

First Teaching Experiences

Learning from his mentor.

Through discussions that prefaced and followed direct observations of his mentor teacher’s lessons and interactions that were initiated through the program’s structured reflection prompts, Azeem realized that “I can see many of the same ideas I have now as a beginning teacher parallel my mentor teacher’s initial beliefs” (Azeem, Autumn reflection, #7). Azeem found it interesting and encouraging that his mentor initially felt the main task of any teacher was to deliver the mathematical concepts to the students and have every student completely understand it. However, after years of practical experience and semesters of interacting with unmotivated and disrespectful students, Mr. M. shared how the focus of his teaching has shifted more toward relating the concepts to the students in different ways to reach as many students as possible.

Yet, while both novice and expert agreed that “what the students are learning should be made as meaningful as possible, and we both have similar beliefs about the importance of good classroom management” (Azeem, Autumn reflection, #7), there were aspects of teaching that were areas of discrepancy between them.
One thing we differ on is the variety of teaching strategies that we would use. My mentor has always used the more traditional lecture with [students seated in] rows and columns. In my classroom, I would rather see more cooperative learning (Azeem, Autumn reflection, #7).

Realizing that I could also capitalize on this discrepancy in the pair’s teaching philosophies, I encouraged Azeem to explore his own thinking in a deeper way while also making suggestions for further discussions with Mr. M. about teaching.

How did you feel knowing that you and your mentor shared such similar initial beliefs about teaching? That you were on the right track? That your ideas will change over time and with more experience? Somewhat validated in knowing that you were not alone? Thinking that you might be on the same path? In what other area of teaching can you find commonality with Mr. M.? (US, Autumn reflection feedback, #7).

Bringing the vision to reality.

Thus, through reflection and articulation of his initial teacher thinking, Azeem shows evidence of a very clear image of how he wants his classroom to operate in terms of student interaction and engagement, “I want to use cooperative learning groups at least once during this quarter” (Azeem, Autumn Quarter goals, #4). But, Azeem felt an unspoken tension between what he wanted to do and what his perceived subservient position would allow him to do.
As a result of the configuration of the classroom as it is now, there is not much one-on-one interaction between the teacher and a student as well as not much student-to-student interaction. By forming groups in the classroom, more communication will occur and hopefully more learning attached with it. I am just unsure how Mr. M. would react to the rearrangement of his room (Azeem, Autumn reflection, #6).

Azeem also had some very solid ideas as to how to relate the mathematical content of his lessons.

It is important for students to take control of their own learning. Hopefully, through the use of real world examples and problems for each new topic they learn, teachers can build on their students’ ideas in ways that help each student achieve a more expert understanding (Azeem, Autumn reflection, #1).

While the overarching structure of the Autumn Quarter reflection prompts was to guide the preservice teachers to articulate their initial beliefs in multiple areas of the work of teaching, I sensed that Azeem was using the reflective format to search for validation of his ideas from me. By this, I sensed that Azeem’s past experiences in mathematics classrooms were beginning to cast dark clouds of doubt on his current thinking. It was as though I felt Azeem saying within his reflections that, I want to try this new way of teaching, but he did not have a complete picture of how successful it would be.

Gaps between theory and practice.
While these statements and images encapsulate Azeem’s contemporary thinking during his initial field experience as to what constitutes good teaching and good learning, I felt the language being used in his reflective writing remained abstract and generalized rather than directly relating to his specific classroom situation. To me, these factors suggested a cognitive dissonance between the theoretical and the practical as Azeem had yet to make a personal connection with his work as a classroom teacher. That is, without a point of reference for Azeem, the two worlds of the theoretical and the practical could peacefully coexist as long as the classroom realities stay separate from his theoretical musings about his practice.

Additional evidence of this separation between the theoretical and the practical can be found in the lesson plans Azeem created for each of his lessons. Rather than viewing his required lesson plans as a personal and thoughtful guide for what he wanted to happen during the class period, the plans “I’ve written for you” (Azeem, Post-lesson debrief session #3) were viewed as a formality, a grade to be earned, and as documents with little practicality created in advance of the lesson for the approval and feedback of those in power over him. He was not seeing his plans as integral tools that could help to shape his thinking about the content and its delivery to students.

To me, this also suggested that Azeem perceived the critical work of planning lessons as not to meet the needs of the students or to provide guidance and structure the lesson, but opportunities to seek validation and approval of those he views as in charge of his grade for his field experiences. While never explicitly stated to me or to
his mentor teacher, Azeem consistently views the relationship between himself, his mentor teacher, and his university supervisor as hierarchical. As many other preservice teachers I have supervised over the past three years had also done, Azeem initially assumes a passive and reactive role within the support triad.

Azeem may have been personally feeling the impact of being a student-teacher or of having less classroom experience, but his feelings of inadequacy did not ring true when it came time for him to assume the role of teacher in Autumn Quarter. Even though Azeem felt limited during two separate lessons, “when I was given the freedom to teach” (Azeem, Autumn post-lesson debrief, lesson #2) or “When Mr. M. let me teach today” (Azeem, Autumn observation notes, lesson #3), the reality of both situations gave Azeem the freedom to branch out on his own and implement student group work as a teaching strategy to lead his students to understand the graphic, algebraic, and interval notation for linear inequalities, and in a subsequent lesson to teach compound inequalities in an Algebra I class.

Establishing Independence

In his first two lessons of the quarter, Azeem’s student groups were based on their physical proximity to fellow group members and to facilitate easy organization by moving desks a few feet from their position in the standard rows and columns. I initially called him on such a weak rationale for placing students within cooperative groups in our debriefing session, and Azeem expressed an apprehension to change the physical arrangement of the classroom (US, Autumn post-observation debriefing,
lesson #2). In the next lesson plan I received, in which Azeem expressed a direct interest to use group work but use the same method for forming his student groups, I felt the need to interject my feelings, “YOU are the teacher of this class period, Azeem! Not Mr. M.! You are free to teach and rearrange any physical aspect of the classroom you wish as long as it matches your lesson objectives and educational goals!” (US, Autumn lesson plan feedback, lesson #3). In hindsight, I feel that Azeem knew that I would grant him the latitude to try any teaching style that he felt appropriate, but in the initial stages of our working relationship, I feel that he just needed to hear my permission.

Reconciling contrasting views.

Armed with a new sense of empowerment and an alternative classroom grouping arrangement Azeem designed, I anxiously anticipated seeing Azeem’s group work in action when I entered the classroom at Northpoint High for my third scheduled observation. I felt somewhat disappointed as the lesson progressed. Even with his ideas for group work, the structure of the class fell into the same traditional rut that I had witnessed with each of the other participants in their first lessons of Autumn Quarter.

Unfortunately, I witnessed Azeem follow the traditional review of a previous homework assignment through individual student questions and answers, the presentation of new content, the multiple representation of linear inequalities through direct instruction, and student practice with these alternative forms of solution sets to
isolated problems he would place on the chalkboard at the front of the room. Even though the students in the class were now placed into mixed-ability groups in various locations around the room, and were given the clear expectation “to get help from each other; that is why we are doing this” (Azeem, Autumn observation notes, lesson #3), the students collectively struggled to gain flexibility amongst the three representations of linear inequality solutions on their own. Most of the students had not experienced group work within their freshman mathematics class and had been trained to work individually. Rather than confirming their work with their peers within their assigned group, most of the students looked for individual confirmation of their work from Azeem.

Rethinking the tasks he assigns.

In his subsequent lesson on compound inequalities, Azeem used a deck of cards to randomly distribute the students into groups of five students throughout the room. Again, the lesson followed a predominantly traditional path as Azeem began with questions and answers from the students’ homework. This was directly followed with Azeem demonstrating and illustrating the algebraic manipulation of two isolated compound inequalities. In my observation notes, I directly questioned the necessity for placing the students into cooperative groups if he was going to use such traditional methods to deliver the content.

We will talk about this in our debriefing directly after the class, but why did you feel it necessary to place the students in to groups when you were not
going to use the structure you had created? Can you see how this can complicate your work later when you want to use groups? We are teaching every minute of every day, and through this lesson, what are you teaching them about learning groups in mathematics class from these past two lessons? (US, Autumn observation notes, lesson #3).

Even though the students had been placed into groups with the intent of gaining more interaction and discussion between them, the students complacently, and silently, did what they were directed as they copied notes on the processes involved in solving the compound inequalities (US, Autumn observation notes, lesson #3).

Yet, during the latter stages of the lesson, the student groups were given a series of related problems to solve, but as the students began their work, Azeem was again seen as the authoritative source of validation for their work and the sole source of clarification of any question they had. In both teaching scenarios, I felt that Azeem had the very best of intentions to let the students work together and collaborate to build their understanding, but as I shared with him in our debriefing, the class time allotted to the separate aspects of the lesson was not closely monitored due to the homework question and answer session, and the class periods ended without ample time to allow the groups to interact and struggle. I felt that both lessons had no sense of closure and no assessment of whether the students had met his learning objectives for the day (US, Post-observation debriefing, lesson #3).

Rethinking the content.
Even though Azeem was able to actively implement the guises of group work into his lessons, a teaching strategy that he believed “would be effective in leading all students to learning and understanding” (Azeem, Autumn reflection, #3), Azeem laments the topics he was given to teach. “I felt that I had no control over what aspects of the content I had to teach and the amount of time I could take to teach it” (Azeem, post-observation debrief, lesson #3). Here, Azeem was referring to the process-specific learning objectives and benchmarks that pertained to solutions of linear and compound inequalities written in the district curriculum guide and in the state standards for algebra he had been told to follow. Once again, I felt the impact of a novice teacher’s deferment of personal knowledge and power to official documents carefully linked to standardized testing.

In responding to my post-observation questioning that prompted the preservice teachers to reflect on the positive and negative aspects of each lesson I observed, Azeem admits to me that, “I had a hard time demonstrating the meaningfulness of the material to the students. First, I think this was hard because solving single variable inequalities is pretty dull and doesn’t have too many worthwhile real-world examples” (Azeem, Autumn reflection, #8). Further, he adds that

I struggled to find an application for the ideas they were learning. I mean, there is always linear programming, but that would mean that they would have to be able to handle inequalities in two variables when they are barely able to handle one, now. I was beginning to wonder why some of these objectives
were even in the curriculum guide at all (Azeem, Autumn post-observation debrief, lesson #3).

Thus, Azeem began to articulate through written and auditory forms of reflection, or rather echo, the restrictiveness that he and the other participants had felt in selecting what content he needs to teach and in developing his own teaching style. While his Mr. M. was able to assess that the students had, in fact, met the learning objectives that Azeem had set forth in his lesson plans in the day’s following his teaching episodes, the follow-up lessons delivered by Mr. M. were out of Azeem’s immediate control. “I feel like I didn’t do the complete job I was assigned to do. I only got about two-thirds of what I wanted to finish, and I feel like I let everyone down” (Azeem, Post-observation debriefing, lesson #3). He found this aspect of the Autumn Quarter field experience quite disconcerting.

I, um, almost feel a sense of obligation to ask Mr. M. if I can take about ten to fifteen minutes from his class tomorrow and pull together the loose ends from today’s class and the stuff that I didn’t get to toward the end. Will I ever get to see an entire lesson through from start to finish? (Azeem, Autumn post-observation debriefing, lesson #3).

When we cooperatively considered aspects of the lesson that he could improve for his next lesson, Azeem hints at his own uncertainty in making his lessons flow and fit within his allocated time.

I think I plan too much each day and am taking too much time on the material. While this isn’t a real big deal for me if it helps the students learn better, but
unfortunately, I’m in someone else’s classroom and want to stick as close to his timing as possible (Azeem, Autumn reflection, #8).

*Spurred by an unsettling juxtaposition of what he feels should happen in a classroom and the unfolding reality of what actually occurs in the classes he teaches, I was able to discern the seeds of a deepening sense of reflection begin to emerge through Azeem’s reflective writing and through our post-observation debriefing discussions during the latter stages of his fall field experience.*

Even though I didn’t have much control in what I was teaching and the amount of time used to teach it, I was able to gain experience and learn some lessons myself about how to use and control student groups. I was also able to develop my own activities and assessments for other classes I taught (Azeem, Autumn small group discussion, week 9).

*Just as he feels his students need time and opportunities to construct their developing understanding of the mathematical content he is teaching, I was encouraged that Azeem had also started to piece together his own understanding of his own classroom practice. Azeem’s developing teacher thinking and his goals begin to shift away from a re-creation of what he had experienced in classroom settings as a student and more toward a challenge of that status quo.*

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*Azeem Reflects on the Processes of Teaching and Learning*
As the fall field experience came to a close, I noticed that Azeem did begin to acknowledge himself fitting into the profession of teaching, even though each of his five lessons fell short of his intended goals.

Looking back at my lessons over the course of the quarter, I think I got too caught up in making sure that the students were able to do this, this, and this during my lessons. When I think more about the curriculum, it seems that this is the way the system has been set up. I mean, students are expected to memorize certain facts and processes for a test, and then shortly afterward forget what was only in their short-term memory. I didn’t give them time to process or problem-solve, and um, that is probably the biggest thing that I would want to go back and change about my lessons this quarter (Azeem, Autumn small group discussion, week 9).

Through questioning at the end of each observation, Azeem also began to focus a reflective lens on his own actions in the classroom as fodder for introspection, even without my standard list of questions being asked.

You know, in our night classes [at the university], I started to play a little game in my head to make the time go by quicker. I pretend to be the professor of the class answering each one of the questions that you ask us in our debriefing. Sometimes it is easier than others depending on what night class I am in, but I am coming to understand why you ask the same questions over and over has helped me think about my lesson planning more (Azeem, Autumn reflection, #8).
I feel that this only helped Azeem to adjust his image and conceptualization of good teaching and learning to include the importance of effective planning and good pedagogical knowledge.

After the past ten-week experience, I feel I’m having a hard time sometimes knowing the best way to teach the material to students so that they can fully understand. I am beginning to think that knowing how to teach the content to students may be more important than a lot of background content knowledge (Azeem, Autumn reflection, #9).

**Summarizing Azeem in Autumn**

I feel that Autumn Quarter was initially a struggle for Azeem. He had entered the field experience with a clear mental representation of the interaction and group work that he wanted his students to experience. In his mind, he had shed the limiting and process-bound lesson formats that he had experienced in his own schooling, but in practice, he continued to rely on similar structures even with his students placed in cooperative learning groups throughout the room. The main issues Azeem needed to consider centered around placing adequate structure and support in his classes for group work and learning to give students the necessary latitude to solve problems on their own.

When we get right down to the crux of the issue, Azeem, don’t the most effective lessons hinge on the tasks we ask students to do, the questions that
we ask them to consider, and the independence we allow them to figure it out?

(US, Autumn reflection feedback, #8).

Through a reflective examination of what he could have done more effectively in his lessons, Azeem was able to show small glimmers of progress in leading and facilitating his lessons rather than directing his students through every step.

Azeem in Winter

The Context of Azeem’s Winter Quarter Field Experience

An unsecured placement.

Coming from an Autumn Quarter field experience in which Azeem’s vision of effective student learning through group work and problem-solving scenarios was articulated but only partially realized due to his perceived lack of control in the class, Azeem was even more committed to implement his own teaching strategies in his Winter Quarter placement. However, the program was not as ready for a new round of placements, as Azeem quickly learned.

I was a bit disappointed because my placement was not officially confirmed until very late in the first week we were supposed to be in the schools. In fact, when I went to meet my mentor teacher, I learned that she had not been notified about me coming to her class and I wasn’t sure how she would respond to the idea of me taking over one of her classes (Azeem, Winter reflection, #1).
Preconceived notions of urban schools.  

Even with these initial uncertainties and miscues with the procurement of his field placement, Azeem looked forward to his new school with apprehensive excitement. He was to join the other three participants at various locations within urban school districts, and I once again, noted a looming sense of apprehension by having been assigned to an urban school.

Being an urban school, I had bad expectations of what the school and the families were going to be like. As I drove around the school’s neighborhood, I was impressed on how nice the neighborhood looked. But, then I thought this was exactly what happened to my wife last year in the same school district. The area directly around the school was in a decent neighborhood, but none of those families had their children at schools in the district, but rather had them in private schools (Azeem, Winter reflection, #1).

Azeem’s new placement school.

Diamond Middle School is located within the city’s large urban school district, but is located in a bedroom community north of the university. The residential neighborhood surrounding the school is predominantly filled with starter homes for young professionals and graduate students with small families. The city and community volunteers maintain local playgrounds, metro parks, and the neighborhood boasts its commitment keeping the surrounding area family-friendly. While some of the neighborhood parents did opt for a private education for their
children, the school is assisted by a strong support of parental and community volunteers as evidenced by the constant presence of students’ parents and senior citizens filling the roles of main office assistants, library and media room assistants, and classroom support for their children’s teachers. Even though the school had been on the school district’s radar screen for being in potential danger of not meeting Annual Yearly Progress goals on standardized achievement tests for several years, the school had been able to achieve small gains with each statistical report from the state department of education.

The majority of the teachers at Azeem’s Winter Quarter placement school are mostly female with the exception of the assistant principal, two physical education teachers, a science teacher, and three special needs resource staff. Even though the teachers within the building had been split up into academic teams - three separate teams for each middle school grade level, there was a sense of collaboration and community within the building strongly supported by the building principal. Under her educational leadership, the school had experienced a renaissance, of sorts, in its efforts to present student project work in the hallways and trophy cases, ambitious student theatrical and musical productions, and pictures and posters of the students that emphasize the influence of positive attitudes and the positive influence of education on the students’ lives. Yet, from the outside of the building, Azeem’s suspicions of how urban this school could be seemed grounded in his past experiences.
Azeem’s new mentor teacher.

These initial apprehensions subsided after his first day at the school as Azeem relates his reflective thoughts based on reality and not on stereotypes.

My attitude and my expectations for the students and the school have changed! To be honest, this could be a suburban school! The students were respectful to their teachers and there weren’t any horrible student misbehaviors like I expected. My mentor teacher was warm and inviting me to help in her classroom and showed no hesitation in allowing me to take over a class for the six weeks as well as collecting data for my action research project (Azeem, Winter reflection, #1).

While I was ecstatic over the positive results of such a last-minute, whirlwind placement, I did feel that I could use some questioning to push Azeem to reconsider some of his assumptions toward the negative expectations he had. Just as I had done with other participants, I attempted to problematize the stereotypes that were held about urban schools and urban students.

Let’s stop and think for just a moment about where some of these preconceptions about [the urban district] came from. What actually distinguishes an ‘urban’ school? Race? Median family income? Class status of the student body? The number of students on free or reduced lunch? Low test scores? Or, our own eyes that have been trained to view our students in terms of their differences? Why does our culture continue to allow a very
unforgiving media to perpetuate the negative impact of urban schools and teachers?" (US, Winter reflection feedback, #1).

While I did not intend for these specific questions to be addressed in any of our interactions, I felt that Azeem, as well as the other participants, needed some think-abouts to stimulate his thinking about the current status of our nation's urban schools in which he would soon be functioning as a professional teacher.

The Path to Azeem’s Empowerment

Eager to seize control.

While Azeem knew he would not be unable to assume control of his newly assigned first period Prealgebra class for three weeks after his initial arrival due to the misalignment of the university and public school academic calendars, he wasted no time to gain ideas for his lessons by reading the district curriculum guide, teacher resource manuals, asking for resources his peers in the cohort and university supervisor would be willing to share, and scouring Internet resources.

It seems like my mentor is OK with letting me try different things with the students and moving the desks to form groups. Now, I just want to step up to the challenge and not get stuck lecturing all the time but instead having group work and class discussions/presentations. I want the student to have more time and opportunity to voice their answers and questions and also allow them to answer others’ questions when they can (Azeem, Winter reflection, #1).
Having experienced quite a different array of interpretations of what it means for a mentor teacher to “be okay with letting preservice teachers try different things within their classrooms,” I was initially apprehensive about the sincerity of Azeem’s initial assessment of his new mentor teacher. But, I held these reservations to myself and chose to focus on the level of enthusiasm that I was feeling from Azeem as he prepared to assume the role of teacher. I was picking up on a direct impression that Azeem would be able to use many of the activities and teaching strategies that he had learned from his two previous methods courses as he thought more about implementing his own teaching style. “I’m pretty excited about the topics I am going to be teaching; there are so many fun activities and cool problems that I can use to teach the concepts” (Azeem, small group discussion, week #2).

Taking the fast track to ownership.

When I read his first reflection of the new quarter, I knew that Azeem had fast-tracked himself into taking ownership of his new surroundings. While he had felt limited in the amount of freedom he could have in the previous quarter field experience, I found his new mentor teacher to be very willing and encouraging to the establishment of his own teaching style. In my introduction to her and to her classroom, I noted “from the resource books displayed in her room and by the non-traditional arrangement of student desks into collaborative groups” (US, Winter reflection feedback, #1) that Ms. S. had come across as a dynamic individual who was as intent on mentoring Azeem as she was in her students’ learning. I found that

284
the amount of support and feedback she was willing to offer each day coupled with
the amount of classroom control that she was willing to relinquish so that Azeem
could establish his own presence and persona with the Prealgebra students.

During the three-week orientation to the school, his mentor, and the new
students, Azeem demonstrates a great deal of maturity as he tries to reconcile his
developing teacher thinking with his reflection on the limitations of a six-week
teaching experience. This type of reflective thinking was clearly different from the
responses that he had given to the structured reflection prompts that each member of
the cohort had been required to use during Autumn Quarter. As I was hearing and
reading his words since the new quarter began, Azeem’s reflective work took a strong
turn towards having a more personal and meaningful tone. “We [the preservice
teachers in the cohort] have had to sit through these university courses, and I haven’t
really been given the opportunity to sit down and think about my classroom in the
future and how it will work for me” (Azeem, Winter small group discussion, week 2).

Further, Azeem adds,

Over the past two quarters, many great ideas have been thrown at us to try in
the classroom, from cooperative learning groups, to using technology and
manipulatives, to discovery learning, to integration, to performing action
research. But how will all these fit into what I’m going to do next year as a
full time teacher? How will my class be set up to incorporate how I want to
teach? (Azeem, Winter reflection, #2).
Making connections on his own.

While these reflective passages emphasize a huge perceived incongruence within the mind of a preservice teacher trying to make connections between university coursework and his developing ideas for effective classroom practice, I was encouraged with the amount of courage and independence he was exhibiting. Azeem had been far too polite in Autumn Quarter to speak these words, and I took from this a direct sense that he was going to take immediate steps to make this field experience his own and to gain as much practical experience from his classroom work. This type of response had been explicated and examined in the literature on preservice teacher reflection, and I felt somewhat validated knowing I was collecting data that supported the current trends in research.

However, Azeem’s comments also point at a glaring truth in the way that the program had chosen to prepare future secondary mathematics teachers. While he realized that what he was learning from his university coursework gave many different ideas and strategies to try, his work at the university seemed distant and somehow unconnected to the experience he was gaining everyday from his students and his developing practice. Azeem’s need to explore his developing teacher thinking and the practical nature of his personality synergistically combine to propel his reflective thinking forward into how he views effective teaching and learning and an action plan for how his vision can be made so. With such a personal determination own his current field experience and to establish himself as a teacher, I felt that the best way to support his development would be to support the decisions he would
make, even if I didn’t whole-heartedly agree with them, and bolster his self-confidence in front of the students.

