The Role of Administrators in Supporting Questioning for Understanding

A thesis presented by

Gail M. Van Buren

to

the Graduate School of Education

In partial fulfillment of the requirements for the degree of

Doctor of Education

College of Professional Studies
Northeastern University
Boston, Massachusetts

June 2016
Abstract

Questioning for understanding is a version of formative assessment that involves frequent, diagnostic questioning and teacher-student dialogue. The use of diagnostic questioning techniques by teachers in the classroom has been shown to help promote student understanding and mastery of content. However, this form of assessment is frequently overlooked or underutilized in classrooms. Instructional leaders and school administrators have a responsibility to support their classroom teachers by providing constructive feedback buttressed with the supports necessary to improve instruction. If we could better understand what administrators need to support their teachers in mastering diagnostic questioning, we might be able to help more students succeed. Therefore, this Interpretive Phenomenological Analysis (IPA) study sought to understand the lived experiences of school administrators with diagnostic questioning and how administrators can best provide feedback and supports to teachers towards the end of supporting student success. Primarily using the theoretical framework of Vygotsky, this study sought to answer the following research question: What are the lived experiences of school administrators who regularly provide feedback and support to teachers in the regular use of diagnostic formative assessments in their classrooms? The results from this study revealed the need for all educators to better understand and utilize data, the absence of adequate time and resources for administrators to coach and support data-driven instruction, and finally, a requisite for focused, sustained professional development and pre-service training for all educators.

**Key words:** formative assessment, differentiated instruction, data-driven instruction, diagnostic questioning, Professional Learning Communities (PLC)
Acknowledgments

Numerous individuals supported and prodded me along this seemingly endless journey. The most unrelenting was my husband Jim, who would not let me give up! I thank you from the depth of my heart and soul. You have been my guiding light, dear partner.

My dear children Maria, Alex, Peter, my son-in-law Stephen, and my many relatives and friends have been so understanding and supportive of the time I have spent on this thesis and not with them. I thank you all for your patience and understanding!

So important to this study and also my life in education have been the many “unsung heroes” that I have worked with—school administrators. The honest, helpful administrators that who informed this research were critical to this professional challenge, and to all of the other administrators I have come to know, befriend, and rely upon for sound advice and support – I thank you deeply.

Lastly, I thank all the wonderful folks at Northeastern University who edited, advised, and stayed with me all these years, in particular Dr. Kelly Conn, my thesis advisor; Dr. Sara Ewell, my second reader; Dr. Carol Young, who participated in my oral defense; and Dr. Ruth Joseph, my third reader. Your encouragement and advice was intellectually challenging but supportive and so very much appreciated. Thank you!
# Table of Contents

Chapter 1: Introduction...........................................................................................................7

  Significance of Research Problem..................................................................................10
  Positionality Statement ...............................................................................................12
  Research Central Question.........................................................................................16
  Theoretical Framework...............................................................................................16

Chapter 2: Literature Review..............................................................................................23

  Introduction..................................................................................................................23
  Foundational Research...............................................................................................24
  Teacher as Diagnostician...........................................................................................29
  Administrative Support...............................................................................................38

Chapter 3: Research Design..............................................................................................46

  Introduction..................................................................................................................46
  Purpose Statement.......................................................................................................46
  Qualitative Research Design......................................................................................46
  Research Tradition.......................................................................................................48
  Paradigm......................................................................................................................48
  Interpretative Phenomenology Analysis Research (IPA) ..............................................49
  Participants...................................................................................................................51
    Sample Size................................................................................................................52
    Recruitment and Access............................................................................................53
    Ethical Considerations and Protection of Human Species........................................53
References .......................................................................................................................................................... 100

Appendix .......................................................................................................................................................... 104

   Appendix A – Recruitment Letter .................................................................................................................. 110

   Appendix B – Interview Questions .................................................................................................................. 112

   Appendix C – Research Map ......................................................................................................................... 113

   Appendix D – Informed Consent Document ................................................................................................... 115

   Appendix E – Participants ............................................................................................................................ 119
Chapter One: Introduction

A student remains quiet, certain he is the only one not comprehending the objectives of the newly introduced curriculum. Head lowered, he ducks the teacher’s general call for questions. The teacher asks for a thumbs up, thumbs down and with a small majority of the classroom responding affirmatively, the teacher moves on. Proceeding onto the next section of new material, this child (and possibly others) is left behind in learning.