Reflection becomes a personal search for meaning.

Yet, true to the nature of thinking like a student and less of an educational equal, I sensed from Azeem that he felt it necessary to ask for permission to continue this line of thinking and reflection from his university supervisor, “These questions are what I want to explore, but I might like to reflect on a different aspect of my future classroom each week, if that’s alright” (Azeem, Winter reflection #2). In response, I interject,

You just don’t know how happy I am that you have decided to take this path and write about what you feel that you need to think about and explore rather than blindly following a list of reflection prompts. I applaud and support your decision, Azeem (US, Winter reflection feedback, #2).

In these phrases of his second reflection of the quarter and my subsequent reactions, I feel Azeem did many things. First, as a possible implication resulting from the lack of control during his Fall Quarter field experience, I detected that he continued to think of the university supervisor, mentor teacher, preservice teacher support triad as hierarchical by asking permission to deviate from the litany of weekly reflection prompts issued by the program in favor of a more personalized path to teacher growth. While this new path was uncharted waters, and I was unsure of the level of reflection that I would actually receive as a result of this cognitive choice to
use his own classroom practice as a source of self-examination, I knew that I would be able to use some questioning and some carefully placed sarcasm and counterexamples to explicate our commonality and highlight the symbiotic nature of teaching and learning.

Secondly, as Azeem writes in his reflections for the first time, he acknowledges the reader of the reflections, his university supervisor, as a source of feedback and dialogue in an ongoing conversation about his development as a teacher. His written reflections have come to be viewed as not only a space to articulate and formulate his ideas about teaching and his projections about his future classroom, but also a vehicle for feedback and further introspection about the feasibility and applicability of his ideas. It was if he was saying that he wanted to use me as a sounding board for his developing ideas about his teaching.

Finally in this phrase, I noticed a cognitive dissonance with respect to a subjugation or belittlement of his power within his Winter Quarter placement. Here, Azeem hints that what he perceives his career as a teacher is placed at some ambiguous future time rather than something in which he currently engages with his students every day.

Right now, it’s frustrating because I’m coming into someone else’s classroom and trying to take over. [My mentor] already has a routine set for the students on how day to day affairs operate. I feel that I have to adopt these routines into what I want to do and try out, so, I’m not really able to do my own thing entirely. Six weeks is not really enough time (Azeem, Winter reflection, #2).
Sensing this disconnect between what he could and should do, I reply,

But, you DO have the freedom to put new practices into effect, to rearrange the room, and to try different groupings of students to find what works for YOU! Just be sure that when you are discussing these changes with me or with Ms. S. that you have a well-articulated rationale for your choices. ‘I want to do this because...’ carries a lot more weight and garners more support than a ‘What if I try this...’ (Azeem, Winter reflection feedback, #2).

Azeem’s Developing Classroom Practice

As the six weeks progressed, Azeem was able to strongly reinforce his beliefs that support his vision of student-centered and problem-based mathematics education. Rather than a simplistic reporting of the events and incidents that occur within his classroom, Azeem’s reflections became a weekly exchange of ideas between he and I as we collectively and dialectically considered issues on his mind raised by the questions naturally arising out of classroom interactions and practices as he processes what he needs in order to be a successful teacher. Even though his ‘real classroom’ was more than nine months out of his immediate reach, his reflections became shaped by his thought of how he can make the enterprise of teaching work more effectively for him while resulting in more effective and engaged learning experiences for his students.

Blending practice and beliefs.
Perhaps the most pressing issue Azeem felt he needed to resolve during his Winter Quarter field placement was “a more effective implementation of cooperative learning in [his] classroom” (Azeem, Winter Quarter Goals, #1). Since his mentor teacher had only used group work sparingly in the first four months of the school year, Azeem felt challenged to put this practice as he initiated this critical component of his classroom vision.

I don’t want to just be up at the front of the room lecturing all period every day. To be honest, I can’t stand doing it. There is a place for direct instruction, and I do intend to use when needed, but I don’t want it to be the norm. I really enjoy the students doing the activity, working together, struggling through their questions, and then, having that a-ha moment when they finally figure something out is very satisfying. Participation will be big in my class (Azeem, Winter reflection, #2).

_During his initial week of teaching, his group work did not go as well as he intended. Even though I had cautioned of “placing students into cooperative learning groups too soon than their current development and pre-existing classroom community would be willing to support” (US, Winter lesson plan feedback, week 4),_ Azeem uses his classroom experience to further his thinking about what he could have done more effectively to meet his learning goals.

I gave the students a challenging problem from the curriculum guide that was supposed to lead them to notice the patterns in the Fibonacci sequence, but I don’t think that many of them understood the context, or the biology concepts,
behind The Rabbit Problem. Many of them got frustrated and didn’t talk or work with the rest of the members of their group (Azeem, post-observation debrief, lesson #1).

From the subsequent discussion we had that immediately followed his first observed lesson of the quarter, Azeem began to focus more on the expectations that he gave his student preceding the group work activities and also on the interdependence he could encourage within the groups through his questioning and the development of community within his classroom. Responding to the familiar sequence of reflective questioning that would follow each scheduled observation, “They just need to know how big participation will be in my class, whether it’s gonna be going to the board to solve problems or doing them as a group” (Azeem, post-observation debrief, lesson #1). However, when I asked Azeem to recall the specific instructions that he gave to each group before beginning their group work on Fibonacci’s Rabbit Problem, he could only remember that he had told each group to read the problem and to do their best.

This was a tough problem for seventh graders to wrap their head around, especially when some of the vocabulary may have been unfamiliar. What do you think would have happened if you would break down the task into smaller pieces? Then, you could monitor their progress more closely. When students see a big problem like this, I feel that they have been conditioned to say that it is too hard and will shut down before they give the problem an honest try (US, Winter Post-observation debriefing, lesson #1).
The importance of structure and importance.

I feel it initially took a few hours for Azeem to process all that we had talked about when considering all of the scaffolding that learners need if we, as teachers, want them to become more independent and collaborative in their learning. However, I feel that Azeem took the result of our conversation to heart as he began to plan and structure his next steps and the remainder of his lessons throughout the quarter. During all of the group work activities that followed the attempts of his initial week of teaching, Azeem was able to demonstrate growth by consciously making his expectations clear to the students. In the following week’s reflection, Azeem puts forth his developing ideas about making his learning expectations explicit to his students.

I think I had to realize that they take all of their learning cues from me as their teacher. I am the one who sets the tone of the class by letting them know what I expect of them. I expect all of them to do the work and they will be graded on it. I also expect and encourage the students to help each other within their groups to make sure that everyone understands the material (Azeem, Winter reflection, #3).

As the weeks of his teaching experience progressed, Azeem was able to successfully structure his content delivery in ways that allowed the students to strengthen their mathematical understanding and in ways that built the students’ confidence in their own mathematical thinking and communication.
The comments and feedback that [Tim] had provided on my lesson plans brought up many things that I didn’t even think about when I was planning my lessons. Such as when he gave me the idea to start a pattern and see how many different ways the students could think of to continue it. Instead of waiting for me to give them the answers, they were falling out of their seats to share what they had created! He was able to relate some of his own experiences teaching middle school students that made me really reconsider some of the things I was doing in my classroom, like also how to focus on the students first, and then worry about the content of my lesson (Azeem, Winter supervisor feedback form).

*The importance of classroom culture.*

*However, by only changing his teaching style, Azeem came to notice that some of his students were making great strides in their learning under the new format, while others, who had done well before his arrival, were beginning to fall behind and were unwilling to participate in his lessons. In coming to terms with teaching through problem-based scenarios and placing his students within collaborative learning groups, I felt that Azeem needed to be more mindful of the tone of his classroom and the personal relationships that he had formed with his students.*

*You cannot drop the students into new classroom processes and not expect some confusion, some helplessness, and a little resistance, Azeem. What are these students’ past experiences with math and mathematics teachers? What*
As a result of his further reflection of his students as humans rather than as objects or as sponges, Azeem comes to a very important conclusion about classroom culture.

The atmosphere of my classroom is a lot different, and I think that you just need to let the kinds know that you care, but you also mean business. One thing that this experience has shown is how relationships are built day-in and day-out as teachers are interacting with students in the classroom (Azeem, Winter reflection, #7).

Thus, through our delayed, yet shared, reflective interactions, Azeem was able to progress his thinking about the structure and community development that needed to be built and in place in order for his preferred pedagogies to be successful. By thinking more deeply about his students, Azeem made daily attempts to build rapport and learn about his students. Eventually, all fifteen students in the class to which Azeem had been assigned
came to respect and see me as their teacher for the six weeks. They [eventually] weren’t afraid to approach me or speak-up in class if needed. Plus, they got to the point where they engaged with their classmates while working on their problems. I encouraged questions as well as explanations
from my students (Azeem, Winter Competency Packet evidence, Items CSC&E #1 & CSC&E #2).

_Azeem Moves Toward Teacherhood_

_Questions arise from classroom practice._

A second productive area of growth that I noticed for Azeem occurred through his reflection based on the formulation of his working grading and homework policies. _Prompted by problematic issues that resulted from rectifying his mentor teacher’s imposed system of record keeping and grading and my questioning of how this imposed process could be made viable and workable for him, I was able simultaneously provide and opportunity for reflection with an opportunity to further develop his independence and his self-esteem._

_Well, as their teacher, do you not have the ability to change the grading system to some degree? Could you talk with Ms. S. about what you think needs to happen with the grading system in your class? Is she receptive to negotiation? Where is the accountability for them to do their in-class group work if it bears no bearing on the class grade they receive? (US, Winter reflection feedback, #3)._  

_As a result of his interactions with his mentor, Azeem was able to make progress toward the formulation of a workable homework and grading policy within his future classroom that would include the students’ positive participation in group
work and occasional group work assignments while still maintaining individual student responsibility in the form of traditional tests or written quizzes.

I haven’t really heard much about the topic of grading since I’ve been in this program. I suppose it is based on a teacher’s individual choice. I remember someone in one of our fall night classes saying that there may not be a ‘right’ answer on how to grade, but after I was planning lessons and assessments after each week of my lessons, I realized that I am not sure if it will be easy to incorporate my assessments within her current grading system” (Azeem, Winter reflection, #3).

Here, Azeem’s reflective thinking acknowledges the existing dissonance between the grading practices and implicit messages behind their respective grading systems, yet, without direct experiences, he does not know that viable limitations to his thinking about student grades.

I felt that this issue of grading coupled with the mounting frustrations he experienced with frequently absent or suspended students.

As I look back at the attendance record over my first three weeks of teaching, I see that only on one day have all fifteen students been in the classroom at once! Some students have missed or have been suspended for more than half of the days I have taught! (Azeem, Winter reflection, #6).

Azeem begins to question his own responsibilities as a new teacher while he tries to search for a viable solution to his grading and homework dilemma.
The biggest question that I have been trying to answer is what work are absent students responsible for? As far as turning in homework or making up quizzes, they can turn this work in when they come back to class. But, what about class work or group work? Do I make them do the group work on their own, at home, or do I just not average into their grade the day’s work that they have missed? (Azeem, Winter reflection, #5).

Thus, in a path of growth, separate yet similar to Carrie, I noticed and encouraged the development of both preservice teachers using self-questioning and self-responding as fertile ground for reflection and introspection. Through the development of their own independence and their sense of empowerment, they had reflectively grown to the point of asking and responding to the problems of their practice that had arisen naturally out of their work.

Azeem’s self-questioning presents a classic teacher impasse in student understanding and assessment. Positioned at the juxtaposition between his mentor’s required weekly assignment log given to the students each Monday and the “nightmare of grading a week’s worth of homework in one night” (Azeem, Winter reflection, #5), and his own beliefs “for the daily, formative feedback that I need to keep track of how much my students understand the material” (Azeem, Winter reflection, #8), Azeem reluctantly accepts the framework imposed upon him, but begins to work through his problem of practice by hypothesizing what his own classroom grading and homework system will be in the final weeks of his teaching experience.
There are many different aspects and dimensions that should make up a students’ final grade, including: homework, groupwork (since I plan on using cooperative learning) and participation, attendance (every student starts with full credit and points are deducted for being tardy), problems of the day and quizzes, and tests (Azeem, Winter reflection #8).

Exploring ideas in a safe space.

Even though Azeem willfully relinquishes his authority to establish new grading policies and procedures within his mentor teacher’s classroom, I chose to honor his decision in preserving the consistency the students needed across the academic year. Within weeks, he would leave the school, and the students would be once again under the direct accountability of Ms. S.’ grading system. I chose to let the issue rest, but I did consider his reflective thinking a collective victory for both of us. Azeem had indeed accepted the personal responsibility to further his developing teacher thinking in ways and directions based on his six-week teaching experience that is meaningful to him and his own professional development.

I may investigate an alternate grading strategy sometime later in my career, one that is more open-ended, but students will earn what they earn. If every student gets an A, then that’s fine by me. Now, if everyone was getting an A or F, I would have to look at both my instruction and assessment methods (Azeem, Winter reflection, #8).
The level of comfort in discussing his developing ideas with me and coming to view his university supervisor as a sounding board for his contemporary thinking represents a growth in Azeem’s teacher development. Although never explicitly stated, his classroom experience and our collective interactions, or the dialectical nature of his reflections and my responses, created a safe space in which he could articulate his ideas and receive honest feedback on the projection of his ideas. While during the entirety of Autumn Quarter and the initial stages of his winter placement, Azeem had been timid to speak his mind and to assert his own teacherness. However, as a result of the productive and reflective growth he was able to garner over the course of his six-week daily teaching experience, he no longer felt as the lesser force within the support triad — he considers himself as a teacher and a peer of his mentor and supervisor.

Technology helps define his teaching style.

I feel that a third area of progressive growth for Azeem was the extent to which he was able to incorporate current technology into his teaching repertoire. Based on the goal he established at the conclusion of his Autumn Quarter field experience, Azeem was encouraged by me and his peers within the cohort to attend a Teachers Teaching with Technology (T³) workshop provided as a service to the cohort by the teacher preparation program. He was also able to teach himself how to use the school’s mathematics department SmartBoard. This costly piece of equipment which functioned as nothing more than an expensive dust-collector upon his arrival
was utilized almost every day he taught, but as he learned to use the devise, the students seemed more engaged when they were allowed to use it to demonstrate their own solution and problem-solving strategies.

The reaction I got from the students was incredible. I didn’t really think that something like an electronic whiteboard would mean that much to them, but when I allowed them to use it, they felt like they were the teacher! Like they were able to teach the class something, and this did wonders for their self-esteem. It didn’t hurt mine, either. While it is not necessary for me to teach math, technology does enhance not only my instruction but also student learning (Azeem, Post-observation debriefing, lesson #5).

In what, later in the year, Azeem self-described as his most successful lesson and the most enjoyable lesson of his combined thirty-week field experience,

I used an activity that [Tim] gave to me to get the students engaged and excited to learn about slopes. I pulled out the CBR and Ranger Program to begin the idea of slope as a rate of change and an introduction to linear equations. I would put a graph on the board and the students were supposed to ‘walk the graph’ so that what they did would match the graph on the board. At the beginning nobody seemed to know what to do. But, as each student actively participated, they were able to construct their own understanding for how to walk each graph, and how to interpret the graph. I loved this lesson so much because every student in the classroom was motivated to participate,
and the students were able to get up out of their seats and learn kinesthetically
(Azeem, post-study questionnaire, Item #9).

Azeem elected to summarize how he had learned with and from technology
during his time at Diamond Middle School for his final reflection topic of the quarter.

It’s amazing how much more they were engaged and willing to participate
when I brought in any electronic device. The CBR and graphing calculator
also has provided a good reference point to refer back to whenever they may
be having trouble remembering or understanding slopes. I feel that this
quarter’s experience has helped define my teaching style through the use of
technology (Azeem, Winter reflection, #9).

I had personally seen how far Azeem had come in developing his teaching
style, and was further impressed that he had taken upon himself the responsibility for
incorporating such a large amount of technology. But, I knew that we still had ten
challenging weeks ahead and I didn’t want to lose the momentum that we had gained
over Azeem’s spring break week. So, I chose to pose additional questions about his
pedagogy.

Now that you have taught slopes from an intuitive perspective, how do you, as
an emerging professional, feel that the content should be taught? Should the
experiences for investigation and technology be presented first, and then
followed-up with lessons regarding processes for finding slopes and equations
of lines? Should it be the other way around? How will you teach this in your
classroom? (US, Winter reflection feedback, #9).
Summarizing Azeem in Winter

With these overwhelmingly positive responses to students engaging in honest and contextualized mathematical activity, I knew that my plan of leaving Azeem to his own independent thinking and of allowing Azeem to experience the freedom to make his own choices with his teaching style and strategies had paid off. I felt that Azeem had clearly found and started down his own path to teacherhood by fusing his initial teacher beliefs to his developing classroom practice. Consequently, his use of reflection had turned more personal from the first weeks of the quarter as he sought to make his learning from his university coursework and his field experiences more personally meaningful.

Although Azeem entered his Winter Quarter field experience with apprehensive feelings about how his developing teacher thinking would look and sound in an authentic classroom environment, Azeem and I were able to actively use written and audible reflection as a productive means toward teacher growth as he continually challenged and questioned his own actions in light of his experiences and responded to my attempts to consider aspects of his own classroom practice that he was too new in the profession to notice. Through the formulation and articulation of his responses to his self-questioning, I noticed that Azeem was able to forge initial pathways into the highly problematic world of teaching by learning how to structure group work and cooperative learning within his classroom, by developing a projection of his classroom grading structure and policies, and by defining his
teaching style through the use of technology. Even though Azeem deferred the implementation of his own policies, outside of his cooperative learning lessons, in favor of maintaining the status quo of his mentor teacher’s routines and processes, Azeem did sense the freedom to be himself within this strange and unfamiliar classroom environment. As he gained more experience and self-confidence, Azeem consciously articulated a more secure feeling in his role of an emergent classroom professional and a facilitator of student learning.

Azeem in Spring

The Context of Azeem’s Spring Quarter Field Experience

Azeem was initially sad to leave his Winter Quarter placement at the urban middle school in which his students were cooperative and fun to work with and his mentor teacher was supportive and encouraging. Indeed, we both walked away from Diamond Middle School feeling that Winter Quarter was a ten-week period of progressive growth for Azeem. As evidenced in the lessons I observed and the reflections I had received in which he thoughtfully considered how his current learning regarding his work as a teacher was shaping his future classroom practice, Azeem was able to become more comfortable working with student groups and had made advances in his understanding of the contextual issues that support and sustain their productive development. Through our work together, but based primarily on his own initiative, Azeem had effectively found a way to blend contextualized problems that engaged the students’ interest and the use of technology to “define his teaching
style” (Azeem, Winter reflection, #9). Yet, Azeem and I realized that there was more to learn about teaching as he looked toward returning to familiar territory for his student teaching field experience.

A return to familiar surroundings.

Interestingly, Azeem was the only participant out of my four who took advantage of the offer made by the department Program Manager. He made a specific request for the location and mentor of his Spring Quarter placement.

I really wasn’t too sure about returning to Mr. M. and the students that I had worked with during the Autumn Quarter. But, I didn’t want to be stuck in some loser school with a lousy mentor teacher who wouldn’t let me do what I wanted. I had begun to hear some horror stories from the other guys in the cohort, and I thought that returning to Northpoint High School would be the best move for me (Azeem, Spring small group discussion, week 1).

While I initially questioned the benefits of Azeem returning to a Mr. M.’s classroom and a more traditional environment, I quieted my disconcerting reaction because I knew it was not my choice to make. I honestly felt apprehensive in letting Azeem return to Northpoint, but I knew that he would be in the hands of an excellent mentor teacher, and since the surroundings were already familiar, we could spend the majority of our time focusing on fine-tuning Azeem’s developing classroom practice rather than spinning our wheels waiting on an orientation phase to end before we could begin our work. I could see the pros and cons of his decision, but as I
weighed both against each other, I knew I did not want to relive the impacts of another limiting mentor teacher after so much productive progress had been made. I also hoped that the mentoring Azeem would receive in Spring Quarter would continue from its prior stopping point from Autumn Quarter. Without having to adjust to new surroundings and students, I knew that Azeem could more clearly focus on his own development and his students’ learning.

_A signed contract in hand._

In the first week of his Spring Quarter field experience and by what I felt was a necessary but risky move, Azeem was granted a two-day release from his placement by the department Program Manager to attend job interviews out of the state. Armed with his teaching portfolio filled with lesson plans we had co-developed during Winter Quarter that incorporated cooperative learning and pictures of his middle school students creating visual representation of their mathematical thinking, Azeem and his wife had high hopes of moving their new family toward warmer climates and shorter drives to the beach. He had also packed his briefcase with stacks of resumes and reference letters from his program advisor and me. Azeem interviewed with new and established school systems in and around a growing, southern city. He proudly returned the following week having signed a contract with a brand new school system in a growing suburb.

I’m so excited about this job and not having to worry about what I am going to do next year. It’s in a great, new district and a rural setting near the city my
wife and I plan to move after I graduate in the spring. I’m going to be teaching junior high math, and since it’s a new district, they want me to come down this summer and help to put finishing touches on the new district curriculum (Azeem, Spring reflection, #1).

*Focusing on the present.*

*I, too, was very happy for Azeem as I realized another distraction for most preservice teachers in Spring Quarter was now averted for him. With the job search becoming a non-issue, we could focus our work on the present and smoothing out any remaining rough edges to his developing classroom practice. As the first member of the cohort with a signed contract for his first-year teaching position, Azeem’s life and career plan seemed to be pointed in a positive direction. “I feel that I can just focus now on my teaching, my students’ learning, and completing my action research before graduation in June” (Azeem, Spring small group discussion, week 2).*

*I found this statement to be a key statement in understanding Azeem and his dedication to the profession. Where most preservice teachers would tend to treat their student teaching as a formality or banal exercise in hoop-jumping once a signed teaching contract for their first-year position was in hand, Azeem felt that he still had a job to do. We both had realized that there was still work to do as evidenced by his creation of his goals for Spring Quarter, but what I found most moving and indicative of his maturity level was his personal commitment to the students in his placement. He wanted to further develop his thinking about teaching and his classroom*
performance, but he also wanted to do right by the students that Mr. M. had entrusted to his care. On a personal and professional level, Mr. M. felt comfortable in relinquishing control of his classes to Azeem, and once the transition period was complete, he quickly faded into the background to allow Azeem the freedom and the space necessary to meet his teaching goals.

**Personal Freedom Brings the Vision to Life**

Little had changed in the three month respite that Azeem had taken from his original Autumn Quarter field placement. There were noticeable shifts in that the attention of the school had shifted from football to baseball and softball, and the students had begun to excitedly talk about prom rather than homecoming. Students hoping to be elected to student government officer positions next school year had begun to placard the hallway with their campaign slogans. Yet, Mr. M’s classroom had remained unchanged with its thirty desks still arranged in their five rows of six desks each. The teacher’s desk remained in the front of the room, and the posters on the wall were still in their same position. *As Azeem noticed how comfortable it was returning to such familiar surroundings (Azeem, Post-observation debrief, lesson #1), we both knew in our minds, and as his mentor teacher commented days after his return, he was not the same teacher who had left this classroom in early December (Azeem, Post-observation debriefing, lesson #1). As he re-entered his mentor teacher’s classroom, Azeem had a specific intent to make his student teaching experience his own.*
This will be my classroom!

I feel that the largest step Azeem took towards expressing ownership of his student teaching experience came after his initial orientation week as he assumed control of his first class. Through strategic planning, Azeem was poised to assume control of the same class in which he had delivered the first five lessons of his career in Autumn Quarter. Yet, Azeem knew he had to assert his own teacherness as he began to reconnect with his former students.

I had been using Mr. M.’s classroom set-up in rows and column, and I was just plain getting tired of it. I felt like I couldn’t move around the room to interact with the students to well. Also, it was making me use more of a lecture-based approach, which really doesn’t suit me as well. I wasn’t sure if I would be able to rearrange the thirty desks in that little space I have, but I was able to form seven groups of four or five desks in each group. I wasn’t sure what [Mr. M.] would say about it, but I changed the room on the Friday before Spring Break and he had already left for vacation (Azeem, Spring reflection, #2).

Thus, with one bold and independent move, Azeem seized control of the physical environment of the classroom and moved the vision of his future classroom practice closer to reality. Knowing that the pre-existing framework that Mr. M. had used since the first days of September was inconsistent with his developing personal beliefs toward mathematics education, Azeem knew he had to operate within an
environment that worked for him and that he could not remain confined by a structure imposed upon him.

Within hours after the students and his mentor returned from their spring holiday, the students knew that something different was going to take place in their mathematics room. "Mr. M. was fine with it telling me that I can teach and arrange the room however I want as long as the students are learning the material" (Azeem, Spring reflection, #2). Coming into this newly re-arranged classroom for our first scheduled lesson observation of the Spring Quarter, my eyes widened and a huge smile beamed across my face at Azeem’s recent classroom renovations. I personally applauded Azeem’s decision and continued to pour my unwavering support for his independent actions into my feedback to his reflections.

If you couldn’t tell, I was ecstatic that you felt comfortable enough to do this. You should also be very happy that Mr. M. is supportive in letting you do what you feel you need to do so that it is ‘your classroom’ instead of him letting you use his. To this end, have you noticed that the students see you more in a teacher role because of this slight adjustment? The physical rearrangement of the room is a small thing, but the implications are huge (US, Spring reflection feedback, #2).

I thought to myself that for the first time in four years a preservice teacher that I supervised had never reached this level of empowerment and personal autonomy during their field placements.
Building relationships with students.

While all three members of the support team were both pleased with such a bold stroke of independent thinking, I was intrigued by how Azeem would handle the reactions from the students and how Azeem would manage the classroom with the new structure he had implemented.

In the freshmen classes, they looked confused at first, but when I gave them their tasks to complete, and I clearly stated my expectations for their participation and performance during the class, they were able to talk and interact with each other pretty well. I tried a rapport building move by letting the older student pick their own seats and their own groups, but this is not something that they are used to and a few of the students spent more time goofing off and not focusing on the lesson (Azeem, Spring reflection, #2).

I thought this was a different move on Azeem’s part, but a clear cut effort of trying to build rapport with a group of seniors who were only weeks away from graduation.

I can see your rationale for letting the older ones choose their own seats and their own groups. As we discussed this past fall, the freshmen will still do pretty much what you tell them to do, especially at Northpoint, but I think you have made a good move in terms of acknowledging the social nature of adolescents. Now, it just becomes an issue of resetting the social norms of the class to go along with your new seating arrangement. How do you plan to do
this? Had you even thought of this aspect before you made your move? (US, Spring reflection feedback, #2).

In previous years, I had seen two preservice teachers reduced to tears in conflicts over exam grades by seniors who towered over them, but within two weeks of Azeem assuming control of the second-year algebra classes, he had been able to set clear expectations for their how they were to participate within their groups. In the classes that were unfamiliar with Azeem, he had also been able to structure initial activities that would encourage the students to interact with each other about the content they were learning while learning to be interdependent on their group members as a source for their learning. I feel that this was also clever move to make the teaching transition from Mr. M. to Azeem as seamless as possible. The students were gently moved into a more independent mode of learning while still investigating interesting connections between the algebra of conic sections they had just learned and the geometric properties of the shapes they had learned in their geometry class the year before.

Creating opportunities for student learning.

In his early afternoon Precalculus class, Azeem had planned a lesson designed to lead students to conceptually understand the interrelationship of angle measures and radian measures, consequently, the new classroom structure encouraged students to share their mathematical thinking as they used the ideas they were learning as a source of argumentation amongst their peers rather than completing textbook-based
exercises. In what I felt was a powerful lesson that Azeem had independently created, I noted that

The students ask questions of each other to verify their work and their calculations. While circulating through the room, Azeem looks at the work from an all-girl group, and instead of telling them if their answer is correct, he tells them to look at each other’s work and compare their solution methods. ‘One of your solutions is right,’ he says. As he walks away with a sheepish grin on his face, I wished that he could have heard the mathematical interaction after he left. The all-girl group began a heated discussion defending their separate solutions as correct and providing a rationale for the work on their paper as they explained their work to the other members of the group (US, Spring observation notes, lesson #2).

During our debriefing session, Azeem admitted that he did not hear the exchange that I had mentioned in my notes, but he did reflectively comment that he

Now felt better in the questions he was asking and the tasks he was asking the students to complete. I guess I am just more comfortable in letting go of the mathematics and not being the only source of knowledge in the room (Azeem, Spring post-observation debriefing, lesson #2).

Sitting in the same room in which I witnessed Azeem become frustrated over how to get students to follow his processes in solving linear inequalities just over five months ago, I was simply blown away by the positive growth and progress that I was seeing.
The courage to explore different pedagogies.

After some initial successes in leading all of his students to be more interdependent in their groups, Azeem decided to be more adventurous and diverse in the teaching strategies he used with the more familiar students in his Algebra I class. Knowing from our weekly small group discussions that he was planning an instructional unit on quadratics, I planted the kernel of an idea within a lesson plan that he had shared with me.

This plan follows up on a pretty technology-heavy lesson that leads the students to connect the x-intercepts of the parabola to the solutions to the quadratic. Did they notice this on their own or did you lead them to the connection? Hey, the different solution methods for quadratics would really lend itself well to a jigsaw teaching strategy, wouldn’t it? (Azeem, Spring lesson plan feedback, lesson #3).

On his own, Azeem took the seed I had planted and cultivated it into a multi-day jigsaw lesson that met with great success.

With the class arranged in his newly implemented cooperative learning format,

Last week in my Algebra I class, the students participated in a jigsaw activity in which they were learning how to solve quadratic equations. While I started off with the class as a whole discussing the graphical solutions and x-intercepts, I separated the students into four ‘mastery’ groups of five to six students each since I had already arranged the desks that way. Each of the
groups was responsible for mastering one of the methods of solving quadratics (square roots, factoring, completing the square, and the quadratic formula). With two days at their disposal to learn their method, the students were regrouped so that there was at least one member represented from each method per group. It was now the ‘master’s’ task to teach their method to the rest of the group (Azeem, Spring reflection, #6).

While this particular reflective passage is expressed in a dry, reporting tone, I again attempted to draw his attention to the more reflective elements of his successful lesson that may have gone unnoticed.

Did you spend as much time as you thought you would need with the completing the square group? This was probably the most challenging method for the students to learn in their groups and then teach their peers. Did you have the stronger algebra students in this group? Did they ever realize WHY they call it completing the square? Did you step in with a visual to help them? Most students get caught up in the process and don’t realize that they are actually making a square (US, Spring reflection feedback, #6).

Further in the same reflection Azeem presented the biggest challenge to his jigsaw lesson was that some groups of students worked together and taught their method in about fifteen minutes. I saw this as an opportunity for Azeem to reflectively consider why this happened.

Isn’t it interesting that some students thought that they could just tell their peers how to do it, and then they have learned? What could be some of the
assumptions that these students have about teaching math? Does any of this sound familiar to you? (US, Spring reflection feedback, #6).

Rethinking the role of the classroom teacher.

I think perhaps the most residual effect from Azeem’s jigsaw activity was that it did give evidence to Azeem’s developing teacher thinking. He builds on his understanding from previous quarters that the students’ mathematical activity does not have to come from him, but rather the students are able to create understanding on their own. This move to engage students more actively in the learning process blended well with the content he was teaching and the new structure of his classroom. Clearly, Azeem was able to build upon his developing belief that

The main role of the teacher is that of a mediator, co-constructing knowledge with students. I was able to provide an opportunity for students to learn and challenge what the preconceived notions of a concept, in this case, quadratics, within a classroom culture that encourages student interactions and problem-solving (Azeem, Post-study questionnaire, item #6).

Creating an Authentic Teaching Self

Different styles for different audiences.

From my perspective, Azeem’s professional growth and developing classroom practice was encouraging to see in action as he searched for ways to consistently engage the students in his classes. In the span of a few months, Azeem had clearly set
a course for becoming a reflective practitioner. Yet, as noted by Mr. M. in their daily interactions and by his university supervisor in observation notes and our subsequent debriefing sessions, “Azeem seemed to act different with each of his different classes” (Azeem, Spring reflection, #3). While I had the inclination that he was not fully aware of the issue himself, Azeem used his weekly personal reflection as a means to investigate why.

I guess I am more relaxed in my Algebra I class, my afternoon honors Algebra II class, and the computer class at the end of the day. In first period and my morning honors Algebra II class, I am not quite as comfortable or ‘with it’ I guess (Azeem, Spring reflection, #3).

Going further, Azeem begins to reflect on the main factors that he felt could be influencing his teaching.

My Algebra I class is the one I was able to teach multiple times in the fall, and I think this has helped me to be more relaxed as I started to take over this class because I had experience working with these students and they had experience learning from me. I also know the material better, and this allows me to be more relaxed in teaching the material and responding to their questions. You would think that morning Algebra II class would be easier to get to know since there are only fourteen of them. The morning and afternoon honors classes are both arranged in groups, and you would think that the small size and the interaction would allow me to get to know the first class better, but for some reason I just don’t feel as comfortable in the first class. Perhaps it goes
back to teaching the honors content for the first time is leading me to not be as comfortable presenting the material and anticipating student questions and misconceptions (Azeem, Spring reflection, #3).

*Weak excuses.*

In our joint exploration of Azeem’s intermittent classroom persona, he cites initially what he self-describes as the “weak excuses” (Azeem, Spring post-observation debriefing, lesson #2) of being early morning classes and feeling like he is living in the shadows of his mentor teacher as the reason for his discomfort and inauthentic personality in front of these two classes. However, I was not prepared to let Azeem off so easy. Realizing that Azeem was somehow stuck in his old assumptions of what teachers should do rather than building upon his new understandings of his new teacher personality, I tried to get Azeem to think about his presence in the classroom more problematically.

I thought that you made the room arrangement different so that you would feel more comfortable in the classroom and not feel like it was someone else’s class, right? Could it be the label of the class stressing you out? What is the honest difference between teaching Algebra II and Honors Algebra II? Aren’t we responsible for the same content objectives in either class? Yes, the label indicates (mostly to parents and the students) that you are working with a ‘more able’ group. However, doesn’t this play into the faulty predisposition of students who can versus students who can’t? Even if you make a mistake in
front of the Honors class, could you not turn it in to a learning experience?

Are some of them math savvy enough to call it out? Would they even feel comfortable calling the work of a teacher into question? What’s holding you back, here, Azeem? (US, Spring reflection feedback, #3).

One reason is not enough.

Thus, Azeem initially reflects that his discomfort is a content-related issue and that more exposure to the content would be a possible remedy for the systematic and regimented teaching style he exhibits with these two classes. But, as I had come to expect from him, Azeem did not rest with one possible solution as he attempted to reflectively wrestle with his fluctuating classroom persona. As noted in the following reflection passages, Azeem consistently revisits the issues of his fluctuating student rapport, each time changing his thinking in light of his current classroom practice.

Last quarter [in a seventh grade classroom] I was so relaxed and I was able to have a lot of fun and joke around the students with learning still going on in the classroom. I think the atmosphere of high school might be another reason for my lack of interaction with my honors classes. It’s more serious and down to business with less time for joking around. I think that high school students are also ‘too cool’ to have the same relationship with me as the middle school students (Azeem, Spring reflection #5).

Returning to the idea of content being a driving force behind the low comfort level with his honors classes, Azeem also begins to think more deeply about
The idea of being pushed as a great influence my honors Algebra II class. I feel the pressure to keep the pace going strong through the material because there is so much that needs to be taught by the end of the year. This makes me feel like I cannot do everything that I want in the class and that there is not enough time to interact with them and do certain activities together. The hardest aspect of this is feeling that I may be leaving some students behind with unanswered questions (Azeem, Spring reflection, #7).

Further, I also noticed Azeem considers a combination of the content and the serious nature of his honors students as a possible source of the contention disallowing him to be relaxed and personable with the classes.

After completing the interim grades for my Algebra II honors classes, I realized what a pain it is trying to explain to some of the students why they have the grade they have. Many of the grades were lower because the students have not turned in homework and have missing assignments. I suppose it’s good that these students care about grades and want to do well, but some of them are worrying way too much that their 89.5% was a B+ and not an A- (Azeem, Spring reflection, #5)

*The issue of Azeem’s more formal teacher behavior in front of his honors classes was never fully resolved during the course of his student teaching. In fact, in response to a questionnaire Azeem constructed and gave to his students in his final days of teaching to receive feedback on his teaching from his students, many students suggested that Azeem “be more laid back and joke around, have fun, and lighten up*
and be more enthusiastic” (Azeem, Spring reflection, #8). But, as Azeem was able to gain some perspective and reflective distance from his student in the weeks following the end of the school year, Azeem was able to reflectively admit that

I really needed to quit worrying about all of the things that could have gone wrong and what I wasn’t able to do. I needed to trust myself and the abilities that I was able to develop over the year. As a result of my student teaching, I think I learned how to see students as who they are and how to interact with them (Azeem, focus group transcript).

I’ve found what works for me.

With a solid foundation and authentic field experiences that allowed Azeem to forge a classroom practice that reflected his own personal beliefs in how students best learn and varying levels of rapport with students throughout the daily teaching schedule he assumed from his mentor teacher, I saw Azeem develop a strong sense of accomplishment and a high degree of professional self-esteem that had not been present ten weeks prior. Azeem felt very positive about the work he was completing and the lessons he was learning as he began to integrate his teaching self and personal self. The more advanced nature of his overall daily teaching schedule did not present

Too many disruptive situations that I needed to respond to. Honestly, one of the biggest problems I had was with students playing games on their calculators in class, preventing them and those around them from learning to
their full potential. Most of the time (but not always), I would walk to that person (or group) and ask them to put the calculator away, which they always would (Azeem, Spring competency packet evidence, item CSC&E 3).

In all of his advances in his teaching style, I lamented his lack of exposure to the problematic issues of disinterested students and classroom control. So, Azeem did not have to wrestle with issues of classroom management and student discipline that troubled the three other participants in the study.

Yet, with what I felt were so many positive professional and personal developments in the course of his student teaching, and as Spring Quarter drew to a close, Azeem and I were able to reflect as he articulated his further thinking regarding the integrated nature of teaching and learning. As he began to give his classes back to his mentor’s control and returned the student desks back to their original rows and columns, he began to think about his own progress.

I think that coming into this program I had a very different idea of how I would teach. The only experience I had was the way in which I was taught, in a direct instruction setting with little communication between students and the teacher and between students (Azeem, Spring reflection, #8).

Piecing together the threads of his current understanding in light of his past ten weeks as a full-time teacher,

I thought that being a good teacher involved being able to show students the methods of solving mathematics problems (which is part of good teaching) through modeling. Class time would be spent giving notes in a lecture through
numerous example problems. It would also be a time to answer questions that students were having about homework (Azeem, Spring reflection, #4).

*While this passage does outline the style of teaching that Azeem used in the early weeks of Autumn Quarter, Azeem’s thinking had definitely changed as a result of our interactions that naturally arose from his field experiences.*

I have learned what it means to be a reflective teacher. That is, all the other things that needs to be done and thought of outside of just teaching the students. I now know how much work goes into being a teacher, and that it is constantly on my mind. I was able to try a lot of different methods and approaches to teaching, and I have found out exactly what works and what doesn’t work for me (Azeem, Post-study questionnaire, item #15).

**Summarizing Azeem**

As our time together drew to a close and as I reflected on the progress that Azeem had made, I was very happy knowing that I had, in some small capacity, been able to walk a while with Azeem down the path toward his own teacherhood. Azeem had been able to develop his teacher thinking in meaningful ways through a combination of reflection and practice and was able to use reflection as a way to grow professionally and personally.

I really valued the level of freedom and latitude that I had been given in completing those weekly reflection assignments. All of the reflections that we had to write encouraged me to grow as a professional teacher. I was able to
reflect on what was going on in my classroom as well as begin to think about how I want things to run next year (Azeem, Post-study questionnaire, item #17).

Encapsulating how he felt he had changed over the course of the year within the safe space of our small group discussion, Azeem further shared his own introspection about his developing teaching practice.

I was also able to begin focusing and reflecting on the processes I need to go through when I teach rather than just an end result like test scores or achievement test percentiles. There is just so much to think about when you are planning or trying to create a lesson for your students, and then afterward, there is so much to reflect upon and think about how you can do it better the next time, or somehow make the lesson more engaging with a different group of students. The possibilities for thinking and reflecting about teaching really are endless. (Azeem, Spring small group discussion, week 7).

*Entering the secondary mathematics teacher preparation program nearly twelve months prior with little clue as to how to even construct a lesson plan, I was so very proud of the progress Azeem had made. Azeem made great strides toward establishing his intertwined professional career and personal life. As a result of his interactions with his mentor teachers, with me, and with his students, and even with himself through his reflective introspection, Azeem came to understand one of our profession’s central ideas – that all aspects of good teaching take time.*
CHAPTER 7

THE CASE OF BRETT

Introducing Brett

At twenty-two years of age, Brett was the youngest member of the secondary mathematics preservice teacher cohort. *I feel that it was his youthful vibrancy coupled with a well-articulated predisposition for discovery learning and student-centeredness that he brought to the classroom setting that drew me to his inclusion in the study. From our first introduction, I felt that all of us could gain something by having him joining our group since he excitedly shared such a unique perspective in his views of teaching and life.*

Like the other three participants, Brett successfully completed his undergraduate degree in mathematics with the majority of his peers in the cohort. Yet, his secondary experience was shaped by attending private, college preparatory school in the northern part of the state. *Thus, his knowledge of what is largely assumed as taken-as-shared opinions about public schools and public schooling were a bit skewed from those views held by the other participants.* His travels through Central America on a secondary school service and mission trip and his recent excursion through Europe as part of a student exchange program immediately preceding the
Autumn Quarter of his teacher preparation program helped to shape his world view and his beliefs on the work of teaching and life.

**Articulating a Vision for Teaching and Learning**

*From the outset, I knew that Brett’s personality was different from the majority of preservice teachers I had worked with in previous years. From my first impressions, his laid-back personality communicated to me that he would adapt well to the oftentimes chaotic arenas of secondary and middle school classrooms, and his honesty signaled to me that he would have the courage to speak his mind. But, I feel that the most interesting and endearing quality about him was that Brett encapsulates his interest in teaching mathematics neither from a perspective of feeling compelled to work closely with students nor from a perspective for the love or appreciation of the content, but from a deeply rooted need to “do something meaningful with my life” (Brett, Pre-study questionnaire, item #1)*

*When working with secondary mathematics preservice teachers over the past three years, I had come to expect the usual responses to the questions of ‘Why do you want to teach?’ I had traditionally received such stock answers as ‘I just like math,’ or ‘I want to work with kids,’ or simply, ‘It seems like something I could do.’ Usually, the feelings of ‘doing something meaningful with my life’ do not enter the novice teachers’ mind until they have worked through the problematic issues of content delivery and classroom management in their induction years. Brett’s response to my initial items on the Pre-study questionnaire intrigued me, and gave an inclination of some mature thinking from someone so young. It was not until later in Autumn*
Quarter that he began to expand on his personal values with me and the rest of our group.

Being a positive influence.

Responding to a structured reflection prompt that asked each preservice teacher within the cohort to write about personal and media influences that have shaped their mental images of teachers and teaching, Brett shares some of his personal thoughts about teachers that he had found most memorable.

The teachers that had the biggest effect on me were not the ones who pounded a list of facts and formulas into my head, but the ones who shared what they knew about life with me. I want to help be a positive influence on students, and I want my class time to be a positive time of the day for my students (Brett, Autumn reflection, #2).

That is not to say that Brett was somehow weak in his content knowledge, but I had the distinct feeling that he would have his classroom focus on the people who would use the numbers rather than on the numbers themselves.

Rethinking traditional mathematics teaching.

I read with great interest Brett’s initial projections of his future mathematics classroom as he attempted to illustrate his closely held disposition for the importance of people and the importance of creating meaning within math classrooms. With such attention to detail and a structure that supports inter-student interactions,
immediately classified his initial teacher thinking as non-traditional and student-centered. “Most of the time, math is really boring for students, so good teaching is something that takes a boring subject and allows students to become interested in it” (Brett, Pre-study questionnaire, item #3). Recalling his own math experiences in his sophomore year of high school as “very boring and [the] authoritarian form of classroom management that left little to do in the class except sit and daydream” (Brett, Autumn reflection, #2), I received the clear message from Brett’s words that the ideal learning scenarios in his future classroom would involve a great deal of group work since that is the way he felt he learns best.

My class would begin with a brief introduction to the subject matter and the students would get into pre-assigned groups to work on a coherent, and cleverly designed, problem set that I created. As the teacher, I would circle the room continuously talking to the students and checking their progress. The students would rely on themselves to teach one another. If any questions became recurring, the group work would be momentarily paused in order for me to address the class and for us to work through their difficulties as a team (Brett, Initial Writing Sample).

While I had read other Initial Writing Samples, such as Carrie’s sample, that espoused a predisposition for using interactive student groups and non-traditional instruction through problem-based teaching, none were as clear and articulate as what Brett had shared. While I knew the dangers of relying on this self-reported data source, I came to believe that his words could be trustworthy when I began to see
common threads within his initial questionnaire responses and his first reflective
writing submissions. As our small group began to talk and interact more, I received
more information from Brett as I began to get a more holistic picture of his classroom
vision and his teaching goals.

Going further in latter weeks in response to a structured reflection prompts in
which the preservice teachers were asked to recount effective and not-so-effective
teachers from their academic past, Brett creates a contrast to the predominantly
boring way he feels that students see secondary math.

I want to create a working but enjoyable classroom environment in which the
teachers and students rely on and learn from each other and the students are
able to be themselves. I know this is difficult, and it will take time, but I think
groups is something I will try in order to stifle boredom and facilitate learning
in the classroom (Brett, Autumn reflection, #4).

The Importance of Interpersonal Relationships

As our first weeks together passed, I attempted to build rapport with each of
my participants. As I came to know each of them on a more personal level, I began to
notice how their past experiences had shaped their views of effective teaching and
learning. From his writing, I began to notice Brett’s personal ontology focused on the
critical importance of personal relationships and ideals that transcend monetary gain
and the acquisition of social status. “When I was real young, I thought all I wanted to
do was get a job that paid a lot of money, but it didn’t take long for me to realize that
isn’t at all what I want’ (Brett, Pre-study questionnaire, item #1).