In many classrooms students do raise clarifying questions, providing teachers with valuable data for them to probe students for information that would reveal any remaining confusions and misunderstandings so that teachers could incorporate corrective or additional instruction into their lesson. For a variety of reasons, students do not always have the courage or opportunity to explain their thinking and processing of the material, correct or incorrect. This leaves the teacher without important diagnostic information to “treat” their students (Black & Wiliam, 2010; Li & Li, 2008; Ruiz-Primo, 2011)

Well informed diagnostic physicians are those who take time to listen carefully to their patients’ symptoms (Baum, 1994; Oldham, 2006), patterns of pain, and physical rhythms before subjecting the patient to possible invasive procedures and prescription medication. Correspondingly, reliable, valuable data can be obtained from questioning students if done with precision and close listening skills by our instructional classroom experts. This informally collected diagnostic information can lead to targeted instruction to fill gaps in knowledge, and to correct confusions and misconceptions before our “patients”—our students, are subject to more formal district or state standardized testing (Li & Li, 2008; Ruiz-Primo, 2011). Waiting until the data from annual test results arrive is already too late for our students. School leadership has a
responsibility to support all teachers in mastering their curriculum and improving pedagogy (Stewart & Houchens, 2014; Webber, Scott, Aitken, Lupart & Scott, 2013).

Questioning for understanding is a component of formative assessment that involves frequent, diagnostic questioning and teacher-student dialogue that is “thoughtful, reflective, [and] focused to evoke and explore understanding” (Black & Wiliam, 1998, p. 144). The use of diagnostic questioning techniques by teachers in the classroom has been shown to help promote student understanding and mastery of content (Black & Wiliam, 1998). School administrators have the responsibility to support the educators they supervise by providing constructive feedback and the necessary supports to help teachers improve instruction (Stiggins, 2002). The use of diagnostic questioning by classroom teachers has been shown to help promote student learning, unearth confusions and misconceptions, and allow teachers to correct and reteach students for mastery of the curriculum (Black & Wiliam, 2010; Heritage, 2007; Li & Li, 2008; Ruiz-Primo, 2011). If we could better understand how administrators support the instructional practices of their classroom teachers with regards to diagnostic questioning techniques and targeted interventions, we may be able to assist them in enhancing student success. Research supports a shift from teaching data to learning data. Educational leaders need to focus on “evidence of student learning” and spend “more time working collaboratively with teams in examining evidence of student learning and strategies for improving on those results” (DuFour & Marzano, 2009, p. 68).

Teaching as a response to student thinking, student lack of understanding, and student misconceptions, remains a significant gap in the classroom (Black & Wiliam, 2001; Li & Li, 2008; Wiliam, 2008). Successful questioning techniques need to be developed in classrooms by teachers in order to fully understand student’ misunderstandings for the purpose of re-teaching
(Heritage, 2007; Li & Li, 2008). Filling this instructional gap alone could improve learning for all students (Black & Wiliam, 1998). In order to replicate this process there first needs to be an administrative shift in focus from pure instruction to student learning, growth, and achievement for all students in the classroom (DuFour, 2002). If we could better understand how administrators support the instructional practices of their classroom teachers with regard to diagnostic questioning techniques and with targeted interventions, we may be able to suggest ways to assist them in enhancing student learning.