*I was able to learn more about Brett’s intrinsic motivation within his response
to a structured reflection prompt in which the preservice teachers were asked to
recount a time when he or she had learned something meaningful. Brett relates the
death of a close friend during his junior year of high school as a second time he
learned valuable life lessons.

During this time, I was working hard in school, always planning for the future,
and from this event, I was able to learn that there are no certainties in the
future, so it is important to embrace each day and not get too caught up in
sacrificing now for better things in the future (Brett, Autumn reflection, #3).

As a by-product of this project, I have come to more fully understand how current
actions are shaped by past experiences, and I took immediate meaning from Brett’s
openness.

Additionally, Brett gives further supportive evidence that some of his most
meaningful lessons occurred outside the realm of traditional schooling.

The school I went to was a college prep school, so I was surrounded by other
students in my classes on the fast track to wanting to be businessmen, doctors,
lawyers, et cetera. However, during a mission trip to Guatemala during my
senior year, I was able to reinforce some ideas that had already been
formulating in my mind, and that is that chasing money through the
aforementioned professions is a pointless endeavor if I am not going to be happy in the process of getting there (Brett, Autumn reflection, #3).

I felt these two life experiences had shaped Brett’s daily outlook and how he views the teaching profession as enjoyable work that can positively affect the lives of others.

Brett in Autumn

The Context of Brett’s Autumn Quarter Field Experience

Shared placement schools.

In what was a convenient stroke of luck for me in terms of travel time, gas expenses, and availability to observe as many of their lessons as possible, two of my participants, Brett and Azeem, were both placed within the same suburban high school for their Autumn Quarter field experience, Northpoint High School, but each was placed with a separate mentor teacher. While Azeem felt the suburb, “reminded me of my hometown” (Azeem, Autumn reflection, #5), Brett describes his placement school as a typical suburban high school servicing an “archetypal middle-class suburban neighborhood” (Brett, Autumn reflection, #5).

Contrasting mentor teachers.

Even though each of their mentor teachers had been long-time colleagues within the department, their classroom teaching styles showed a high level of contrast. Brett’s mentor was once a graduate of the high school in which she now teaches second-year algebra and AP Calculus. Azeem’s mentor was nearing
retirement, but Brett’s mentor, Ms. T., was the next senior member of the department with an accumulated twenty-six years of teaching experience. Azeem’s mentor teacher was also active within the school and district through leadership of professional development programs and serving as a mentor for entry-year teachers within the district, however, Brett’s mentor did neither.

As the opportunities presented themselves, this mentor and preservice teacher pair were able to interact and share their respective views on students, the district curriculum, and the nature of education in general. But, Brett confided to me toward the end of this current placement that he and Ms. T. were unable to forge a strong and supportive relationship.

I don’t feel that I have any reaction to my mentor teacher at all. I guess this could be a sad thing that I feel neither one way nor the other about her. From the beginning, our personality styles just didn’t fit well together. She runs a very regimented classroom, and that is just so not me. On one hand, we hear in our coursework that the Standards should be guiding what we teach, but from her perspective, she sees them more as bureaucratic nonsense. I guess we did agree on one thing, though; we both feel the same on the importance of how teachers also need to be a mentor figure in the classroom. This recognition has come through [her] experiences with students and also from what she saw as community pressure to supply not only education but guidance to students (Brett, Autumn reflection #7).
In this situation, I once again lamented the entire process for the selection of mentor teachers, or lack thereof. While I mean no disrespect to a twenty-six year veteran of the classroom, I personally feel that more could be done to ensure the classroom practice of mentor teachers should model the goals and philosophy of the teacher preparation program. Further, I feel that more work could be done to match the preservice teacher and mentor teacher in terms of compatibility before the mentoring period begins. The crucial work of preparing future mathematics teachers should not be left to chance.

A relationship that never forms.

Over the course of the quarter, the expert and the novice were unable to reconcile their differences in terms of effective pedagogy for student learning with the mentor taking the position that direct instruction is what works best for her and her students. These contrasting views as to what constitutes effective teaching and learning created a cognitive dissonance for Brett as he reflectively began to plan the lessons he was required to teach. I felt he was at an impasse within himself of staying true to what he believes and the classroom processes that had been established by his mentor teacher. From this, I feel that Brett had a difficult time asserting his own personality into the majority of the lessons he taught, and I regretted that his students were never fully able to see his true self.

Even with the difficulty he experienced in trying to reconcile his teaching ideas with her imposed regimented classroom structure, I feel that Brett was able to use his Autumn Quarter field experience as an opportunity to learn. However, in this
case, Brett was using his mentor teachers advice and disposition more as a model of what not to do than a model of exemplary practice. I feel that this was most articulately stated near the end of the quarter as Brett was summarizing his thoughts of his work at Northpoint High School.

When I look to myself as a teaching professional, I see someone who is not overly stressed with making sure that my students know a list of specific things or processes before they exit the classroom. I am more concerned that they are able to think their way through the problems that are presented in class, because in real life, that is what one needs to do. Anyone can memorize formulas if they have the desire or the motivation, but it takes more to have the courage and skills to be a problem-solver. I see myself as someone who in an educational environment would rarely give multiple choice tests, but instead give open-ended questions, and I feel like I would be the type to award plenty of partial credit to answers to questions that reflected good thinking” (Brett, Autumn reflection, #9).

First Teaching Experiences

I felt that this personalized view of his developing and relatively untested classroom practices encompasses the cornerstones of his initial teacher thinking. Brett was able to temporarily view himself as a teacher, but the opportunity to put his plan into action was circumvented by the lessons he was arbitrarily assigned to teach and the stringent timing schedule he was asked to keep.
Brett’s first mini-unit.

With little restrictions on the program’s expectation of teaching five to ten lessons throughout the ten week field experience, Brett and I both initially thought planning a series of three sequential lessons in a second-year integrated mathematics class would be a good experience when the suggestion was made by his mentor teacher. I later learned that Ms. T. was needed out of town during the last two days Brett was to be teaching, and I had my suspicions that this teaching assignment was made as a direct avoidance of leaving detailed lesson plans for a substitute teacher, however this is pure speculation. When he initially approached me with the idea his mentor had given him, and with more than a week to plan and organize his lessons, Brett seemed that he was looking forward to gaining practical experience in his mentor’s classroom rather than “sitting in the back of the room and hanging out” (Brett, Autumn reflection, #5). While his reflective writing throughout the beginning stages of the quarter focused on the positive effects of open-ended activities he felt should be used and the impact of student interaction on meaningful learning, the case was quite different for his first teaching episodes.

The ease of adopting traditional teaching.

When Brett assumed the role of teacher for the first time, the class composed of thirteen juniors and sophomores had finished a week-long series of lessons that focused on the solution strategies for systems of linear equations in two-variables.
The students had gained some experience in solving the systems graphically and algebraically through substitution and combination. With little segue or review of what they had previously learned, Brett stood at the front of the classroom on his first day and nervously told the students, “We are going to be working on word problems this week” (US, Autumn observation notes, lesson #1). The students, who were seated in the mentor’s arrangement of desks in rows and columns moaned to signal their displeasure, but reluctantly grabbed their notebooks and pencils and began to flip through a recently photocopied packet of word problems that Brett had given to each of them.

During the next forty-eight minutes, Brett led the class in a teacher-driven demonstration of three word problems that required the use of systems of linear equations for the solution. Each in-class example was written on a separate overhead transparency as the students followed along in their packets. Brett formulated each equation that the students would need to solve the contextualized problems and demonstrated how each problem could be solved through substitution or combination. The students attempted to decipher Brett’s writing on the overhead transparency and copy what they saw into their notebooks as they had been trained to do since the first day of their math class. (US, Autumn observation notes, lesson #1).

I sat in the back of the room creating my observation notes and cringing at the wide disconnect between reflective words I had read and actions that I was witnessing with a second preservice teacher in my study. I was initially alarmed that two of my participants had only written their glowing visions filled with non-
traditional instruction because they felt that was what they were supposed to write. But, as I now realize, each of the preservice teachers in my study needed to feel comfortable in the act of teaching before they could begin to infuse their individual personality into their lessons and their classrooms.

I had noticed that the first teaching experiences of Autumn Quarter are daunting to the preservice teachers. The students’ learning is the furthest thing from their minds as the preservice teachers focus all of their efforts to try to not make mistakes, to try not to look nervous, and to try to get through each example they have planned. As I tried to piece together the murky recollections of my first lessons, I too realized that I need more than one confidence-builder lesson before the nerves of being in front of a class were less pronounced. As I began to see the classroom through the eyes of my participants and relive my own experience, I quieted my own anxiety about their first performances, and knew that we had almost an entire year together to work on their practice. For now, I needed to be supportive of their teaching, even if I felt there could be better ways to do it.

After following Brett’s lead for the majority of the class, the students were asked to form pairs to attempt a similar word problem on their own. However, the students in the class struggled to interpret the words of the practice problems into algebraic sentences that clearly represented the relationship between the quantities in the scenario they were given (US, Autumn observation notes, lesson #1). As Brett attempted to circulate throughout the room to give feedback and answer questions from the students on an individual basis, he quickly found it difficult to manage all of
the questions and confused looks that were coming from the students (US, Autumn observation notes, lesson #1), but as the bell rang to signal the end of class, Brett was able to give the students their homework assignment for the evening which consisted of more word problems involving systems of equations. The two subsequent lessons in Brett’s mini-unit followed exactly the same format as his first with similar results in terms of student learning and retention, but due to scheduling conflicts, I was unable to observe the subsequent lessons.

The dissonance between his vision and reality.

In our post-observation debriefing that immediately followed his first teaching experience with the integrated math class, I started off with my standard list of questions to generate an overall reflection of what Brett felt went well with the lesson and what he felt he would need to change to make the lesson more successful. Early into our conversation, Brett seemed very unhappy with the overwhelmingly traditional method of content delivery he had used as evidenced by the dour look on his face and the sighs that signaled a strong feeling of powerlessness that permeated his responses. I had been initially pleased and encouraged with what Brett had espoused as deeply-rooted convictions for student-centered, positive classroom interactions between students. Yet, his classroom practice showed very little deviation from the teaching style of his mentor.

I knew that I could teach the lesson any way I wanted, but at the same time I knew the kids would have to take a quiz [on] Friday that I did not write, and I
felt a responsibility for making sure that they were ready (Brett, Autumn Post-observation debriefing, lesson #1).

Trying to make him feel as secure and supported as I could with his lesson, I agreed with him. Yet, I sensed that the lack of communication between Brett and Ms. T. could have been a contributing factor to the actions he had taken within these initial lessons.

As the quarter progressed, I was able to learn more about how Ms. T.’s regimented schedule was causing problems for Brett.

Since I am not at my school on Friday, I never get to look at the quiz they’re gonna take, but from talking to Ms. T., I got the impression that is was in alignment with the material being taught on a certain schedule, so I felt very limited in my ability to try new things (Brett, Autumn small group discussion, week 5).

My first response to Brett was, “Why do you not get to see it?” followed by a quick, “Why have you not asked to see it?” (US, Autumn small group discussion, week 5).

Brett then shared with the group that all quizzes and test that Ms. T. would give throughout the year were locked in the file cabinet in her room, and she had never shared the key or offered any of the materials for his review and planning purposes.

In the back of my mind, I surmised that Ms. T. did not create her own assessments, or gave the same ones repeatedly and only photocopied them when she needed them.

The deferment of personal power.
In a general sense, I feel what impressed me the most from all of the preservice teachers in Autumn Quarter was the reluctance to assert their own influence within their mentor teacher’s classroom. This deferment of personal preference for pedagogy in favor of a teaching style that would be less disruptive to the established classroom environment is illustrative of the lack of control expressed by all of the preservice teachers highlighted in this study during the Autumn Quarter of their teacher preparation program. Yes, I understood that they felt like, and even called themselves “student-teachers,” but it seemed that each participant had latched on to the first word in the label, but not the second. I was trying at every opportunity to build rapport and assure each of them that I would support any decision they felt necessary, but each of my participants felt obligated to bend to the teaching style of his or her mentor for the majority of the lessons that were implemented.

First Teaching Success

Even after four lessons, Brett remained unable to implement his own version of group work within his mentor teacher’s classroom and began to doubt the career path he had chosen. During the latter stages of the Autumn quarter field experience, Brett was given the opportunity to teach his final lesson to the same integrated mathematics class. As indicated in the lesson plans I had received and critiqued, the goals of the lesson were for students “to define and classify sets of numbers and to understand the idea of absolute value” (Brett, Autumn lesson plan #5). However, in
his lesson plan, Brett had again relied on telling the students about each number group separately, just as his mentor teacher had suggested.

Creating opportunities for change.

Reading the drafted plan for his fifth lesson on the structure of the complex number system, I knew that I needed to provide strong feedback for him so that he could feel some degree of empowerment to make this lesson his own.

What say we turn this lesson on its head! Instead of giving them definitions, we ask them to do more! For example, this afternoon print out some ‘Number Set cards.’ In their groups, the students use what they already know about integers, rationals, irrationals, real, and complex to organize the slips of paper into an organizational chart (a family tree, if you will) of the number system as they understand it. This is pretty eye-opening if you have never done it before! You will be surprised at their lines of thinking when trying to put it together with what they already know. Then, you can set up a discussion and lead into what numbers fall into which groups and what are the characteristics that distinguish the groups from each other. This is just a teaching idea I used to use in my Algebra II classes for them to be more active in the learning process and to let them use what they already know. Let’s dare to be different, Brett! (US, Autumn lesson plan feedback, lesson #5).

I had no idea that my words would create such a noticeable change in Brett’s classroom demeanor. Eager to put his group work ideas into action and with no
forewarning to his mentor teacher, Brett pre-arranged the desks in the room into clusters of four desks each in various locations through the room, and he randomly assigned students into groups by writing their names on an overhead transparency projected onto the classroom screen as the students entered the room. The students excitedly adapted to the unfamiliar arrangement of the classroom and sensed that their math time that day was going to be unusual (US, Autumn observation notes, lesson #5).

Group work spurs engagement.

Within their groups, the students were first asked to structure the sets of numbers as best they could, to correctly classify individual numbers based on the numeric properties of each set, to order and locate sets of real numbers on a number line, and to simplify expressions involving real numbers and absolute values. The students in the room took to the activity very well and excitedly interacted, discussed, argued, and justified their individual answers to their fellow group members. Within minutes of the activity beginning, a huge grin emerged over Brett’s face as he began to loosen his tie and his personality for the first time in front of his students. Interestingly though, half-way through the lesson Ms. T. grabbed her purse and decided to leave the room (US, Autumn observation notes, lesson #5). I interpreted this lesson as a pivotal point in his teacher preparation. Brett knew that his revised lesson got the level of interaction he had wanted throughout the quarter and this is how he wanted his classroom to look and sound every day.
Thinking about what went right.

Brett and I were both encouraged by the interaction between the students as they progressed through the assigned tasks. In response to my reflective questions at the end of the lesson, Brett paused when I asked “What was it about this lesson that made it so successful?” (US, Autumn post-observation debriefing, lesson #5). Brett was not able to answer immediately, but as he began to calm down from the flurry of student engagement and activity, the same grin came on his face as he thought about his most recent success.

I kinda think that they were excited because they were doing something different in class. I mean, they were just happy that they weren’t taking notes from the overhead. They were actually asking questions among their groups, and I did my best to get around to all of them and answer their questions, but there was so much good stuff going on that I couldn’t get to all of them (Brett, Autumn post-observation debriefing, lesson #5).

That is not to say that his last lesson was most successful for his students. In my observation notes, I had noticed one particular group struggling what Brett had asked them to do. I made a specific point to mention this in our debriefing. “There was a group in the back corner that really struggled in creating the Number Family Tree. Why did they have so much trouble?” (US, post-observation debriefing, lesson #5). While Brett’s revised conception of this lesson hinged on the assumption that the students could recall or construct their understanding on their own fit well with the group work structure he created, he also found as the lesson progressed that most of
the students were having difficulty with the content of the lesson. “I honestly thought,” Brett audibly reflected “that juniors and sophomores would be able to tell the difference between an integer and a rational number, but I guess I was wrong” (Brett, Autumn post-observation debriefing, lesson #5).

Through this debriefing discussion, Brett recounted possible obstacles for the students’ understanding of the lesson objectives as I pressed him to articulate aspects of the lesson he would want to change the next time it would be taught. We had both noticed that most of the students were eventually able to classify and order the number sets that they were given on the worksheets, but most could not create the overall structure of the complex number system (Brett, Autumn observation notes, lesson #5).

It could be that they have just come back from the long Thanksgiving weekend. Or maybe, ‘cause this lesson is so off-base from what we were doing last week. I mean, I looked at the curriculum guide, and I laughed and wondered why this particular lesson was stuck where it was. It doesn’t seem to fit in with the work we were doing last week using the three basic trig ratios. I don’t know; it just seemed unconnected, but that was the way it was set up in the curriculum guide, so I went with it (Brett, Autumn post-observation debriefing, lesson #5).

I so desperately wanted to hear much more concrete explanations of his students’ thinking beyond the classic ‘I don’t know,’ but again, I had to remember that my biggest goal for Brett in this lesson was for him to reflectively reconsider his
original direction and to try something different. I felt comfortable that both of my objectives for him had been successfully met.

Brett Reflects on the Processes of Teaching and Learning

I can only be me.

In a general sense, Brett was happy with the experience he gained over the course of the quarter, even though we both agreed that his mentor teacher’s classroom framework was not conducive to type of group work he truly wanted to employ.

I think I have been initially successful in having the content knowledge and in having the attitude and persona I want in the classroom. The only thing is then translating this into student learning. I sometimes think that the students would be able to learn better if I was stricter on demanded their attention more, but then for me the classroom would not be enjoyable for me and probably not for the students, either (Brett, Autumn reflection, #8).

As I read Brett’s reflection, I noticed that the independent clause of his last sentence did not ring true with all of the other reflections that I had read across the course of the quarter. I detected that the references to being stricter or being more demanding of their attention did not coincide with his articulated preference for actively engaged students that he wanted to know personally. I honestly felt that these words had belonged to his mentor teacher and they were dampening his enthusiasm
for teaching as he wanted. In my reflection response, I chose to offer another way to rethink preconceived ideas about tightly controlled classrooms.

Some students need to process information orally, or just to sound their understanding off on someone else. Compare this to more authoritarian teachers who dictate that they should be the only one talking in the classroom. Doesn’t this go against the very grain of adolescent behavior? Come to think of it, are most of the processes that are used to maintain classroom order along the same vein? Are we using tactics of teaching and learning for understanding, or are we teaching and implementing tactics of restriction and control? (US, Autumn reflection feedback, #8).

Within Brett’s previous reflection excerpt, Brett has taken a direct action to reflect on the evolution of his classroom practice after meeting the program requirement of five lessons. In his thoughts, Brett explicates a general sense of satisfaction for the work he had done in his mentor teacher’s classroom. As a result of his teaching episodes, Brett had learned to plan an effective lesson, with only a touch of my help. He had developed a strong rapport with each of the students in his third period class. He had gained first-hand experience in structuring a student-centered lesson, but he still felt that there is much room for improvement and growth. However, what I felt was most honest and most identifiable in his written reflection at the ending of the quarter is a predisposition for him to teach in ways that honestly reflect himself as an individual. For I felt that he realized, even at this early stage in his development that teaching is highly personal and must come from the heart.
Rethinking controlled classrooms.

While this development and articulation of his initial teaching thinking had been encouraging to me as it signified some growth, Brett still did not view himself as a teacher.

Not so much, yet. I mean, one reason is my age. I don’t feel that I’m much older or that far removed from the learning experience, so it is hard for me to see myself as a teacher. I also have not been in a teaching position yet where I have full and total control of the classroom setting (Brett, Autumn small group discussion, week 9).

This was one of the most puzzling responses I heard from Brett in our ten weeks together. Clearly, Brett had performed almost every action that we have come to most closely associate with the work of teaching, but he did not feel right in placing the label upon himself. While I half-heartedly accepted his rationale for his age, I began to wonder if there was a more viable way for the preservice teachers within the program to feel more in control of their teaching during Autumn Quarter.

Again, the issue of classroom and situational control of the teaching environment played a big part in the development of my preservice teachers, and I had begun to notice an overwhelming perceived lack of control on the part of each preservice teacher in their Autumn Quarter mentor teachers’ classrooms. In what I have found to be an echoing theme across all four separate cases, Brett summarized...
well the general feelings of his peers as he articulates a desire to do his work more independently.

I had very little control over my teaching during the autumn. It was someone else’s classroom, and I felt like I was just getting in the way. Also, the kids knew that I was a student teacher and they know the likeliness of me punishing them for anything is slim. So, I kinda felt like I had, um, little leverage, not that there were any real cases where discipline was an issue, but it was just another factor that made me feel less in control (Brett, Autumn small group discussion, week 9).

Summarizing Brett in Autumn

Thus, Brett’s Autumn Quarter field experiences were congruent with the experiences and classroom performance that I observed from the other three participants. While each preservice teacher was able to experience some degree of success, although Charles’ success was to a lesser degree than the others, I felt secure in the confidence that they had gained in their short-lived experiences in leading a group of learners. In terms of their use of reflection, the structured reflection prompts provided by the program seemed to guide their reflective thinking in terms of articulating their initial teacher thinking and the creation of individual statements of their respective educational philosophies. Indeed, I had also attempted to develop what I called their reflection-in-action immediately following each scheduled observation through the use of reflective questioning. In Brett’s case, I
sensed in each reflection the personal need to focus on people over processes, and I only wished that the classroom environment he experienced could have been more supportive.

*Brett in Winter*

*The Context of Brett’s Winter Quarter Field Experience*

*An apprehension toward middle school.*

Brett initially dreaded the Winter Quarter field experience. Having spent the previous quarter in a very regimented, traditional, suburban high school in which “the math was very dry, and there was not much exciting that happened in the classroom” (Brett, Winter reflection, #6), Brett was required to experience an urban middle school learning environment. Expressing to me that junior high students and the typical junior high curriculum “were of very little interest to him” (Brett, Winter reflection, #1), Brett initially articulates a predisposition I have found to be common among secondary mathematics preservice teachers after four years of experience as a university supervisor. Having performed well in their own high school and undergraduate mathematics courses, many secondary mathematics preservice teachers express a direct interest for teaching the most challenging courses and most astute learners the secondary environment can offer. “I know that a couple of you are thinking that your first teaching job will be five classes of AP Calculus, but you need to have more realistic expectations” (US, Winter small group discussion, week 2).
After receiving all of the preservice teachers’ reservations about entering urban teaching environments, I braced myself for a long and tenuous ten-week period.

Brett’s new mentor teacher.

Yet, after coming to know and observing his highly-personal Winter Quarter mentor teacher and becoming an integral part of the established classroom community within the first week of the orientation phase of his new placement, Brett quickly adjusted his initial apprehension and was admittingly “impressed with the attitude in the classroom and the ability levels of the students in his new seventh-grade classroom” (Brett, Winter reflection, #1). Once I met Brett’s new mentor teacher, I realized that I had worked with him many times before in professional development days that I led for the urban school district’s middle school mathematics teachers.