With the new teacher evaluation system in Massachusetts and the prevalence of classroom observations, there should be an abundance of empirical evidence indicating whether or not skilled formative assessment and in particular, diagnostic questioning, is regularly observed in classrooms, used to inform instruction, improve learning, and is being supported by administrators. School administrators have the responsibility to support the educators they supervise by providing both constructive feedback and the supports necessary to improve instruction and learning (Stiggins & Duke, 2008; Webber et al., 2013).

State and local assessment of students, classrooms, schools, and districts all demand the elimination of the significant performance gap between high needs students and high performing students (Massachusetts Department of Elementary and Secondary Education [MA DESE], 2012). Besides test results, data on the learning growth of individual students, as well as the impact the teacher is having on their students’ growth is now being collected and used in evaluating teachers, schools, and districts (MA DESE, 2012). It is important that time is spent wisely on targeted curriculum and focused instruction rather than re-teaching previously learned concepts or superficially covering concepts.
Successful formative assessment such as questioning for understanding is a valuable tool to improve student performance (Black & Wiliam, 1998; Li & Li, 2008). Techniques that generate on-going, informal student data that in turn support targeted instruction is worthy of further replication and support by administrators. Developing an understanding of how administrators support teacher growth in formative assessment will provide data to inform providers of professional development. This study may also assist local districts and institutions of higher learning that are tasked with planning programs and training for pre-service teachers who, in turn, are tasked with improving student growth and learning.

**Significance of Research Problem**

Most physicians are expert diagnosticians who use a repertoire of inquiries to diagnosis illnesses and injury. So should our teachers have the support, training, and capability to utilize rich data from targeted questioning to improve and personalize instruction, inform their own instructional planning and promote student’ success.

Beside the philosophical and personal objectives of supporting all students regardless of their abilities, considerable sanctions can be placed on a school or district if it does not reach the goals set by the state. Schools that fall short of targets can be placed in “Corrective Action” by MA DESE (2012). Several years of non-performance may result in a state restructuring of schools, including removal of the principal and teachers. Personally and professionally, such action would be devastating to all stakeholders. Administrators, in particular, are most vulnerable.

At the district and building administrative level, state assessment data is used to check for large gaps or overlaps in the curriculum. Early in the school year, the administration receives these assessment results. These results are compared with existing curriculum guides to ascertain
that all areas have been taught in the year’s coursework. Although these results are shared with teachers, little time is spent to disaggregate and utilize this data to investigate their individual students’ confusions and misunderstandings or to identify instructional weaknesses in the course. In fact, those students have largely moved on to the next grade or subject level. It is too late to address an individual student’s mistakes (Reeves, 2009). With a new classroom of learners arriving, and with the exception of some minor re-arrangement or change to the program of study, teachers often revert to the more traditional model of covering the curriculum at a familiar instructional pace and format that assists them in reaching all the curricular targets (Smith 2011).

To date, many schools or entire districts have undertaken a number of academic, social, or behavioral innovations often involving district-wide training. Significant resources have been spent on professional development for initiatives such as formal data analysis, positive behavioral programs, and differentiated instruction. The recent two-year study by The New Teacher Project (TNTP) (2015) researched the merits of today’s professional development and concluded that many districts may be coming up short in providing what teachers really need for professional growth. Although considerable time and money was dedicated to teacher learning in their study, they found little change or improvement. In fact, when there was positive change, they could not tie that to the professional development.

The appropriate use of informal data, coupled with skilled instructional practices, could make a significant difference in improving the learning potential and achievement of all students—especially within the high needs population (Black & Wiliam, 2001). Habitual analysis of data, both from formal and informal classroom assessments, together with targeted teaching in areas of student confusion and misunderstanding, might be the single most beneficial remedy for all students and especially so for struggling students. Also referred to as “assessment
for learning” Leahy, Lyon, Thompson, and Wiliam (2005) report that classroom questioning necessitates “adjusting teaching as needed while the learning is still taking place” (p. 19).

Bambrick-Santoyo (2007) described the success that teachers have had with targeted data assessment. The author compares this data collection to that of a good swimming coach. In order to improve his/her athlete’s performance, the coach needs to carefully observe the action, not just see the final time. After watching the competition, the coach realizes the swimmer needs to get a faster start—to get off the block faster—not just swim faster (p. 45). The coach works specifically on assisting the athlete to react faster to the starting signal. If the coach was reliant on just the final assessment, the time, he/she would not focus on the correct area in need of improvement. So too can our teachers benefit from administrative support to capitalize on the rich data sources in the classroom. With administrative coaching on informal assessment, teachers might better maximize instructional time to improve student learning.

**Positionality Statement**

My interest in the topic of supporting classroom questioning began when I first assumed an administrative position over 15 years ago. Leaving the isolation of my classroom I realized that, for numerous reasons, the lack of deep questioning for understanding in classrooms and the subsequent lack of use of data for prescriptive re-teaching was not systemic. Not all students were learning at the same time and rate and some appeared to be falling behind if they did not understand the curriculum either immediately or with the majority of the class. From my perspective, I observed student confusion that was attributable to the speed of the lesson, lack of time, or absence of classroom questioning for understanding. As a primary evaluator of teachers, this was a difficult issue to address with the already stressed classroom teacher; it was even more challenging to support. In subsequent districts and positions where I worked as an administrator,
I was continually frustrated with my own inability to coach classroom teachers in formative assessment with few solid classroom models to reference and professional development activities to provide. At most, in each of the three schools where I was employed, there were only two or three teachers who successfully demonstrated solid and continuous formative questioning techniques that could then be used to provide data-driven, differentiated instruction. These informed classroom observations raised my awareness of the absence of, as well as need for, ongoing, systemic questioning for understanding and more importantly, how to provide administrative assistance to encourage its use in classrooms by teachers. Ultimately, this question caused me to wonder how other administrators dealt with this frustration.

The last three years provided additional insight for me as I assumed a district-wide position, allowing me the opportunity to visit all district classrooms and support professional development as identified by district assessment data, teachers, and administrators. Differentiated instruction was systemic, but not necessarily based on real-time assessment and data collection. Teachers offered a number of instructional methods, often unrelated to the specific needs of the student. Instruction based on formative as well as summative assessment was a mistaken supposition in many cases. Although there was a strong emphasis on differentiating instruction in the district, it was not necessarily individualized, leaving many students, especially our neediest, without more assistive interventions. Building administrators had varying degrees of assessment knowledge and were not readily identifying this gap in either classroom instruction or in their coaching of teachers. The need for superior classroom questioning, informal data collection, and targeted re-teaching, as evidenced in a growing assessment gap (MA DESE, 2012) fueled my desire to further investigate this topic.
Administrators and teachers are constantly under the pressure of state testing and publically shared results, tight instructional schedules, course requirements, curriculum mapping, pacing, union contracts, and even local politics (Martineau, 2012). The need to support teachers in expert instruction of curriculum in a limited amount of time is paramount for administrators. Precious planning and professional development time is often focused on state test results (after the fact), curriculum work, and lesson planning. Powerful research findings on formative assessment is often overlooked with this pressure to place facts and formulas into students hands rather that developing on-going dialogue on student confusions and metacognitive skills (Black & Wiliam, 1998). Until recently, there has been little training and or dialogue on the importance of informal classroom dialogue and questioning (Heritage, 2007; Stiggins, 2002). Assessments—both formative and summative, have only recently been addressed in pre-service and in-service training for teachers and administrators (Zubrzycki, 2012).