I didn’t put two and two together until I walked into your room last Friday, Brett. Mr. K. is a great guy and is able to do some great things with his students. Make sure that you take, beg, borrow, and steal all that you can from your time together. But, before you do that, what has Mr. K. had to do in the first weeks of school to make this type of learning possible? It is your responsibility to make sure that this conversation happens before the end of February! (US, Winter reflection feedback, #1).
Brett’s new placement school.

Created out of an open enrollment structure that allows students and parents from throughout the urban school district to select a middle school environment that most precisely agrees with the learning, physical, and emotional needs of the students, Riverbank Middle School was designed as a magnet middle school that focused on a comprehensive curriculum with active opportunities for faculty and school administration to infuse the visual and creative arts whenever possible. While the century-old school facility was itself showing signs of age: cracked windows, leaking pipes, and crumbling brick and mortar, the school hallways were continuously vibrant and vivaciously alive with recently painted student frescoes that lined the walls of the creaking stairwells. Students would listen to music that accompanied the culture and timeframe of their directed language arts reading selections, and within each students’ daily scheduled Encore period, which immediately preceded the class Brett was assigned to teach, “all students were actively encouraged to express themselves through acting, painting, dancing, or singing” (Brett, Winter post-observation debriefing, lesson, #1).

While any student within the district boundaries could elect to attend this unique middle school, the school’s reputation for having average to below average standardized test scores limited the student population to the middle to lower socio-economic families that comprise the immediately surrounding community.
I would say that about ninety percent of the students are neighborhood kids of Caucasian or African-American heritage. While Riverbank Middle School has a long list of students who want to attend because of the emphasis on the arts, they have very few limited spots due to what I understand to be NCLB limitations (Brett, Winter reflection, #7).

The Path to Brett’s Empowerment

The benefits of mentor compatibility.

Undeniably, the most influential feature of Brett’s Winter Quarter field experience was the vibrant and productive relationship that formed between Brett and his mentor teacher within and outside of the classroom. As a graduate from a Bachelor’s-level teacher preparation program from another area of the state that espoused the importance of collaborative, technology-rich, student-centered learning environments, and consequently, a Master’s degree from Brett’s current teacher preparation program, Brett’s mentor was a teaching professional with over fourteen years of classroom experience. I personally had worked with Brett’s new mentor teacher through professional development opportunities offered within the school district and was consistently impressed with his relaxed interpersonal demeanor and willingness to find and implement authentic and varied learning experiences for his students.

While Mr. K. had repeatedly been asked to serve as a mentor teacher for entry-level middle school mathematics teachers within the district in a program
similar to Azeem’s Autumn and Spring Quarter mentor teacher, he declined the position and recognition in favor of his personal preference to work occasionally with a preservice teacher when asked by his principal and academic team leader.

Brett and his mentor teacher formed an almost immediate friendship based on their parallel views of mathematics education, and their relationship extended outside of the classroom as well. “I am so satisfied with my mentor teacher! I think I will be able to get along with him just fine on a personal and professional level” (Brett, Winter reflection, #1). With a common interest in college and professional athletics, the pair attended local professional sporting events together, and before the three-week orientation period had ended, Brett had been invited to join his mentor teacher’s adult recreational league hockey team. The need for a collaborative, engaging, and age-appropriate mentor teacher is an issue that Brett had previously lamented during his Autumn Quarter placement. With all of my personal tirades about the lousy process of mentor selection, I was elated that this pair was so closely matched, even if the result was serendipitous. For three out of four of my participants, the good fortune of Winter Quarter placements with effective mentor teachers would have positive long-term results.

A place to thrive and grow.

After only one week as a participant-observer in his new school, Brett was ecstatic about the potential of the placement “to help me implement the teaching style I want when my time comes” (Brett, Winter reflection, #1). Though in this reflection
summarized his initial impressions of his new placement, Brett places his actions as a classroom teacher in the future tense rather than the present; he does demonstrate the propensity for adapting a teaching style similar to that of his mentor “as exactly what I want to implement in my class” (Brett, Winter small group discussion, #1).

While Brett had shared with me through our Autumn Quarter reflections a series of well-formulated and well-articulated ideas to create the most supportive and positive mathematics classroom environment possible as a result of his previous classroom experience, his vision remained intangible without a clear depiction of how it could be achieved and guide to illuminate the path.

Within my heart, I had known that Brett had somehow been guided to the right place, and similar to Carrie and Azeem’s Winter Quarter experiences, I felt the most productive thing I could do to foster Brett’s development as a new mathematics teacher would be to support his decisions and actions and allow a sense of independence to grow. The first-hand experience and high level of interaction that Carrie, Brett, and Azeem would each receive from such capable mentor teachers would be of more personal value to them than any directive advice that I could provide. I was excitedly willing to relinquish some control in both situations and fade to the role of facilitator. From this perspective, I was more able to act as a guide for their field experience and along the path I looked for ways to raise questions that would provoke their thinking about teaching and learning.

As Brett also became more comfortable with his growing confidence as a classroom teacher, he joined Carrie and Azeem in abandoning the structured
reflection prompts provided by the program and began to focus on the problematic issues that came naturally to him as he planned his lessons and interacted with students. Once he had become comfortable enough in his Winter Quarter placement, I posed a few questions to him to generate some deeper thinking about the differences between his Autumn and Winter Quarter placements and his initial reluctance to be in an urban middle school. “Now that you have some level of experience with middle and secondary schools, Brett, what aspects of your teacher thinking have changed as a result of your experiences?” (US, Winter reflection feedback, #5).

I honestly didn’t know what type of response I would get, or in which direction Brett would chose to go with his response since he initially had said that middle school students and middle school curriculum initially held no interest for him. But, in his reflection response one week later, I detected some signs of change in his disposition.

Mr. K. has to deal with younger students with shorter attention spans and for longer periods of time since our math and literacy classes at Riverbank are scheduled in one-hundred-minute blocks. Because of this, he employs a style that is much more conducive to an interactive classroom. We have at least one lab for the children every week, and there are countless times when the students work in groups. Ms. T. \textit{[his Autumn Quarter mentor]} always said that ‘students waste too much time when working in groups,’ but I would say that wasting time in groups and still working is better than spending an entire period zoned out not listening to a lecture (Brett, Winter reflection, #6).
Thus, Brett had expressed to me that this was a place in which he could thrive and grow in his teacher thinking and in his developing classroom practice, even though I scoffed at his labeling of middle school students as children. I knew that my plan of giving him the necessary latitude and space to explore his own ideas and, at times, learn from the mistakes I knew would come was yielding positive and reflective results.

*Taking a proactive stance.*

*Being used to only forty to fifty minute classes during his own private school education and the majority of his undergraduate coursework, Brett expresses an understanding for the specific learning needs of his classroom audience as he acknowledges that he will have to deal with younger learners on a block schedule and sets forth an action plan to turn his classroom vision into reality. Before he officially assumed the role of teacher in his morning Prealgebra class, Brett reflectively considered his role in addressing the varying level of student motivation that he had noticed in his classroom observations from the previous week.*

I spent almost two hours in the school’s alternative learning center this past week, and I must say it is a rather dismal place located in the basement, right next to the boiler room. Problematic or unmotivated students get assigned to this place for days at a time depending on the level of their infraction. Despite the fact that many of the students placed in to this environment did little to no work in the normal classroom setting, all of the students I saw during my brief
stay were diligently working on their assignments from class or working on
their responses to as many as fifty writing prompts. The room itself was
depressing, but it was a positive because it shows that teachers still have some
leverage against unwilling and unmotivated students (Brett, Winter reflection,
#3).

I felt that Brett’s reaction to the school’s alternative learning center typified the usual
preservice teacher response to dealing with problematic students in the classroom.

Since each of my preservice teachers had naive mental images and
expectations for all of the students in all of their classes to exhibit high levels of
unearned respect, I needed to steer at least Brett’s thinking in a different direction.

In your reflection, Brett, you mention that writing is used as a punishment for
the students in this learning center. What implicit messages does this send
about writing as a mode of learning? What does it teach the students about
the writing process? Does this match or go against your beliefs about
constructing understanding? (US, Winter reflection feedback, #3).

I, also questioned Brett’s reactionary statements to students’ misbehavior and
unwillingness to participate, and attempted to steer his thinking to a more proactive
position.

Wouldn’t the leverage you mention fall upon the classroom teacher to design
active, worthwhile, and engaging activities for the students before they have a
chance to misbehave or act out? To a large extent, aren’t the behaviors of the
unmotivated student only side effects of the larger problems of being bored
and unchallenged in a traditional classroom? What can you do as a teacher, Brett, to stop the behavior long before it becomes a problem? Have you heard the phrase the best defense is a good offense? (US, Winter reflection feedback, #3).

I feel that this line of questioning allowed Brett to reconsider some reactionary teaching strategies that he had seen in action throughout his Autumn Quarter placement and possibly his own past secondary experiences. I also feel that these questions led to a reconsideration of Brett projected he would need to structure his activities in his first week of teaching. Brett did have some inclination of what he needed to do at the beginning of the quarter.

Since our major focus this quarter is going to be on my classroom management and the way I pace my lessons, I have been encouraged to notice that most of the students in the class I will be taking over could participate in activities without too much distraction. Mr. K. and I routinely get the students into pairs or teams of three to work on problems. Since my students are already conditioned to this, I will be able to spend even more time with the students working in groups (Brett, Winter Quarter goals, #1 & #2; Brett, Winter reflection, #1).

As a result of some deeper thinking, Brett began to piece together a more mature disposition of his students reticent nature as learners, especially those in their early adolescent years, “As a teacher, I will have to channel the energy in the room toward
something academic rather than try to control it, much like the way that Mr. K. does it” (Brett, Winter reflection, #4).

To me, Brett’s level of reflection and his willingness to adjust his current thinking in light of his growing understanding of schools and students was highly encouraging. Across the board, it felt good to know that I had at least three of my four preservice teachers in supportive and productive learning environments. In what was an unusual occurrence for me, these three mentor teachers were completely willing to give the entire classrooms to the preservice teacher and provide feedback to them when I could not be around. In the three weeks before he assumed control of the seventh-grade Prealgebra class, Brett felt welcome in his new classroom and school and comfortable with his new students and mentor teacher. As a result, he also expressed the direction in which he wants to take the class and expressed the sense of classroom co-ownership he has felt as a direct implication of the positive relationship he has developed with Mr. K.

Brett’s Developing Classroom Practice

Pulled in many directions.

Although Brett initially expresses an initial affinity for a “very casual, laid-back classroom management style because students seem to respond better to that” (Brett, Winter reflection, #2), he found himself pulled in many different direction by the students during his initial attempts at cooperative learning. Using a familiar activity that I suggested to him in which students count and classify M&M’s in order
to interrelate the multiple representations of rational numbers and to use authentic data to construct pie charts as sources of argumentation, Brett quickly found himself overwhelmed in a sea of students demanding attention to their work, students expressing frustration over unclear directions, students being unable to process too many pieces of information at once, and students meandering around the room (US, Winter lesson observation notes, lesson #1). Even though Brett had assigned the groups to different areas of the room, the lack of observable structure to the lesson, the noise level in the room, and the off-taskness of the students created unanticipated difficulties for him.

Exasperatingly, Brett admitted to me in our subsequent debriefing session that the group work activity that looked so good on paper led to such difficulties in its delivery. “I had no idea that middle school students still needed that much personal attention and approval from their teacher” (Brett, post-observation debriefing, lesson #1). Even though I had interjected into his drafted lesson plan my own perception of when he would need to start and stop the different sections of the activity to assess student progress and understanding (US, Winter lesson plan feedback, week 4), Brett was astounded as to how many different directions that his middle school students could go. I felt that this supported my thinking that preservice secondary mathematics teachers often get too focused on the lofty ideas of differential equations and multivariate calculus in their content courses that they tend to find more simple concepts hard to relate to developing, younger students who do not view math in the same way that they do.
Understanding his students as learners.

Our reflective exchanges during our debriefing session had an additional impact on the way Brett was thinking about his students. I feel these exchanges led Brett to independently reflect on the nature of his students as learners as he gained more classroom experience during his first week of teaching. “Actually, one of the first things that surprised me the most is the amount of reviewing a topic that is needed for a student to truly understand a topic” (Brett, Winter reflection, #4). Further, Brett independently reflects more about his students as learners, “I cannot believe how many different levels of knowledge are in the room” (Brett, Winter reflection, #5).

The importance of structure and engagement.

Even though Brett had a clear sense of what he wanted to do in his class, the less than stellar compliance with his rational number M&M activity and the level of student understanding within the lesson provided initial inroads for deeper reflection on his relationships with his students and the structure of the group work he was implementing in his classes. In this case, the cognitive dissonance between his expectations and student performance led to reflective action as he began to consider changes in his classroom practice and working with student groups.

In the remaining weeks of his placement, Brett became increasingly more adept in planning and implementing interactive and creative lessons. He also began
to develop a personal writing style that used the day-to-day interactions within his classroom as a source of reflection.

It’s tough having these young teenagers in my room for nearly one hundred minutes! But, I think I am now getting the hang of breaking down the activity into a bunch of different, little steps rather than giving them a packet I have just copied and say here, let’s work through this (Brett, Winter reflection, #5).

Based upon conversations with his mentor teacher and reflection feedback from me, Brett began to reconsider the length of the pubescent attention span.

Let’s think of it this way, how often have we, in a night class or boring meeting, let our minds drift off to the mountains, to the beach, or to the bar down the street? Allowing your students the opportunity to ‘check out’ from class, especially when you have them in your room for nearly one hundred minutes is only natural. I don’t think that there is any middle school student who can sustain a high attention level on any one task for that long. So, letting them ‘check out’ only supports the work that you are doing and your students as learners (US, Winter reflection feedback, #4).

By learning to place himself in their shoes, Brett reflectively contemplates maintaining student interest “by giving them activities that are based on some of the things that they like to do, and not what I like to do” (Brett, Winter reflection, #4).

Thus, Brett gained some practical understanding and a more professional perspective in managing not only the activity, but the classroom environment in which the activity takes place. Additionally, Brett realizes the need to incorporate
students in the democratic processes that will be taken-as-shared as he furthers his
teaching experience as noticed by the tone of plurality in the following process
decision that was made collectively between Brett and the students:

We have also established a system for getting their attention by lowering the
lighting in the room when I need to provide further directions or instructions
to them which has really helped out on the level of noise and distraction for
some of the students in the class (Brett, Winter reflection #6).

While this idea was not his own, but rather an idea I suggested during a post-
observation debriefing as a way to get all of his students on the same page during an
activity, Brett notes that “he [I] was always offering ideas and pushing me to try new
things, many of which were very successful in helping me control the class and
accomplish what I wanted to do” (Brett, Winter supervisor feedback form).

The value of students’ thinking.

As a third area of personal and professional growth that I was able to discern
from Brett as his teaching experience and confidence grew, Brett began to
acknowledge the importance of the students’ mathematical thinking and the students’
perceived diminished need for his approval as he implements the mathematical
activities in his classroom. In response to a series of my post-observation questions of
“Why are you taking so much of the group work time to explain the math they were
going to be using rather than letting them investigate the ideas on their own (Brett,
Winter observation notes, lesson, #3), Brett was led to formulate a new outlook on teaching as facilitating rather than telling.

Since I try to limit my talking in front of the class to fifteen minutes on most days, I have found that it is far more effective to have a student come up to the overhead to explain things, and then I just step in to reinforce and re-explain their work, if needed. But, today, I seemed to do most of the math talk in the class today. I didn’t think I was doing that much for them, and I just need to let go. They seem to be getting so much more out of the activities that way, and I don’t feel like I am constantly telling them what to do any more (Brett, post-observation debriefing, lesson #3).

Brett Moves Toward Teacherhood

Reflection becomes more personal.

While Brett’s reflective thinking does not follow an established pattern of self-questioning immediately followed by possible courses of action and their implications as evidenced in the reflective style of Carrie and Azeem, Brett’s reflective thinking takes a more independent path that does show growth toward more organized and structured lessons that center on the students’ authentic work on contextualized problems. Within his weekly reflective writing over the course of the Winter Quarter, I had noticed that in addition to using more authentic information and questions as sources for reflection, Brett was also able to take events and interactions from his
classroom and develop his own contemporary thinking about teaching and his students.

As noticed in the following excerpt, Brett reflectively considers the issue of student retention and then interjects his sense of ownership of the problem and his changing view of middle school students as learners and sense-makers.

Over the past quarter, I have noticed that some students have not been performing as well as I could hope on some of my assessments, most specifically, quizzes. A lot of this goes along with the struggle of retention I have been dealing with over the course of the quarter, and I think I have to shoulder some of the blame for that by not coming up with creative or helpful ways in which to learn the material. I have tried to come up with creative or exciting ways to present lessons, but I think this might be lacking in creative or helpful ways to explain the content. I mean, for me, it all just makes sense in my head, and so I do not need to have things explained explicitly or in an easier way, but I need to be conscious of my students’ understanding levels. I need to find a way to put everything into terms that they as middle school students will understand and relate to (Brett, Winter reflection, #8).

As I teach, I learn more.

I had not specifically mentioned this particular aspect of his teaching with him, but rather allowed my comments to lay grounded within my reflection responses and observation notes. I was able to detect a strong and growing sense of
professionalism through his words and within his daily lessons. However, I did feel that I needed to positively acknowledge Brett’s reflective thinking and to some extent lead him to realize that in his teaching, he, too, was learning.

What you have mentioned that you are learning as a result of your experience is a great step in your development, Brett. I also know that we have not specifically talked about the issue of student retention in our personal interactions or within our small group. If you want to think about it this way, this would be a great example of Mr. K. and me allowing you to learn about middle school students on your own, Brett. Now, I guess, the question becomes: How can we increase their level of accountability while still maintaining the creativity of the lessons and the students’ interest? (US, Winter reflection feedback, #8).

Written in one of the last weeks of his Winter Quarter teaching experience, Brett’s previous reflection excerpt begins to zero-in on his personal responsibility in the work of teaching and illustrates a shift in Brett’s developing teacher thinking. Whereas Brett entered this field experience with the thought processes to lead him to teach mathematics through student-centered frameworks, he now realizes that those same lesson frameworks cannot develop out of nothing and that these types of lessons must be carefully constructed and monitored while in the process of teaching.

With the help of probing and delving questions from me and the close, daily interactions with his mentor teacher, Brett had come to view teaching as an enterprise wrought with problems and the positive, supportive classroom he wants to
create cannot happen of its own volition. I felt that the Winter Quarter placement had provided a powerful opportunity for Brett to take a huge step forward as he was able to gain insights from his own actions in the creation and implementation of productive and sustainable classroom communities.

As the final days of the field experience approached, Brett began to show signs of mixed emotions.

I would have to say that I have really enjoyed my time spent at Riverbank Middle School, and I have felt like it has been a very productive quarter as far as furthering myself as a teacher and becoming aware of my own strengths and weaknesses as a teacher (Brett, Winter reflection, #9).

Brett was grateful for the experience he had gained, but sad to leave the students he had grown to care so much about and the mentor teacher who had befriended him. As evidence by his classroom practice and his more thoughtful and thorough levels of reflection, I was personally assured that Brett was able to meet the majority of his goals for the field experience. He had begun to extend his teacher thinking in ways that moved beyond content to focus on structuring classes through the use of group work and had worked to “know something personal about each one of my students” (Brett, Winter reflection, #6).

Blending practice and beliefs.

Yet, perhaps a paramount realization for Brett came as he was reflecting on the quarter as a whole. When given the opportunity to supply feedback about the
experience the department Program Manager, he publicly acknowledged the factors that had strongly contributed to his increased confidence and being closer to his articulate vision of his future classroom. “My university supervisor provided tons of feedback, questions, and suggestions on my lesson plans, observation notes, and reflections. I feel that he allowed me to make my experience exactly what I wanted it to be” (Brett, Winter supervisor feedback form). I was so very happy, not for the public praise to my direct supervisor, but for his personal and reflective recognition that he had begun to mature in his teacher thinking as a result of our work together.

Yet, Brett went further to describe his own progress with me individually through what had become not only his, but our collective and cooperative reflections. One of my goals from the beginning of the quarter was establishing a classroom management style and implementing it in my classroom. While there is still plenty of room for me to improve in this area, I think I made some good initial strides. The most important thing for me was that I had a classroom management style that fit my personality. I was not trying to be someone I was not, and because of this I was able to enjoy my time in the classroom and not always stressed out about misbehaving students. I know some teachers who might have been stricter on certain students in certain situations, but for me I had to be myself (Brett, Winter reflection, #9).

Here, Brett comes to the realization of the purely humanistic aspect of teaching. In uniting his beliefs, his personality, and his classroom practice into one whole, he
explicitly states the necessity for his teaching self to live as a natural extension of the way in which he conducts his life.

Summarizing Brett in Winter

Looking back at his entire experience, Brett entered the Winter Quarter placement with a great apprehension for middle school students and their learning environments. However, with the supportive and conducive relationship with his mentor teacher, who inevitably became a close personal friend and without whom I feel such a positive change and growth would not have occurred, Brett was able to successfully fuse a classroom management style with his caring personality. Focusing on the human aspects of teaching and reflecting on the interpersonal relationships that grow naturally out of positive learning environments rather than the cold and unfeeling symbolic manipulation that traditionally comprises mathematics instruction, Brett was able to reflectively place structure around his lessons so that he could interact with each student in his class. As a result, Brett was able to reflectively define himself as the teacher he wants to be on his own terms while still within the confines of his teacher preparation experiences.

Brett in Spring

The Context of Brett’s Spring Quarter Field Experience

Undoubtedly, of my four participants, Brett’s interaction with the students in his Winter Quarter field experience in the urban middle school and the close
relationship he was able to cultivate with his mentor teacher were two critically defining aspects of his developing classroom practice and his teacher thinking. Given free reign of the classroom by his mentor teacher to try a multitude of varied, student-centered activities to bring the middle school content to life for his students, Brett left his winter experience

Having pieced together what I think would be my ideal classroom, borrowing ideas from many different teachers and my supervisor. Now, as I begin my student teaching, I will have the chance to put it into effect and evaluate its strengths and weaknesses (Brett, Spring reflection, #1).

Looking toward his Spring Quarter student teaching as a chance to put his contemporary thinking into action and as an opportunity to present his developing teaching style to work with “the high school students and high school content that I am more comfortable with and really way more interested in teaching when I get my first job” (Brett, Winter small group discussion, week 2), Brett and I both anticipated another ten weeks of positive growth and professional development.

Spring placement number one.

In fact, as Brett learned of his new Spring Quarter mentor teacher and his new field placement within a newly constructed and secure high school located within one of the two most affluent suburbs in the metropolitan area, he was excited about its prospects and possibilities. We were both excited to have such new resources, classroom sets of laptop computers within the math department, and wireless Internet
access in each classroom. However, as we were to soon learn, the new and attractive physical facilities of the school district realistically amounted to nothing more than old wine in new wine sacs. After spending the first entire week of the Spring Quarter placement within his new environment, Brett quickly confided his personal dissatisfaction with his new surroundings to me through a personal email and through his first reflection.

“I was disappointed with the mentor teacher I was assigned, and the things I have been doing or want to do in my class stand in direct contrast to her actions within the classroom” (Brett, Spring reflection, #1). Citing a strong desire to “challenge myself to try something new;” (Brett, Spring small group discussion, week 2), Brett went into further details as he provides a rationale for wanting to request a new placement for his student teaching.

The long-lasting effects of empowerment.

Maturely acknowledging the fact that he didn’t feel it appropriate to speak in ill-will tones about a woman who had been nothing but overly polite and nice since his arrival in her classroom one week ago, Brett shared with me that I did not feel that I would be able to learn anything new from her. Her mode of instruction never varied. It was always a constant lecture and she simply plugged through the book section by section with no variance. She not only never employed collaborative learning, but openly discouraged it. Her lesson for each day consisted of going over the previous night’s homework and
maybe two examples for the next night’s homework. Then, she would sit at her desk and continually yell at the students to be quiet. I really didn’t feel like I would learn anything about instruction from my mentor teacher and her classroom management was not a style I wish to emulate (Brett, Spring reflection, #1).

My first comments in my response were reactionary. I attempted to smooth over Brett’s disappointment with his new mentor with a ‘wait and see’ dismissiveness. Even within my reflection response, I attempted to give some insight to the relatively unfamiliar pedagogies he was proposing to use.

Teaching through activities is still not extremely popular within secondary school classrooms, Brett. You are definitely pioneering some new territory with what you want to do, especially with some of the older teachers within our public schools. This is something you will face as you try to establish your teaching style within your first-year classroom. There will be teachers in the building who will say that you are not doing your job because of the amount of noise and interaction coming from your room. This highlights the contrasting styles that are evident in any school across America. The paradigms are beginning to shift; we hope, and it will take some time before our views of teaching are more prolific throughout schools (US, Spring reflection feedback, #1).

But, as I had the opportunity to reconsider the reflective advice I was giving, I began to reflect on my own words and the impact they could have. Was I not standing
in direct contradiction to the classroom independence and empowerment that I was trying to support? I had seen such productive classroom and reflective development from Brett throughout the Winter Quarter experience, and I began to rethink my current position, and began to champion Brett’s cause with the Field Placement Office.

After my own rethink phase, I interpreted Brett’s criticisms and reflective words as containing a strong sense of personal and professional empowerment that had become inherent in his Winter Quarter experience. While I was unsure about the course of action that would be taken within the Field Placement Office, I felt that I needed to personally applaud the professional approach he had used to resolve the issues with his student teaching placement, but in my usual way, I could not resist presenting some questions to get Brett to examine why this particular teacher still relied on the traditional.

What a huge sign of personal growth this is, Brett! I do compliment you on your handling of the situation in requesting a new placement, but please realize that if you change schools there will be no guarantee that your alternative placement will be no better than the one before. While we are on the subject, though, let’s think about this. Why would she never vary her instruction? Does this pedagogy work for her? Is she still entrenched in a pedagogy that makes her life easier than teaching students to learn for understanding? How deep do you feel her content knowledge runs? Can this
type of pedagogy ever lead to learning with understanding? (US, Winter reflection feedback, #1)

Coming fresh out of an empowering Winter Quarter placement in which he was able to establish a solid foundation and affinity for cooperative learning frameworks as a mode of engaging students and enlisting their thinking about mathematics, Brett publicly acknowledged the lack of potential for positive change with his current field assignment. While Brett continued in his reflection to highlight other rationales for the stark contrast between their two belief systems as being rooted in her “mundane attention to process,” his well-constructed arguments against his current placement did carry weight with the Program Manager who wanted to create a process for selecting more effective mentor teachers for the math, science and technology education programs. More importantly, though, I detected a sense of empowerment in Brett’s personal authority and a desire to improve himself professionally and personally in ways that had been previously non-existent in his easy-going nature. Thus, after the rewarding experience within his middle school placement in which he was able to find and use his teacher voice, Brett reflectively acknowledged and resolved the cognitive dissonance between his own beliefs and the lack of potential for further growth.

Spring placement number two.

After a contentious and never fully-explained parting of the ways with his initial Spring Quarter mentor teacher, the department Program Manager, with my consent and encouragement, was able to manipulate and circumvent the politics of
field placements to secure a second student teaching placement for Brett. Using the knowledge that Carrie was also having placement difficulties as well, the Program Manager was able to capitalize on the same placement opportunity to find a second mentor teacher for Brett within the same building. Finally, at the beginning of the second week of the quarter, Carrie and Brett arrived at their urban high school for the remainder of their new field placement together.

*Even though Brett admitted to me some initial reservations about his second Spring Quarter placement, he remained true to his nature in focusing on the positive.*

Being at Celestial High School is still not the ideal set-up for me, like last quarter when I had a mentor teacher I could relate to, but the math staff here is awesome and the resources that are being made available through my new mentor and the math office will definitely help out this quarter. I also get to work with and learn together with a fellow student teacher in the building who shares the same free period as me (Brett, Spring reflection, #1).

**Challenges I Will Have to Work Through**

Brett also shared with me soon after his arrival through our small group forum that he was disappointed that he will have to be a “traveling teacher and rotate classrooms throughout the day and sharing classrooms with others will mean that I have to constantly rearrange the room after I use my groups everyday” (Brett, Spring small group discussion, week 2). *While this problem created severe classroom ownership and organizational issues for Charles in his student teaching experience*
across town, I was encouraged that Brett approached the dilemma differently and addressed the issue simply as a “challenge that I will have to work through” (Brett, Spring post-observation debriefing, lesson #1).

Creating a space to call his own.

The entire initial two weeks of Spring Quarter were a disappointment and a definite challenge for Brett to orient himself to two different school buildings with contrasting school cultures. However, stepping back to examine the problem from my perspective as his university supervisor, I felt that Brett had demonstrated growth in changing his disposition from accepting the day-to-day reality of another teacher’s classroom as he had in Autumn Quarter, and he powerfully asserts his own will to teach in ways that are consistent with his developing belief system regardless of what he must overcome.

From our initial meetings and conversations in his new Spring Quarter placement, I sensed that Brett was anxious to become involved with his new school and new students. Almost immediately within the first week, he and his mentor teacher, Ms. C., had devised a plan to make the teaching transition as smooth as possible for the students by team teaching two lessons in each class before he assumed classroom control of her teaching schedule by the end of his second week.

I like the structure of the classes that I have been able to set up more than last quarter, but at the same time, I am having trouble doing interesting or
different things with the subject matter and students (Brett, Spring reflection, #2).

The time challenge.

Although he was initially pleased with the three content courses, Algebra I, Algebra II, and Geometry, he would be teaching over the course of this field experience, Brett quickly realizes, as most preservice teachers do, that the amount of time that three different preparations creates. Continuing his preference to use situations that arose naturally out of his current thinking or that came directly out of the difficulties he experienced in the classroom rather than the departmental reflection prompts, Brett presents his reaction to the pressures of time on a new teacher.

I am getting the full experience of what it is like and what it takes to be a successful teacher, but I will say right away, that the daily schedule of being a teacher is far busier than I expected. I really don’t have any time during the day to catch my breath as I feel like I am constantly rushing to different classrooms and getting things set up for the class of that day (Brett, Spring reflection, #3).

I noticed this same refrain coming from each of my participants’ reflections after they had begun to assume control of the mentor’s teaching schedule. In my responses, I wanted to remind each of my participants that I had warned of the time constraints that accompany any student teaching experience way back in our first
weeks together in Autumn Quarter. But, I resisted with the rationale that readdressing the issue would only come across as having an “I-told-you-so” smarminess that I didn’t want to interfere with our community of five. Plus, as I reflected more, I was now able to see that what they currently needed to hear was not how I had warned them, but what coping strategies I could share to help them relieve some of their stress.

As I had come to expect, Brett directly confronted the issues of managing his time and turning the tide of student opinion toward his favor. The classroom structure that he inherited from Ms. C. could only be considered predominantly traditional by the teacher-led style in which the classes were taught. However, Brett was able to slowly bring the students around to the style of teaching he had established during the prior quarter.

The students have taken well to the interactive and group work format that I have tried to put into place, and it is a format that right now suits my style as a teacher very well, and more importantly, it initially seems to be suiting the needs of the students as learners very well as they are able to really participate in the learning process (Brett, Spring reflection, #3).

The creativity challenge.

After setting one of his Spring Quarter goals of wanting to present the content of his lessons in creative ways at least twice a week (Brett, Spring Quarter goals, #3), I noticed that the high degree of creativity in lesson planning I had come to expect
from Brett was beginning to wane. While I suspected that time issues was cutting down on his planning and think time, it was more the case that Brett realized that some of the topics he is required to teach, such as the simplification of rational expressions, factoring polynomials, and completing the square, are difficult to approach through creative means.

Looking at the curriculum and trying to plan ahead, I have yet to really think of anything creative to do with the students in their groups. I think it was easier to do creative things with my middle school students, but because of the cynicism that some high school students have, I am having trouble thinking of things that will work in a high school classroom. I am also having trouble with the material thinking of different or exciting ways to present it (Brett, Spring reflection, #3).

It had been my experience in working with Brett that creative lessons or non-traditional approaches to the content were not hard for him to develop. But, as he mentioned in his reflection, he had been finding interactive and mathematically-rich problems for middle school students. Brett did not feel comfortable that his high school students would have the same attitude if he asked them to count chocolate candies. I did attempt to present some suggestions for his activities, but again, tried to problematize his thinking about the canon of secondary mathematics.

You could try some connectivity types of questions and activities, Brett. By putting triangles or quadrilaterals in circles, you would reinforce some of their geometry learning while also getting them to investigate these angles,
shapes, and intersections from an algebraic perspective as well. But, let me present these questions to you as you plan. Who decides what content gets put into your textbooks? Why are some of these topics still included? If you had the power to rip out up to ten sections of the textbook you consider unnecessary, which ones would be the first to go? Why do you feel we don’t need to teach those topics anymore? (US, Winter reflection feedback, #3).

Building Brett’s Vision

As the quarter progressed and as Brett interacted more steadily with his fellow teachers within the math department to gain ideas, perspective, and resources from their collective years of experience, I was again encouraged by the progress I was witnessing and reading about weekly. It seemed that Brett was able to reach some unanticipated learning outcomes through the interplay of his classroom practice and his reflective thinking.

Getting comfortable in the classroom.

As Brett communicated within a reflection once he has assumed control of his mentor teacher’s entire teaching day, he reaches a level of comfort within his classroom as he begins to encourage student engagement and their own thinking.

Since I have had more time to focus on student teaching with less [university] class work, it has been nice as I have been able to experiment with different things in my classes. In Algebra, I have used some of the ideas [Tim] gave me
for using the TI-83+’s, and we have been working with graphing calculators a lot. I have also created some worksheets in conjunction with the calculators as the basis for discovery lessons with quadratics, and I noticed the first day that the more interactive spin I had put with the lesson caused the students engagement to be at a higher level (Brett, Spring reflection, #5).

This initial success incorporating his students’ interests encouraged Brett to try other ways to present secondary content to his students through alternative frameworks and pedagogies.

I know that in all of my algebra classes, with student interest waning as the year draws to an end, I need to continue to keep mixing it up. I have used the individual white boards in class to work on problems and have tried to relate some of the topics to money which is something they are always interested in. In geometry, we have learned through playing games, creating song lyrics for angles in circles and set them to music I downloaded to my iPod, experimented with finding the volume of the classroom, and have tried group quizzes with a phone-a-teacher component (Brett, Spring reflection, #5).

I was continuously amazed at the creative and interesting ideas that Brett developed for some relatively dry content. In fact, his iPod lesson even pressed my own thinking of how I could take some of his ideas and apply them to the learning of university students. At the risk of being too manipulative in my questioning, I pressed Brett to think more deeply about the positive student reactions he was receiving.
You wouldn’t think that a small screen and some buttons to push would have this strong motivational effect. But, have you stopped to consider WHY these out-of-the-ordinary things have been so successful? Is student engagement merely a way to figure out which gimmick will work to get them to do work? So, now, how DO you make the ordinary, out of the ordinary? (US, Spring reflection feedback, #5).

I had hoped with a grou- sharing of their most successful and non-traditional lessons or lesson ideas would create some enthusiasm for collaboration within our group, and could possibly move Charles away from the traditional, once he saw some of the ideas that Carrie, Azeem, and Brett had successfully employed. Brett shared with our small group that he admits that the teaching strategies he has used were not as creative as he might have envisioned when he set his goals at the beginning of the quarter. We all got a good laugh at his initial reactions to the students who had suddenly enlivened to become more engaged in their learning. “I will say that I haven’t heard that [curse] phrase of ‘when am I ever going to use this,’ and the students have stopped writing ‘Math Sucks’ all over the desks and chalkboard” (Brett, Spring small group discussion, week 6).

Students need variety, too.

From what I had speculated to be a direct response to the questions I had presented in my previous feedback, Brett stepped back from his position as the students’ classroom teacher to return to the shoes of the student. By his reflective
posturing and examination, Brett demonstrated a heightened sense of maturity and developing professionalism as he reflectively contemplated the effectiveness of the teaching strategies he currently uses on his students and their learning.

Students don’t want to do the same thing everyday and its human nature that repetition will only lead to boredom. What is happening in my classroom reinforced an idea that had been told to me and one that I am coming to believe, and it is that instruction must be varied. (Brett, Spring reflection, #6).

After I had observed Brett teaching a geometry lesson in which his students used white boards and group work to solve contextualized problems, Brett makes further connections to his big-picture ideas taking shape in his head in response to my questions of what aspects of the lesson were most successful.

The white boards were surprisingly successful. I mean it was so simple, but complex at the same time. I mean, all it really amounted to was having the students write their work on whiteboards instead of paper and then displaying their final answer, but for some reason this intrigued the students on this particular day. They really got into it, and I feel that they were able to be confident in their work as they walked out of the class. I think it just goes back to the idea it was something new (Brett, Spring Post-observation debriefing, lesson #4).

Thus, I felt that Brett was able to come to his own practical understanding of words he had been told by a fellow teacher and was able to implement a classroom style that went beyond one class and encompassed his entire teaching load. “My
growth in planning lessons has come from incorporating my personality into my lessons so they could be something about which I could be enthusiastic” (Brett, Spring reflection, #8). Holding true to his developing learn-by-doing teaching philosophy as he experimented with different teaching methods, I got so bogged down earlier in the quarter because each lesson that I presented wasn’t something new and original. That took way too much time than I had available. But, once I got to thinking, I realized that a lesson did not necessarily have to be extremely interesting or entertaining, but sometimes just had to be different in order to engage students. Sometimes we would do something, like the whiteboard homework review, that I thought would be boring and below the students ‘cool level’, but it would go really well. I already knew that variety was important, but it was interesting to see that the variety did not always have to be something completely original and entertaining (Brett, Post-study questionnaire, item #11).

Using rapport to facilitate learning.

Existing in the same urban high school placement as Carrie, Brett was also familiar with the challenges that the radical ethnic mix of the student body presented. While I encouraged the two of them to create their own professional development conversations during their common lunch and planning periods, I distinctly noticed that Brett was not tested in terms of classroom management issues to the same degree as Carrie. I feel strongly that gender may have played some part in the level of
resistance they both experienced. However, Brett could rely on what he learned previously. He needed to make inroads with the students and build a strong rapport with them as a result of his learning and interactions with this Winter Quarter mentor.

When I started, I inherited a far more hostile crowd than I expected. Ms. C. is not the most popular teacher in the building, and many students do not like her class, her yelling, or her rants. So, many of my students were predisposed to this negative idea of math and their math class (Brett, Spring reflection, #3).

But, drawing on the belief articulated in each of his field placements of wanting to create the most positive learning environment possible, Brett was able to successfully build rapport with the students in his own way.

For me, it was a little bit difficult at the start of the quarter. However, I have felt that my classroom management has been rather successful, and I have slowly been able to win over most of the students. I have remained positive with the students and I have always been very honest and rational with them, and I think they appreciate this (Brett, Spring reflection, #3).

After a geometry lesson I observed midway through his six-week teaching requirement, I noted one male student sitting in the far left corner of the room dressed all in black and sporting a striped, wool toboggan in the sunny days of May. During the course of the lesson, it was evident to me and to Brett that the student was intent on creating distractions to the others seated around him (Brett, Spring observation notes, lesson #3). This student and his actions were the topics of an extended
exchange during our post-observation debriefing that immediately followed, but rather than chastise the student to gain his compliance to his lessons’ activities, Brett instead used this instance as an impetus to know the student better.

He returned to the learning and emotional needs of the student in the black toboggan with in the following week’s written reflection.

It is important to know about the students and show them that you want to know about them. I have found that after showing interest in a student and dealing with them in a very fair way, he or she will do the same with you. For example, there is one student in my fourth period geometry class who has already failed for the year and is dead set on doing no work. I could tell all he wanted to do was disrupt my class from the start, but instead of responding to him with hostility, I just kind of ignored his attempts and just kept asking questions to try and get to know him. Over the past couple of days, I found out that we have some similarities in musical taste, so now we talk about that most days. And, since I took the time to talk to him and get to know him, when he does occasionally disrupt the class, I can ask him calmly to stop, and he most of the time he will because he knows I am being fair with him. So, I have seen the benefits that a strong rapport with students has (Brett, Spring reflection, #6).

While I had noted in my own writings in preparing for this project that this reflective excerpt did not move beyond a reporting of his interactions with a problematic student in his class, I did distinctly feel that it presented a conscious choice that Brett
had to make which speaks directly to his developing classroom maturity in attempting to deal with students in a positive and more personally meaningful ways.

The power of positive relationships.

In a separate circumstance, Brett also learned about the benefits of strong student rapport when he and his Winter Quarter mentor teacher helped chaperone an overnight fishing trip for the students at his old school. Taking a Friday near the end of the quarter as one of his three personal days from his student teaching experience, Brett was happy to be back amongst the middle school students he once taught and had missed since his departure. In a reflective summary of the trip I had encouraged him to write as one of his weekly requirements, Brett attempted to relate to me how meaningful the fishing trip had been to him and to his students.

A lot of the kids who went on the trip, in fact most, have been raised in the city and have not been afforded the opportunity to experience nature or a non-urban setting for any sort of extended period of time. So, it was cool to see how little things like catching a fish or seeing big rocks were enough to make the kids that went on the trip happy, but I think the best thing about the trip was being able to see the kids outside of the classroom environment. It was just so great getting to see them be themselves and get excited about things versus the apathy that I get from my high school classroom (Brett, Spring reflection, #6).
This particular writing brought back many happy memories for me as I related similar rapport building successes with students after chaperoning middle school weekend trips to Washington, D.C. and Williamsburg, Virginia. In fact, we spent most of our lesson debriefing session that week sharing our thoughts and feelings about the highly personal work of teaching in out-of-school learning opportunities that are not often included in university coursework syllabi.

In further relating his experience from the weekend trip to some of the students, Brett realized that being able to relate to students on a personal level outside of school can also have motivational effects on students’ performance.

One of the students in my third period Algebra I class attended Riverbank Middle School and went on the same fishing trip when he was in seventh grade. When [this student] found out that I knew Mr. K. and went on the trip, his effort and participation in my class doubled, maybe even tripled! He is one of the most polite kids, or people in general, that I could ever hope to meet, but unfortunately he is one of the lowest achieving students in the class. Nonetheless, with his increased effort over the last couple of days, he has been able to understand the lessons better and this has increased his self-confidence. It was awesome to watch and know that this was the reason he was trying so hard (Brett, Spring reflection, #6).
Summarizing Brett

On so many levels, I noticed that Brett was able to reach many of the students in his classes through his honest and open rapport. Many of the students his Spring Quarter mentor and fellow teachers in the math department had written off as too problematic or labeled as trouble makers and exiled to the back corners of their classrooms had become Brett’s favorite and most productive students. In the final weeks of his student teaching, Brett attempted to pull these random events and threads of his own experience into a more fabricated understanding of the humanistic aspects of his work.

Over the past year, I think I was able to really learn how to establish student rapport from my Winter Quarter mentor, and I was able to put this into practice during my Winter and Spring Quarter experiences. In any setting, but perhaps more so in an urban setting, I do not think that yelling or instilling fear is an appropriate means by which to manage a classroom. With the home life that some of these students have been telling me about, a yelling and screaming teacher is probably the last thing that they need. I have learned that part of being an educator, probably the most important part for me, is being a mentor for the students, a positive and encouraging influence in their lives (Brett, Spring reflection, #8).

Even though his current mentor teacher did not agree with his less-stringent ways of dealing with discipline, and on occasion castigated him for the level of noise emanating from the room when she would be out of sight working in the math
department office, Brett and I had realized through his thoughts and our shared reflections that he had to conduct himself within the walls of his classroom in ways that were directly related to his beliefs about teaching and the power of positive interpersonal relationships, anything less would be unacceptable to him and his teacherhood.

I hope that all my students were able to learn a lot about mathematics and increase their confidence in their own thinking. But, when I look back at my student teaching experience, I am not going to remember the time when everyone talked about the Pythagorean Theorem. I am going to remember the students. While the ultimate goal is for students to understand math, there is a lot more to teaching and to life in general (Brett, Post-study questionnaire, item #16).

While Brett, at times in the early going, felt abandoned and ostracized by mentor teachers who could not relate to his deeply rooted convictions in the power of positive and productive student-teacher relationships, I felt he was indeed able to reach many of the students his mentors and fellow teachers had previously classified as unteachable. Armed with a solid content knowledge, a reflective personal commitment to struggle with and work through the issues and questions that naturally arose from his classroom experiences, and an overwhelming desire to be different, personable, and creative in the way he structured his lessons, Brett was able to make productive gains in developing and refining the vision of his ideal classroom. I feel he did come to understand the ephemeral nature of content within the minds of students
without a direct connection to their daily lives, but more importantly, he came to
realize that teaching, in and of itself, is an inherently human activity devoid of
specific learning objectives and activities. In focusing his attention on strong positive
rapport, Brett was able to leave his distinctively human impression on the lives of his
students.
CHAPTER 8

MY STORY: THE PATHS AND IMPLICATIONS OF RESEARCH

As a means of providing clarity for the reader, the following chapter presents my perspective of the background, events, and issues that have surrounded this project. I also include an elaboration of my learning and insights through interactions with my participants and my own use of reflection as I tried to assist my secondary mathematics preservice teachers to develop their own reflective habits of mind. While the four previous chapters present my voices as educational researcher, narrator, and university supervisor through alternating typesets, in the telling of my own story, there can be no definitive separation of voice. As hard as I may try to separate my distinctive roles within the creation of these case studies, the distinctions begin to blur since each voice has become essential to the articulation of my own learning and understanding.

Stones in the Road: Creating and Living on the Path

Stepping back from my multi-faceted role within this project as university supervisor, teacher, confidant, advocate, critic, expert, novice, and educational
researcher, I am amazed at the path that our collective journeys have traversed over the past year. I now understand this project could never fully be terminated in my mind nor could the impact of our collective learning experiences in the process of becoming secondary mathematics teachers ever be completely and holistically be summarized in the short span of a set number of pages. The interactive processes of thought and action, of conceptualization and verbalization, of the very acts of teaching and learning, have not only created opportunities for me to encourage the support and development of the preservice teachers who so openly and willfully shared their story with me in the creation of this project, but these symbiotic acts have also encouraged my own development as student, as teacher, as university supervisor, and as educational researcher.