Classroom questioning for understanding is not a new phenomenon. Though, not always intuitive, it is a skill that can be developed and incorporated into class time with administrative support (DuFour, 2002). Teachers need to be sensitive and permissive to allow student dialogue in their classrooms in order to listen to the student’s understandings and confusions. Students left behind in comprehension of the curriculum may disengage in further learning or become disruptive—which all too often then becomes an administrative issue. Furthermore, as teachers listen to their students, administrators must also listen to their teachers’ understandings and confusions with regard to on-going classroom assessment for understanding. School administrators need to change the mindset from an emphasis on teaching to one of learning, “from inputs to outcomes and from intentions to results” (DuFour, 2002, p. 15). Sharing the research on this important topic will certainly start this conversation. Just as students need to see
how classroom material relates to their world and future work, teachers, administrators, and
teacher preparation programs also need awareness of the relevance and importance of high
quality professional development to all of their important work—and in particular, classroom
formative assessment for learning.

Although personally convinced that formative assessment, and in particular, classroom
questions and student dialogue, is essential to optimize learning and progress for all students,
(and that it cannot be separated from good instruction), I did not assume all administrators were
in agreement with its importance. Conducting research to identify this issue was open-ended.
Developing research questions and surveying administrators encouraged all participants to share
their beliefs, reflections, experiences, and knowledge freely. Questions were qualitative and
open-ended in order to be free of bias, personal disposition, and philosophy. In interpreting the
data, I remained mindful of my own beliefs on this issue. With recent long-term administrative
experience in three different districts and growing up in a large family that included a brother
with Down syndrome, I am acutely aware that all students will not reach the same learning goals.
However, I believe that all students can grow and both increase their capacity to learn and
acquire new skills and knowledge. I brought to this research a desire to support administrators as
they try to balance heavy workloads and increasing pressure to improve all student learning and
growth. I hope my research findings will generate at least the beginnings of a discussion and an
awareness of any gaps in on-going formative assessment training for administrators, teachers,
and teachers-in-training.
Research Central Question

The central research question guiding this study is: What are the lived experiences of school administrators who regularly provide feedback and support to teachers in the regular use of diagnostic formative assessments in their classrooms?

Theoretical Framework

The seminal works of Jean Piaget (1950), Lev Vygotsky (1978), and Jerome Bruner (1960) provided insight on developing and supporting effective formative assessments. Optimal classroom instruction and support reflects and incorporates the work of these three visionaries. When discussing classroom application of these theories, students are in the forefront of these studies and how to best support them to reach learning objectives. Classroom teachers also reside under the umbrella of this theoretical approach. As a second tier of professional learners, teachers need for growth and development must be supported either directly by administrators, an instructional coach or an informed peer (Bruner, 1960; Vygotsky, 1978).

Publishing his first paper on intelligence, Jean Piaget (1950) claimed that knowledge was an active process not a passive event. Piaget’s observations and organization of development into stages or schemes was unique and important, not only in his time but also today where they remain relevant to the discussion of supporting the use of teacher-student dialogue in the classroom. According to Piaget’s beliefs, when a child completes one of these schemes, he is ready for the next stage. These schemes or stages were built upon the tasks accomplished in the previous one; a child would advance when he/she finished the previous stage. Children understood novel situations by accommodating an existing schema. Equilibrium is the deciding and final factor that puts Piaget’s theories of development together. According to Miller (2002), “equilibrium integrates and regulates the other three main factors of development: physical
maturation, experience with the physical environment, and the influence of the social environment. All of these factors propel the child through the stages” (p. 67). Piaget also felt that students learn more efficiently when engaged in the process, not just memorization of facts: “the actions themselves are creating thought” (Miller, 2002, p. 13). Somewhat analogous to Piaget’s schemes and important to the discussion of classroom change for teachers is Guskey’s (2002) research on professional development which emphasized the importance of teachers’ exposure to several sequences in order to incorporate change into regular practice as illustrated in the following graphic. He notes that the stages must be followed sequentially in order for successful change to occur and that “of particular importance to efforts to facilitate change . . . is the sequence in which these outcomes most frequently occur” (p. 383).