*Small beginning steps.*

I sit in front of my laptop to recall the seemingly insignificant beginning of my involvement in this project almost exactly four years ago to the day. I had arrived on the campus of this ‘large, midwestern university’ with no real sense of what to expect and with no clear roadmap of how to reach my end goal of a terminal degree in mathematics education. Agreeing to work with two other university supervisors to construct and field-test a more descriptive and informative summative assessment tool for the math, science, and technology education department, we were given the charge of fusing together the expectations of the program, the candidate proficiencies within the unit’s conceptual framework, the reform-based practices espoused in the
revised content standards issued by the respective specialized professional
associations of our respective content areas, and newly-revised state and national
standards and expectations for teacher licensure and certification.

At the time we accepted the assignment, I had no idea that the document we
would create would frame my doctoral program experience, eventually leading to the
formulation of a research proposal, and eventually, my dissertation. The pages that
follow give a small glimpse into the way my contemporary thinking has evolved as I
have reflectively grown, examined, and revised my own belief system with respect to
mathematics education as a direct result of this project. Through the pages I have
written and the lives that have touched my own, I have also reshaped the way I feel
that secondary mathematics teachers should be prepared.

My present is shaped by my past.

To more completely understand my perspective, I feel it is necessary to share
some aspects of my own teacher preparation program. Recalling my own student
teaching experience nearly two decades ago, the research base in mathematics
education was just beginning to establish its roots in the soil of math classrooms
across the country. The graphing calculator had just been unveiled as having the
potential to change the way in which the students and teachers around the world
would view math and the tedious, abstract, symbolic manipulation that had previously
been the mainstay of the discipline.
My mixed-discipline group of twenty secondary preservice teachers was sent out into schools under the direction of a single university supervisor. She alone was responsible for collecting oftentimes handwritten unit and lesson plans from each of us in the five to six classes we were assigned to teach each day. She was required to organize our cohort’s weekly seminars, and she was required to travel between the fifteen different high schools in which we were placed that coincidentally spanned a five county area in the heart of Appalachia.

Needless to say, we did not receive the most detailed feedback from what we had submitted. The two times I was officially observed teaching during my sixteen-week experience did not provide many opportunities for critique and support from this official spokesperson of the teacher preparation program in the field. I personally felt that two isolated observations of my daily teaching was hardly the basis for any constructive criticism or a fair final evaluation. However, these were the conditions placed around the field experiences of my teacher preparation program that had been limited by strained budgets and the lack of qualified personnel. The events of my student teaching experience and the isolation and alienation it impressed upon me had a strong effect on my actions and interactions with the preservice teachers I supervised over the past four years working with the secondary mathematics teacher preparation program. I felt a personal responsibility to give them more than I had. I felt I needed to give them the support, the encouragement, the empowerment, and the feedback that I did not experience on my path of growing into my own teacherhood.
Living the role of the student.

Perhaps the most comfortable and familiar role for me during the first two years of being in this doctoral program was accepting the role of the student. Having completed the bulk of my master’s degree program in secondary education in the year previous to my arrival at this institution, I had established the self-discipline and desire necessary to successfully complete my coursework while still balancing three Graduate Teaching Associate positions. The completion of projects and assignments was nothing new. Coping with the increased load of coursework as I found ways to balance my work teaching mathematics courses and supervising preservice teachers was initially challenging, but personally rewarding. As the isolated roads I traveled within my cognate areas of mathematics education and teacher education began to intertwine and fuse together, I was able to make connections and piece together the elements of a bigger picture. From the creation of literature reviews, my original conceptual framework, national conference proposals and presentations, my original five-year secondary mathematics teacher preparation program, and eventually this project, I found myself embroiled in a process of learning by doing.

Through the integration of all my coursework, my jobs as a Graduate Teaching Associate in two different departments, and my developing research interests, I noticed myself becoming more acutely aware of the learning in which I had become embroiled. As I learned more about teaching, I found myself changing the way I thought about the interrelatedness between the two actions. The more I
allowed myself to honestly and reflectively learn from my own teaching, I feel I became more effective in teaching my preservice teachers to learn.

I think Carrie may have summarized it best when she realized in a ‘light-bulb moment’ contained her final written reflection of her student teaching experience. “I was actually applying what I had learned to teaching” (Kristin, Spring reflection, #8). However, in my case, the realization was that I had become a more mature student of the circumstances and events taking place around me in the world of education. The classrooms I visited and the lessons I observed became a catalyst for not only the development of the preservice teachers in my study, but for my own questioning and thought processes. I, too, had learned to apply, and even invent, the techniques of qualitative research as I attempted to respond to my deepening questions through the progression of this project.

*Living the role of teacher.*

A second familiar role as I embarked on my doctoral journey was that of the classroom teacher. Having eight years of experience teaching all levels of middle school and secondary math classes, along with the additional experience teaching literature, language, and writing with middle school students, I was quite comfortable adapting to the expectations for teaching within the mathematics department at this university. At first, I took teaching assignments to lead recitation sections for large, lecture-driven classes in college algebra. In later quarters and as my reputation for teaching spread through the upper echelons of the math department, I was given more
individual classroom freedom. I accepted the challenge of teaching remedial algebra courses within the math department for six sequential quarters.

Yet, it was not until I became engaged in teaching undergraduate mathematics courses designated for future elementary and middle school teachers that my contemporary understanding for the possibilities student-centered, interactive, problem-based pedagogies began to parallel the research base and course objectives of my math education and teacher education coursework. I began to formalize and make public my developing personal beliefs that classroom teaching cannot rest upon a foundation of telling. As a teacher, I had come to believe in the meaningful realization that the most effective forms of teaching required the problematization of content, the engagement of student interest, and the interaction and communication of students’ current understanding as they address individual misconceptions in the construction of personal meaning. In short, I had come to a critical point in my professional development.

Through activities, questioning, and personally knowing my students, I realized and put into practice a teaching philosophy centered on the belief that, most often, the most effective ways to teach students is by *Teaching with My Mouth Shut* (Finkel, 2000). With the encouragement and support of my adviser in the program, I was also able to expand my new, more-encompassing, teaching style and teacher thinking in the direction of math methods courses as I was able to co-teach the first in a three-course sequence with the secondary mathematics preservice teachers included in this study.
Having at least two Graduate Teaching Associate assignments for the entire duration of my doctoral program was challenging, and at times disconcerting, especially when my responsibilities for classroom teaching within the mathematics department fell into direct contrast with the supervision work I was performing for the college of education. I readily admit that my work during the first two years supervising secondary mathematics preservice teachers predominantly followed a teacher-driven, in this case supervisor-driven, mentoring style. While I would observe, critique, advise, suggest, and attempt to gently nudge my preservice teachers in the direction of the philosophies and central tenets of the program, I feel that the support and feedback I gave in those initial two years was too directive and overtly blatant. While I do feel that I was successful in leading many preservice teachers to more constructivist and developmental ways of teaching secondary mathematics, I was unwilling to let go of my directiveness and my own assumptions about effective teaching. Once I was able to reach the aforementioned critical point in my university teaching, I was able to grow in my university supervision by applying the same principles of problematization and interaction.

*Intersecting paths: teaching and supervision.*

While the contexts surrounding the two teaching positions were contrastingly different, the central tenets remained the same. I had begun to learn that the best way to supervise and to lead preservice teachers into their own professional development was not to give prescriptive directions for improvement and mandated formats for
their lesson plans and personal reflections. Rather, I shifted my supervisory practices in the direction of facilitation rather than the micromanagement of their field experiences. Since it has been my experience that preservice teachers overwhelmingly begin their field placement experiences with an honestly hierarchical and evaluative view of the supervisor-preservice teacher dyad, I was able to work earnestly to establish myself as a supporter, advocate, and cheerleader for their development in the second two years of my supervision work. The difference in the level and quality of interaction and the dynamic change I was able to witness in the establishment of preservice teachers’ student-centeredness was remarkable. As evidenced by the four separate cases presented within Chapters Four through Chapter Seven of this document, I knew in my heart that I had found a path that led to a more productive and meaningful way to produce reflective and deeper thinking and feeling secondary mathematics teachers.

*Creating the role of educational researcher.*

Finally, I will say that the most unfamiliar, and by far the most challenging, academic role that I have accepted in the past four years has been that of the educational researcher. While I admittingly came to the program with little to no expectations of conducting, or even leading, educational research, my path to this point has been a trial-by-fire. With my reluctant inclusion in a five-member research team that constructed, field-tested, and revised the summative competency packet
assessment instrument for math, science, and technology preservice teachers, and the further development of a cohesive system that included structured reflection prompts and goal-setting to support the progression of preservice teachers toward the stated competencies of the program, I have learned that the best way to develop my skills as an educational researcher is to engage in the act itself. At the time, I was much more comfortable with the collaborative nature of our work, performing the role of resident editor and wordsmith of the group. My growth fed off of the collective energy and discussions we were able to have as we created local and national proposals and presentations. Together we were able to attach meaning to our data collection and piece together a data-driven story of our work and submit our ideas for peer-review and possible publication.

In a sense, my work within the research team provided not only experience, but multiple layers of meaning and synergy as I began to realize the echoing refrain of possibilities when I engage in activities that force me to learn by doing. But, as the time for my own individual research work drew near, I actively retreated from the massive piles of data I had collected. I stared with dismay at seemingly insurmountable task of creating my research study. Yet, with great learning pains, and I might add the continuous and supportive encouragement of my partner throughout this four-year journey, I have been able to break the chains of my insecurities and stand on my own wobbly legs in the mire of my data. Slowly, piece by piece, and yes, even *Bird by Bird* (Lamott, 1994), individual reflections began to meld with classroom observations and discussions with my participants as their individual
teaching episodes and reflective writings became a rushing flow of meaning and understanding. Their personal stories and their reflective personal and professional development began to crystallize in my mind and gel in the words I used to describe them.

*The process of becoming.*

I think my own growth as an educational researcher parallels the reflective thoughts that Azeem was able to share in our final focus group as he reflected on his own growth that resulted from his field experience. When summarizing his growth over the course of the academic year that spanned three field experiences, Azeem openly shares that “I really needed to quit worrying about all of the things that could have gone wrong and what I wasn’t able to do. I needed to trust myself and the abilities that I was able to develop over the year” (Azeem, focus group transcript). Here, I feel Azeem is referring to his ability to relate more comfortably to the students in his honors classes, but his words contain a starling truth as I reflectively examine my own growth as an educational researcher. I needed to quit worrying about the mountain of data that I had collected. I had to trust my data and be confident in my own knowledge and developing understanding.

In the process of becoming, I, too, have had my own self-doubts toward the creation of my own research agenda, and the opaque shroud that encompasses traditional view of research did not easily co-exist with my inherent affinity for syntax, meaning, and language. I stand now on the precipice between the possible
extension of this project into a longitudinal study of their classroom practice as it is shaped and transfigured through their induction years and beyond, and the establishment of my own professorship and additional research possibilities as I begin to investigate the possibilities for positive change in the elementary mathematics education of children in my native Appalachia. I have grown to accept, and even come to like, the educational researcher growing within me. The blank page that once horrified me at the beginning of this project has now become a comforting friend whose space to write, develop, and create has led my fledgling voice to become more mature and voluminous.

Tales From the Path: The Conclusions and Implications of Research

Returning the focus of my narrative to the theoretical framework that shaped this study, my research questions that have framed the scope of this project, and the proposed model of preservice teacher reflective development created by the five-member research team, the intent of this study was to provide an in-depth examination of the uses of reflection within the supportive and interactive relationship between my role as university supervisor and my preservice teacher participants. Further, I have attempted to identify what I feel are critical features with the field experiences that shape the preservice teachers’ reflections as they progress through their teacher preparation program. Finally, I have attempted to explicate my contemporary thinking regarding the model in light of the shared experiences of this sequence of field experiences.
Reflection created opportunities for teacher growth.

As mentioned in the literature review for this study contained in Chapter Two, the current knowledge base focused on the use of reflection within preservice teacher preparation programs highlights its potential to increase the professional and personal development of the preservice teachers, and also the ability for reflection to provide a structural framework for the development of community between the university supervisor and preservice teachers. As evidenced by the data presentation and intertwined analysis presented in the development of each case, I fervently believe that reflection, as the five of us came to know and experience it, in the sharing of our weekly writings, small group discussions, and debrief sessions, has been a driving force in all three areas.

As explicated within the separate case studies of each participant, the path that each preservice teacher took on his or her journey through their three-tiered field experience was varied. With the complex issues surrounding the changes in placements and mentors each quarter, it was, at times, difficult for the preservice teachers to make quick adaptations to their developing understandings of schools, lessons, and students. Yet, in the same vein, across each of their varied and personal experiences, the troublesome issues of planning directed and coherent lessons, finding engaging ways to present their content, managing a classroom on their own, coping with mounds of homework papers, and building rapport with students who were less
than enthusiastic about mathematics created shared opportunities for writing, feedback, and reflection on their ever-evolving initial teacher beliefs.

With each weekly reflection that was submitted, I would spend many hours responding to the words they had written. As I wrote in a stream-of-consciousness style in a direct reaction to the verbal thoughts they would share with me, my feedback to them consisted of relating my own classroom experiences in similar situations, challenging the assertions that they made by presenting counterexamples to their thinking, and extending open-ended questions to them as I read the stories they shared. While I made it clear to them in the initial week of the project that my comments did not require an immediate written or audible response, I did emphasize the fact that my feedback was to serve as ‘think-abouts’ for them as they progressed through each field experience. In a sense, I feel that their thoughts combined with my feedback and questions to create something new – our collective reflective dialogue.

Reflection generated professional growth.

Through our delayed, dialectical exchanges, I searched for ways to weave together my observations, the issues brought up during our debriefings, and my classroom experience so that the preservice teachers grew to expect the same level of feedback and probing questions with each submission. Their experiences were not identical, but similar. I knew I could not resolve every situation or answer every question, but I was pleased with each participant as they grew to develop the process
of examining the questions that arose naturally out of their own practice and to arrive at reflective and possible solutions.

Even though I saw very little evidence of professional growth from the questions and feedback I gave to Charles throughout the majority of his field experiences, I was able to gain some evidence that he did actually read the response I provided to his written reflections. As noted in the focus group transcript, “I liked knowing that the reflections would be read, and that you would actually take the time to interject your own thoughts and push our thinking about what was going on in the classroom around us” (Charles, focus group transcript). While a direct cause and effect implication is totally unmerited by the structure of my qualitative analysis, I feel that the compounding frustration that Charles experienced as a direct result of his willful deferment of power during both the Winter and Spring Quarter Field Experiences combined with the increasing cognitive dissonance I was able to highlight and generate through my observation feedback and my responses to his attempts at reflection. I feel that these two forces pushed Charles to re-examine his own beliefs and the teacher he had become, but did not like.

Carrie, as evidence in Chapter Five, began her field experience with clear beliefs in student interaction and communication as building blocks for learning and understanding. She followed structured reflection prompts throughout the early stages of her field experiences. The reflections allowed her to solidify her own understanding of how her past experiences and coursework had shaped her current understandings and beliefs about teaching. Once she began to experience difficulties
in structuring group work effectively in Winter Quarter and to encounter disengaged and unmotivated students in her student teaching experience, her use of reflection became personal. As evidenced in her reflection excerpts, Carrie began to develop an externalization of the thought process in her head. She tailored her reflective writing style in the forms of self-questions to which she would provide her own thinking. In some instances, she would phrase her questions expecting feedback and further input from me. To this day, I feel that her efforts at Celestial High School would have been unsuccessful had we not had the opportunity to share our reflective thoughts about students, their culture, their interest, and the importance of demarcating the line between authoritarian and friend.

Azeem was arguably the most developed in terms of his own personal use of reflection. Similar to Carrie and Brett in his adherence to the structured reflection prompts of Autumn Quarter, he soon realized that his own thinking and his own future classroom needed his immediate attention. By reflectively considering his classroom successes and his not-so-successes, Azeem was able to place his learning on two fronts. He was able to productively develop his contemporary practice with middle school and high school students throughout Winter and Spring Quarter. Yet, he was also able to reflectively contemplate his own thoughts about processes and procedures that would work for him in his first-year classroom. Through our shared reflection, Azeem was able to reshape his thinking about his grading and homework policies before he even has his own students. By piecing together a working understanding of how his coursework and field experiences will manifest themselves.
within the confines of his future classroom, he was able to solidify his understanding of students and the processes of teaching and learning.

I feel that I did not need to provide as much feedback and guidance with Brett. Once he had experienced the close personal and professional friendship with his Winter Quarter mentor teacher, I knew Brett’s future classroom practice was secure. What I did do was provide support and assistance as he began to place structure around his group work activities and explore the nature of meaningful rapport with adolescents. Yet, as Brett encountered personality clashes with his Spring Quarter mentor, our reflections became a sounding board for his growing frustration with educational structures and classrooms that are focused on control and his search for ways to engage his students.

I would write knowing that you would answer. Sometimes I just put the question I had out there, and then you would answer back. If it was important enough, a couple of us were having the same question or problem, you would raise the same question in our small group (Brett, focus group transcript).

Thus, the interactive framework of reflection on the part of the novice and feedback from an expert to fuel further reflection and introspection was able to provide a fertile ground in which the preservice teachers could safely explore their developing professionalism as they grew to see themselves more as classroom teachers. However, I am not quite clear if I was always functioning in the role of expert as I still felt as a novice in coming to understand each of my participants. The separate cases presented clearly illustrate a wide-ranging level of reflective thought as
the preservice teachers gained more confidence in their abilities to teach and felt more empowered as they assumed a more central role in their students’ learning. The power of reflection to shape their teacher beliefs and as a forum to push their professional thinking was clearly evident.

*Reflection prompted personal growth.*

Also within the current knowledge base for the use of reflection within teacher education, the personal development of preservice teachers is supported and encouraged as they grow to learn more about teaching and themselves. Since the preservice teachers in the study were told very early in their field experiences that they could use their own classroom practice as a source of reflection rather than using a list of generic, structured reflection prompts given as suggestions by the program, the participants felt encouraged to include their personal thoughts toward topics of interest to them as they resolved their individual problems of practice. While evidence of their personal development was not readily evidenced until the later, more summative writings they submitted toward the end of their student teaching, three out of four of the participants readily admitted in their written and audible reflections that they had learned more about themselves as a result of their classroom practice and their subsequent interactions and reflections on their field experiences.

While I do believe that the level of personal development they were able to reach was directly proportional to the amount of personal control they were able to wield within their mentor teacher’s classroom, I feel that each participant was
eventually able to reach the point in their development in which they personally believed in their own abilities to teach and touch the lives of their students. Thus, the lessons that they were able to internalize from their university coursework and make public through their classroom practice were not only applicable to their professional selves, but also to their personal lives. In learning to teach, they had also become learners. In moving beyond the delivery of content, they were able to see the value in human relationships and interpersonal communication.

_Reflection helped to build our community._

Lastly, I strongly feel that the professional and personal development exhibited by each of the participants could not have even taken a foothold in their minds and our collective psyche without the establishment and maintenance of a supportive learning community. As typified by many traditional teacher preparation program models, the goals and objectives set forth by education faculty and colleges of education support the exposure of preservice teachers to as many different classrooms and teaching styles as possible. However, in an effort to give preservice teachers a wide view of diverse student populations in diverse educational environments, the overwhelming need for preservice teachers to make meaningful contacts and connections with other teaching professionals is often unrealized. That is, the efforts of the program to give wide-ranging experiences in schools are often counterproductive. Time that preservice teachers could spend interacting with their mentor teacher or engaging as an integral part of the placement school’s math faculty
is expended on superfluous tasks such as mandatory observations of less that proficient teachers or completing checklists of menial chores. These actions serve as a competing demand to preservice teachers’ attention and further complicate an already hectic schedule.

While this particular program follows a similar model to give the preservice teachers a wide-ranging, comprehensive field experience, the mentors, the schools, the students, and contexts for their learning were constantly changing with the passing of each academic quarter. Yet, our community of five initially established when the participants granted consent was never broken apart. They came to see me as a supporter, an advocate, a task-master when needed, and guidepost on their way toward their establishment as a classroom teacher. I, in turn, came to view them not only as students but as colleagues that I would readily hire if I were to build my own secondary mathematics department. Together we were able to talk, to laugh, to collectively think, to openly question in the presence of others, and to cry on occasion. The interpersonal relationships that we were able to forge as a result of our verbal and auditory reflections about teaching will not be forgotten and will hopefully be maintained into their induction years as I piece together a plan to revisit their individual classrooms as a means of tracing the long-term effects of the professional, personal, and community effects of reflection.
Responding to Research Question One

In continuing the implications of this research project, I return to the first research question.

What are the critical features of the field experiences for secondary mathematics preservice teachers that most significantly contribute to the development of reflective habits of mind that support a more mature and more integrated view of the work of teaching?

Through the course of this project, I have interpreted this question in many different ways, and it has gone through multiple revisions for clarity and function. My work and my data have supported an interpretation of this question that focuses on the context that is necessary to move the preservice teacher to examine the work of teaching differently. That is, what aspects of the field experience have most significantly contributed to the shifts in the content focus of their reflective contemporary thinking as the preservice teachers begin to develop a more mature and integrated view of the work of teaching.

At first, I believe that each of the preservice teachers in this study entered the program because they knew that they wanted to be math teachers. Whether they had previously experienced a successful math teacher who had endeared the subject to their heart, had a personal affinity for mathematical thinking, or perhaps, had experienced a math teacher in their past who made the subject incredibly dry and boring through a lecture-driven format, the preservice teachers had an overwhelming predisposition that they were all going to enter their first year teaching calculus and
advanced math to the most astute and respectful students in their school building. Yet, as their experiences with students in public schools and with mentors operating within those systems are brought to light against their previously unchallenged assumptions about teaching, their hopes of idealized situations, short work days, and the attractive hopes of summers free from work quickly fade.

As previously noted, the paths that each of the preservice teacher took toward the establishment of their own, developing classroom practice were as varied and separated as their personalities and personal field placement circumstances. Whereas three of the four preservice teachers were able to articulate and implement interactive lessons of their own creation that incorporated student thinking and collaborative group work, one of the four participants was unable to implement teaching strategies that worked for him, and, in some respects, floundered in his attempts to establish himself as a teacher by uncritically accepting the imposed structures and procedures implemented by his mentor teacher. Yet, as evidenced by the division of the preservice teachers into two distinct groups, some commonalities of the contributing factors that can lead to the establishment of an individualized teaching style congruent with the personal beliefs of the preservice teacher is suggested by the data collected and the cases of their reflective development I have constructed.

*The powerful influence of mentor teachers.*

First, I believe that the most critical feature of the field experience, other than the level of effort that is applied to the situation by the preservice teacher, is the
relationship formed between the mentor teacher and the preservice teacher. While some classroom teachers are truly effective in their classroom practice as evidenced by their students’ learning and retention, I have come to believe as a result of my supervisor experience and my work throughout this project, that all good math teachers do not make good mentor teachers.