![Figure 1: Stages for successful professional development (Guskey, 2002, p. 383)](image)

Significant and relevant to this study of classroom instruction, is Piaget’s concern with student misunderstanding of concepts. As a result of his work in Paris with Binet’s reasoning tests, Piaget’s interest was piqued when he began querying grade school students, Piaget “became fascinated with the thought processes that appeared to lead to answers, especially the incorrect ones” (Miller, 2002, p. 28). Piaget discovered a new and important field of research for himself that involved acquisition of knowledge that extended to the relationship between the subject and his or her interactions with objects and experiences in the environment (Miller, 2002,
Piaget’s research illustrates the importance of teacher-student questioning and dialogue for deeper understanding while improving learning for the student. The importance Piaget placed on diagnosing student misunderstanding and confusion is a valuable practice, whether instinctive or learned, for effective educators to use to support students in order to provide real-time information to diagnose and re-teach. Due to time constraints or the limits of their pedagogy, little attention may be made to investigate students’ uncertainty and actual thought processing of the material. At times, a difficult concept might be re-taught in exactly the same way and may elude learners. Subsequent lessons then may continue built upon a shaky foundation of concepts.

Piaget’s work with children leads to more recent work investigating the importance of on-going learning for teachers. Teacher-to-teacher inquiry is a more recent field of research that supports the importance of both collecting classroom data and collaborative inquiry. DuFour and Eaker (1998) revealed that “the process of searching for answers is more important than having an answer” and that dialogue and questioning among teachers should be “a collective one” (pp. 25-26). Bocala and Boudett (2015) referred to this practice as data literacy that needs to be incorporated into everyday habits. They reported that this is a developmental process for educators, which is both taught and coached, culminating with using data to drive pedagogy based on student learning (p. 5). In order for this change to occur, the authors supported a framework referred to as the Data Wise Improvement Process, which included the following “ACE Habits of Mind”:

A: Shared commitment to Action, Assessment, and Adjustment

C: Intentional Collaboration

E: Relentless focus on Evidence. (p. 7)
This framework also confirmed the need for administrators to provide support and coaching for classroom teachers with deliberate and planned professional development which includes using data to inform their practice.

**Adult—child interaction.** Lev Vygotsky (1978) studied how children think and learn with an emphasis on the importance of culture and social interaction in a child’s development. His theories emphasized the social interactions of a child with an adult in his or her development and included the psychology of play, thought, and language, all important concepts in classroom dialogue and discussion. Vygotsky (1978) summarized this developmental concept as being “the path from object to child and from child to object [that] passes through another person” (p. 30).

Through play or culture, Vygotsky (1978) theorized that the child moves from the concrete to the abstract and through inner and spoken language. They then develop their thought processes. Emphasizing the importance of the adult interaction in a child’s discovery of information, Vygotsky (1978) identified the Zone of Proximal Development (ZPD), the “gap between the determined developmental level of a child, “as determined by independent problem solving” (p. 86) and the “potential development through problem solving under adult guidance or in collaboration with a more capable peer” (p. 86). Vygotsky (1978) further explained that the “zone of proximal development defines those functions that have not yet matured but are in the process of maturation, functions that will mature tomorrow but are currently in an embryonic state” (p. 86). In order to assist the learner in navigating through the ZPD, dialogue with an adult or more capable peer is crucial. The importance of the teacher or capable peer is of significance in this study of both student learning and adult learning and how to augment both.

With the complexities of many curricula, many if not most students would flounder without the support of a knowledgeable adult or peer (Vygotsky, 1978) to take them from what is
known to what is not known. Early on, Dewey (1915) supported the importance of an adult interaction writing about the ideal home where the child is guided by social interaction, a knowledgeable adult and continuously learns: “he states his experiences, his misconceptions are corrected . . . if we generalize and organize all of this, we have the ideal school” (p. 24). Many teachers, with overwhelming caseloads and little time, pair students up as learning partners and peer editors, a variation of this same theme (Miller 2002). Miller (2002) noted the importance of peers and that, “such dyads permit a more equal contribution and avoid the imbalance inherent in adult—child dyads. Peers often coconstruct new (to them) knowledge that is a product of their collaboration. The novel outcome does not clearly belong to one child or the other” (p. 402).