As noticed by the personal and professional development exhibited and evidenced in the case studies of Carrie, Azeem, and Brett, each of these preservice teachers were under the direct tutelage of a mentor who was willing to relinquish control of his or her classroom to allow the preservice teacher full control and independence to teach in ways that were meaningful to them. Carrie was encouraged by her Winter Quarter middle school students’ ability to work together in the act of problem-solving as she shaped her preservice understanding of how students best learn. Azeem knew that his classroom rearrangement efforts would be supported and encouraged in the establishment of his classroom practice independent of his Autumn and Spring Quarter mentor. I feel that Brett could not have progressed as rapidly as he did without the demonstrative relationship with his Winter Quarter mentor.

The mentor teachers, especially those used in Winter Quarter, that were paired with these three preservice teachers were willing to provide supportive assistance in the formation and guidance of lesson structure, content flow and cohesiveness, the implementation of technology, and effective ways to establish and maintain student rapport. The mentor teachers in these dyads were willing to leave their classroom, sometimes being gone from the immediate view of their students for a week at a time,
in order to allow the preservice teacher to establish a classroom presence and wrestle with their individual questions and problems of practice.

By contrast, Charles’s mentor teacher, especially in Winter Quarter, did not leave the room during his field experience. Whether this was a conscious choice on behalf of the mentor remains unclear, but he was not afforded the opportunity to experience a problematic classroom independently. Since his classroom practice was never allowed to reach a critical point of action, the empowerment and reflective thought that could develop as a result of the situation never occurs. The preservice teacher then becomes adept at ignoring problems of practice or uncritically waiting for them to be resolved by others. As a result, Charles felt obligated to mimic the classroom practice and management of the classroom in ways that would appear acceptable to his mentor teacher rather than in ways that were personally meaningful for him. Thus, the preservice teachers with a willing mentor comfortable in relinquishing control of his or her classroom and supportive in the growing independence of the preservice teachers were able to more fully understand the inherently problematic nature of teaching.

*The importance of honest and integrity in feedback.*

I feel a second contributing factor to the development of a preservice teachers’ productive classroom practice is the feedback that they receive from the university supervisor. This feedback is not limited in any certain form or any certain medium as evidenced through the collective weekly reflections we shared, the form of lesson
observations, or the form of conversation between two or more teaching professionals. While the feedback does not have to be overwhelmingly positive, I feel it does have to be done with integrity and honesty.

It has been my personal experience that the relationship between university supervisor and preservice teacher is fragile. Generally speaking, university supervisors can present themselves as demanding, controlling, and driven in the adherence to strict guidelines and standards issued by the department, college, and state regulatory commissions. But, what preservice teachers need most from his or her university supervisor is a willingness to relate our own honest thoughts about what happens in their classrooms and our insights into what is happening in education, in general. I feel that this can be evidenced by the honest vocalizations of inconsistencies within the program in terms of placements, by directly presenting the distracted actions of Charles’ students as he tapped on the overhead projector, or by pressing Azeem to re-examine why he chose to place students in groups but continued to lecture about linear inequalities.

Also, preservice teachers need to hear, in verbal and written forms, the stories of our own journeys and developing classroom practice. I feel that I was able to share my experiences and insights by sharing technology-based lesson plans with Brett and Azeem, and working with Carrie after school to bolster her classroom presence with voice inflection and stern eye contact. In relating our stories and even our own remaining questions about teaching and learning, they come to know that they are not alone – that we have been there before. By sharing what we did, how we solved a
problem with a troublesome student, and how we have grown into our own teacherhood over a course of years instead of days or weeks, we earn their trust and respect. Just as they have to earn the trust, respect, and rapport of their students within the Winter Quarter and Spring Quarter field experiences, so they also need to see the university supervisor as a supportive ally when we come to observe and give feedback.

*Personal freedom to explore their own thinking.*

Also, in terms of that same feedback, I have learned through this particular research project that supervising is not telling – just as teaching is not telling. I feel that this spotlights a third critical feature of field experiences for secondary mathematics preservice teachers. They need to be given the academic latitude and personal freedom to explore their own thinking, try out lesson ideas, encouraged to collaborate, and yes, even be allowed to fail. At times, I feel my work as a university supervisor could have been made much easier by giving Carrie and Brett scripted lesson plans that included open-ended, thought-provoking questions. I could have saved many hours of frustration and self-doubt with Charles by saying, “You have already tried this pedagogy many times with dismal results, why are you not trying to change something?” However, such directive measures on my part would have trivialized the constructivist learning process that I was trying so hard to instill within them.
If I am wanting to establish a mindset within each of the preservice teachers I supervise, then I have to be willing to acknowledge that each of them are going to grow into their own classroom practice in their own time. I cannot impose my own structure upon their development, it must come from within. However, I can play the role of devil’s advocate and insert divisive, probing questions into their observations or their written reflections as a means to steer their contemporary thinking in different directions, as evidenced by leading Azeem to reflectively consider the difference between teaching for understanding and covering a list of prescribed topics. I feel it eventually becomes the personal responsibility of the preservice teachers to address the questions that peers can present to challenge their thinking in light of their current classroom actions.

The quality of the Winter Quarter field experience.

Finally, the fourth critical feature that I feel has a direct impact on the moving the preservice teacher’s thinking toward the more problematic view of teaching is the quality of the Winter Quarter field experience. Poised in between the periphery role that they exhibit as participant-observer in the Autumn Quarter field experience and full-blown student teaching in the Spring Quarter, the Winter Quarter field experience marks a critical stage in their preservice teacher development. This is the field experience in which they become fully engaged in the design, planning, implementation and assessment of their own lessons. With only one class to worry about, the level of interaction and independence that they are able to demonstrate has
a direct bearing on their classroom practice during student teaching. For example as noted by the classroom practice of Carrie, Azeem, and Brett, if a preservice teacher is allowed the freedom to implement and refine their own teaching style within their Winter Quarter experience, the preservice teacher is more apt to solidify this style and rely on similar styles of implementation in the following field experiences. This allows the preservice teacher to gain confidence in front of a classroom and also to secure a clearer picture of how non-traditional forms of mathematics instruction can look and sound. In addition, with the nuts and bolts issues of objective writing and lesson plan structure resolved, the preservice teachers may begin to focus on the larger issues of their teaching as evidenced by the Spring Quarter stories presented throughout the latter sections of these case studies, and to focus on the development of a more full understanding of the symbiotic relationship between teaching and learning.

Responding to Research Question Two

Moving to the second line of this inquiry, I now shift attention to the second research question.

*What are the critical features within the field experiences of secondary mathematics preservice teachers that encourage a deeper, reflective examination about their developing classroom practice?*

While this question has also gone through several iterations and interpretations over the course of this project, I currently have shaped my understanding of the focus of
this question to address the level at which preservice teachers reflect. Referring to the
cyclic processes of reporting, reviewing, and rethinking that were presented within
the reflective development model within the theoretical framework that shaped this
study, I have come to consider this issue to be the circumstances that move the
preservice teachers to do more rethinking rather than continuing with surface
reporting statements.

They need to experience cognitive dissonance.

While no qualitative research project is designed or even allowable to make
direct causal implications, I do feel that the crux of this issue lies with the level of
cognitive dissonance the preservice teachers are able to experience and articulate as
they interact with the students and the mentors they encounter along the path of their
field experiences. As noted within the theoretical framework and literature review
that have shaped this research project, I once again return to the thoughts and beliefs
presented by John Dewey nearly a century ago.

In the progression of their field experiences, preservice teachers do have a
cognitive choice to make. They could, on one hand as evidenced by Charles’s
journey, acknowledge and accept that their teaching follows the lead of their mentor
teacher in a willingness to maintain the status quo or to maintain a certain level of
classroom control. As Dewey asserts, if their field experiences remain unproblematic,
if their mentor teacher steps in to discipline for them, if the mentor hands the
preservice teacher a stack of worksheets and says, ‘Here, use these,’ if they never
have the opportunity to question their own actions, then there is no real need for learning to occur. While these strategies do not ultimately lead to the establishment of a teaching style congruent with personal beliefs, the mirrored practices can lead to a smoother classroom teaching experience that is perceived as being easier or less work for the classroom teacher.

On the other hand, the preservice teacher could, at any time, make the cognitive choice within their classroom practice to develop a teaching style in varying degrees of independence from that used by their mentor teacher. This could be evidenced by the field experience and reflection of the other three participants in the study. In each of these cases, each preservice teacher purposefully and systematically was allowed to put their own developing beliefs to test within their mentor teachers’ classrooms. They were able to splice together a vision of what they wanted their math classroom to look and sound like with an action plan to make their classroom conceptualization a reality.

As a result, Carrie, Azeem, and Brett experienced some degrees of success within both their Winter and Spring Quarter field experience, but most importantly, they experienced some lesser degrees of success when students could not understand the directions to their activities, when students decided to test the authoritative nature of the preservice teachers, or when any part of their well-conceived and well-planned lesson would not fall into place. It is from these experiences that we, as Azeem so eloquently states, “grow to learn what works for me and what doesn’t” (Azeem, Post-study questionnaire, item #15).
Again, as Dewey (1933) asserts, reflective teaching begins when teachers experience difficulty that cannot be easily resolved. I propose that reflective teaching continues when university supervisors, university faculty, and mentor teachers, continue to question and push preservice teacher to think critically about their own practice. As long as classroom activities and processes run smoothly, there is no true call for learning and reflection. It is the difficulty in achieving a goal or objective that stimulates learning.

Responding to Research Question Three

As a final focus to this study, and to bring closure to this chapter, the third research question related to the applicability of the reflective development model. As stated previously in the introduction: To what extent does the proposed model of preservice teacher development trace the reflective growth over the course of their field experiences? While this particular reflective model of preservice teacher development grew out of the work the five-member research team had conducted in response to the systematic changes made in the summative field experience assessment competency packet and accompanying support documents, I have begun to reflectively question its effectiveness.

The frustration of fitting data to a model.

In the initial stages of data collection and my preliminary, and remarkably unsuccessful, attempts to place a coding structure around my data, I found myself
obsessively and prematurely trying to reduce the reflective writings and conversations I would have with my preservice teachers to a particular cycle and level within the model. Many times after conducting a lesson observation and engaging in the subsequent debriefing session with the preservice teacher, I would walk away with my fieldnotes and audiotape. In the back of my mind, I would almost immediately ask myself which cycle and level within the model most closely matches what I heard, what I saw, and what I felt as the university supervisor and then again reinterpreting the same data as an educational researcher.

After I had completed three observations with each participant, I began to track the cycle and levels I had assigned to the data with a clandestine and unconscious hope that my tracking would follow the linear increase the team had so eloquently described in our national research presentation debut. But, after my I personally reflected and acknowledged that my data tracking and hypothesizing were not falling into agreement with the prescribed model, and with the constant echoing question “What were we thinking?” circling daily in my head, I knew my thinking and my proposed tool for data analysis had to change course.

After weeks, possibly even a month, of brooding and avoiding my data, I reflectively and personally arrived face-first into one of the main tenets of qualitative research. I was putting a preconceived structure on an inherently human and highly personal act – the reflective development of secondary mathematics teachers. After further reflection, and a healthy dose of encouragement from my dissertation adviser who simply suggested that I trust the mountain of data before me, I was able to tune
into the individual voices of my participants, and then relate their story as I saw it develop.

*Teaching is not so linear.*

I still believe that preservice teachers come to the defining moment of breaking Cycle One, that “there is more to the work of teaching than I had originally thought,” relatively early in their Autumn Quarter field experience. I also now truly believe that the linearity of the model may be too simplistic. While the flow out of one cycle and into a subsequent cycle makes for an aesthetically pleasing design, the constant fluctuation between preservice teachers’ existence in Cycles Two and Three was dizzying when I attempted to track the oscillation. While I would be encouraged that Carrie was on the verge of reaching the *a-ha* moment to break Cycle Two in one reflection, I would be dismayed at her perceived regression in the next day’s scheduled observation and debriefing. Granted that I do still believe that there is some kernel of truth in the structure of placing Cycle Two before Cycle Three; that is, that the preservice teachers must come to a personal understanding that they have to manage the classroom and their daily lessons in ways that are meaningful to them before they can address the learning needs of individual students, which is the benchmark for Cycle Three.

In short, this project has led me to believe that the model is too linear, and that it is nearly impossible to map the jumps that the preservice teachers demonstrate between Cycles Two and Three. Also, as a result of this project, I now much more
fervently believe that the reflective development of secondary mathematics preservice teachers is dependent and interdependent on the field placements to which they are assigned, the mentor teachers they work with, and the students they engage in the act of learning for understanding. Their growth is not about the model I helped to create, but about how I can assist, and even problematize their professional and personal development.

Some truth in the phases of the model.

On an ancillary note, however, I do think that the sequential levels of report, review, and rethink contained within each separate cycle could have further meaning within the contexts of this study. In each of the preservice teachers’ reflections, most notably in their written submissions, and again primarily in the three participants who were in more personal control of their preservice teacher development, a pattern could be discerned that predominantly followed this path. What would start out as a simple description or retelling of events central to the isolated reflection they were constructing would usually be followed by a statement of personal belief, or review, toward their observations. With enough iterations between the report and review, Carrie, Azeem, and Brett were each able to rethink some of their initial ideas and beliefs about teaching and learning. Charles was eventually able to reach his own personally profound rethinking moment after almost three entire quarters of field experiences and classroom interactions, and he eventually did acknowledge the
dissonance that existed between his actions within the classroom and his personal beliefs.

But, further, I feel that the progressive levels of reflection could be extended to include a fourth level – debriefing. As noted in feedback that I received in presenting my research proposal and preliminary findings to future employers, I was asked disconcerting questions about which level of the reflection model encourages the preservice teacher to take action, to change their practice as evidence of their learning about teaching. I feel that the fourth level of debriefing pushes the preservice teacher toward this direction without being blatant or overly manipulative on the part of the university supervisor.

In adding the fourth level to the preexisting levels of report, review, and rethink, I also feel the levels of reflection implicitly conveys to the preservice teacher the expectation that they need to talk and share their developing teacher thinking with others. For it not just what we think we know, but what we are able to openly share with others that more accurately describes and depicts our contemporary teacher thinking and moves us closer to the act of changing our classroom practice in ways that are more consistent with our beliefs. However, this is a possibility for further research.

The End Becomes a Beginning

In conclusion, as much as any qualitative study can draw any definitive conclusion, this project represents not only the professional and personal
development of the participants who were so willing and eager to share the stories their field experiences with me, but also the personal and professional culmination of four years of doctoral work. While I initially pictured and framed my dissertation with the unrealistic expectations of reaching earth-shattering conclusions and definitive findings. I now realize that after the first steps of individual research and writing comes the additional steps or further research, further reflection, and more writing. While I feel I have been able to exercise my current understanding of the process involved in educational research, I have also pushed and expanded my thinking about the development of secondary mathematics preservice teachers, the effective uses of written and audible reflections, and the establishment of supportive and interactive communities that use reflection as a means for growth. In as much as this project represents a conclusion, it is also a beginning for the questions raised within these pages and processes have only led to more questions, and the cycle of reflection begins anew with a relocation and re-establishment in other contexts.
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APPENDICIES

• A: Pre-study Questionnaire
• B: Post-study Questionnaire
• C: Two Sample Reflection Prompts
• D: Pre-Observation Interview Protocol
• E: Post-Observation Interview Protocol
• F: Two Sample Items from Competency Packet Rubric
• G: Focus Group Questions
APPENDIX A

PRE-STUDY QUESTIONNAIRE
Pre-study Questionnaire

1. Why do you want to teach?

2. Have you ever been a teacher or a tutor? If yes, please describe the experience.

3. Think about a memorable teacher you have had. Why does this particular teacher stand out in your mind?

4. What things do you feel a teacher should know? That is, if you were to design a test for teachers, what types of information should that exam test for?

5. How would you define “good teaching”? 

6. How would you define “good learning”? 

7. What is the relationship between teaching and learning?

8. What is the role of a teacher?

9. What do you consider a successful lesson and what do you feel are the components of a successful lesson? Why?

10. What does a teacher need to think about before starting a lesson?

11. Complete the following metaphor (or analogy), teaching is (like)…

12. Describe a situation from the past calendar year in which you feel you have been reflective.
APPENDIX B

POST-STUDY QUESTIONNAIRE
Post-study Questionnaire

1. Why do you want to teach?

2. What things do you feel a teacher should know? That is, if you were to design a test for teachers, what types of information should that exam test for?

3. How would you define “good teaching”?

4. How would you define “good learning”?

5. What is the relationship between teaching and learning?

6. What is the role of a teacher?

7. What do you consider a successful lesson and what do you feel are the components of a successful lesson? Why?

8. What does a teacher need to think about before starting a lesson?

Please answer the following questions based on your teaching experiences during the winter and spring quarters of this past academic year:

9. Describe your most successful lesson.

10. Describe your least successful lesson

11. What, if any, were some unanticipated learning outcomes resulting from the lessons that you taught during these two quarters.

12. What do you feel you have learned about learners?

13. Could you provide an example of one of the biggest concerns that arose from your past two field experiences?

14. What, if anything, would you like to change about the field experiences?

15. What do you feel you have learned through your field experiences?

16. Complete the following metaphor (or analogy), teaching is (like)…
17. Which aspects of the program do you feel encouraged your growth as a professional teacher?
APPENDIX C

TWO SAMPLE REFLECTION PROMPTS
Two Sample Reflection Prompts

Topic – Inappropriate Student Behavior and Causes (Winter Quarter Prompt 2006)

**Observation**: Identify a particular student within one of your mentor teacher’s classes who you feel consistently acts inappropriately within the classroom environment. As a form of prewriting, make a two-column chart on a sheet of paper. On one side list the inappropriate words or actions made by the student. In the second column, list the strategies your mentor teacher used to control or modify the student’s behavior. In addition, you will want to notice positive behaviors exhibited by this particular student as a means of contrast. (This may be the class you are teaching or a class in which you are a participant observer).

**Reflection Response**: After discussing this student, your list, and your observations with your mentor teacher, shares some of your observations and reactions. Consider the actions your mentor teacher took and state whether or not you agree with the way the situation was handled. Did your mentor respond in accordance with the classroom and school standards of behavior? Do you feel there would have been a more appropriate way to handle the situation? What would you have done differently? Most importantly, be sure to examine what you feel is the root cause of this particular student’s inappropriate behavior. What particular clues become evident when you examine this student’s personal history?

Topic – Building effective rapport (from Spring Quarter Prompts 2006)

**Observation-in-Action**: Establishing rapport with students occurs in a wide variety of ways. As you are getting used to your new school, your new mentor teacher, and your new students, think of ways that you could seek out opportunities to engage students in conversations outside of the classroom. Think of three different ways that you will go about initiating rapport with the new students. Be sure to consider knowing pertinent background information before you approach these students.

**Reflection Topic**: What information do you need to gather before you decide how to engage a student in conversation that may be outside your content area? How do you go about gathering that information, and from which sources are you gathering it? Describe one instance in which you approached a student this week to establish rapport. How did this particular encounter lead to a better understanding of the students in your classes this quarter?
APPENDIX D

PRE-OBSERVATION INTERVIEW PROTOCOL
Pre-Observation Interview Protocol

1. What would you like to tell me about the lesson you are going to be teaching today?

2. What are your learning objectives for the students today? Why did you choose the objectives?

3. What prior knowledge do you feel the students will need to be successful in today’s lesson?

4. What are your teaching strategies for today’s lesson? Why do you feel that these methods are appropriate for your lesson objectives?

5. How do you plan to assess your students throughout today’s lesson? How will you assess their learning at the end of the lesson?

6. How do you see this particular lesson fitting into the big picture, or overall structure of secondary mathematics?
APPENDIX E

POST-OBSERVATION INTERVIEW PROTOCOL
Post-observation Interview Protocol

1. What did you like best about today’s lesson? How do you know?

2. If you had this class period to re-do again, what aspects of today’s lesson would you have changed? Why?

3. What different learning outcomes would you project as a result of these changes?

4. Did the students reach your learning goals and objectives? Why or why not?

5. Based on what happened in your classroom today, what do you plan to do next with this class?

6. What would you like to tell me about the students who seemed to be doing well with the instructional tasks?

7. What would you like to tell me about the students who were experiencing some difficulty processing the information or difficulty with the instructional tasks?

8. (If using cooperative learning groups in the lesson) Why did you put the students in groups today?

9. What was your criteria for putting these groups together as you have

   OR

   What was your rationale for letting the students self-select the groups they were in during the lesson?
APPENDIX F

TWO SAMPLE COMPETENCY PACKET RUBRIC ITEMS
### Two Sample Competency Packet Rubric Items

#### Curriculum and Instruction, Item Number 6:

<table>
<thead>
<tr>
<th>C&amp;I 6. Paces lessons appropriately for students.</th>
<th>Rarely is the amount of time spent on activities appropriate for the given content and to the students; digressions do NOT serve a clear educational purpose</th>
<th>The amount of time spent on activities is occasionally appropriate; when digressions from the lesson occur, there is no clear educational purpose</th>
<th>The amount of time spent on activities is usually appropriate; digressions from the lesson occasionally serve a clear educational purpose</th>
<th>The amount of time spent on activities is appropriate for the given content and to the students; digressions serve a clear educational purpose</th>
</tr>
</thead>
</table>

**Evidence/Comments:**

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#### Classroom Social Context and Environment, Item Number 1:

<table>
<thead>
<tr>
<th>CSC&amp;E 1. Builds and maintains appropriate rapport with students.</th>
<th>Does not interact with students or makes inappropriate efforts</th>
<th>Interacts with students but maintains a distance and does not get to know the students, or has not established a respectful rapport</th>
<th>Establishes appropriate rapport with students that maintains a professional balance between authoritarian demeanor and friendship</th>
<th>Establishes appropriate rapport with students in and out of class and uses that rapport to benefit students’ school and life experiences</th>
</tr>
</thead>
</table>

**Evidence/Comments:**
APPENDIX G

FOCUS GROUP INTERVIEW PROTOCOL
Focus Group Interview Protocol

1. Thinking about your field experiences within the program, how would you describe your current disposition toward the work of teaching and learning?

2. In what ways do you feel you have been reflective about your field placement classroom experiences and your teaching?

3. As a result of your field experiences, describe a specific instance(s) in which you have been reflective or specific instance(s) in which your teacher thinking was changed in some way.

4. What do you feel are critical features of an “effective” secondary mathematics teacher?

5. What do you feel are critical features of an “effective” secondary mathematics classroom?

6. Comment on how you used the assignment of weekly written reflections as part of your teacher preparation program.

7. Comment on how you used the assignment of participating in weekly small group discussions as part of your teacher preparation program.

8. Comment on how you used the assignments of compiling your competency packet evidence and self-assessing your classroom practice on the competency packet as part of your teacher preparation program.

9. To what extent did the feedback you received on these assignments from your university supervisor affect your classroom practice or your thinking about the work of teaching?

10. Comment on how deeply you thought about your classroom practice or how you thought about the work of teaching as you progressed through your field experiences this year.

11. Consider two or three changes that occurred in your classroom practice or changes that occurred in your thinking about teaching during your field experiences, describe the circumstances that led you to act on making these changes.

12. Take a few moments to think about your secondary mathematics classroom next year. On the sheet of paper I will give you, please write at least one page
to describe what your classroom will look like, what you will be doing in your classroom, and what your students will be doing in your classroom.