One could argue that this theory of social interaction and ZPD would be applicable for adult collaboration as often found within the current practice of Professional Learning Communities (DuFour & Eaker, 1998; Fullan, 2000) characterized by “collective inquiry, the engine of improvement, growth, and renewal” (DuFour & Eaker, 1998, p. 25). Bocala and Boudett (2015) endorsed the positive effects of this social collaboration: “educators who engage in recursive cycles of collaborative inquiry are better able to understand the causal connections between the instructional practices they are using and student outcomes” (p. 4). Shabani, Khatib and Ebadi (2010) defined teacher ZPD as the gap or space between the present level of pedagogy knowledge and the “next (potential) level of knowledge” (p. 242). They did not restrict themselves to professional development as the only vehicle to attain this next step. Among others, they included student data, observation, and colleagues as additional sources of scaffolding. For continuous improvement a teacher must continually set new goals so as not to “remain as an experienced non-expert teacher with a stagnant ZPD” (p. 242).
Teacher influence and intervention. Bruner (1960) shared his belief that “any subject can be taught effectively in some intellectually honest form to any child at any stage of development” (p. 38). He referenced stages of readiness, built on Piaget’s (1950) ‘schemes’ while sharing the belief of the importance of the teacher. Bruner pulls these theories together in his reference to the importance of teachers in leading children through developmental stages. Miller (2002) conveyed Bruner’s belief that young children can be introduced to concrete examples of difficult problems and wait until the later developmental stage is present to introduce the abstract concepts (p. 38).

Piaget’s (1950) schemes, equilibrium, and concern about a child’s misunderstandings, followed by Bruner’s (1960) age-appropriate learning theory, and concluding with Voyagerk’s (1978) ZPD, social and cultural context, the important adult— are all essential and valid theories for educators and administrators of schools to reflect upon when considering the importance of classroom dialogue and questioning. With the past demands of No Child Left Behind [NCLB] (2003) upon districts and the dreaded prospect of failure, these important theories form valid structures for improved learning and instruction. Rather than implementing quick fixes and repetitive assessment strategies, the utilization of the concepts embedded in these theories are steeped in research and findings that cannot be ignored.

Li. and Li (2008) researched students’ misconceptions to improve teaching and learning in school mathematics and science. Their research sheds light on possible interventions for student success. Li and Li explored some of the issues involving students and their mathematical interpretations of complex material. Referring to Brown and Burton’s article on diagnostic models (1978), they claimed “one of the greatest talents of teachers is their ability to synthesize an accurate ‘picture,’ or model of a student’s misconceptions from the meager evidence inherent
in his errors” (pp. 155-156). However, if a teacher does not have that ability and is merely re-presenting information, the child may never be successful in overcoming confusion and misconceptions. Some of Li and Li’s references appear to analyze student difficulties in understanding mathematical concepts while focusing on unscrambling confusions.

More than sharing the content of the lesson, one of the most challenging tasks for teachers to master is to understand a child’s confusions and misconceptions and then find the time to re-teach material for true understanding. Much like a physician with a complex disease to diagnosis, teachers need to draw upon all available resources and research to accomplish a similar task for student’ intellectual wellness. The historical research of Piaget’s (1964) ideas of schemes supports the importance of mastery of a scheme or stage before moving on to the next. Vygotsky’s (1978) knowledgeable adult or peer illustrates the importance of that teacher in helping the student move from concrete to abstract theory, with recognition of the social and cultural difference each child brings to the classroom, that can impede and influence learning. This concept supports the theory of an administrator supporting their teachers as a knowledgeable adult. Bruner’s (1960) suggestions might convince a teacher to explore ways to have ideas introduced to children in a more simplified format for initial orientation and then introduce age-appropriate developmental work as the child matures. These historical concepts are further supported by modern research and are essential building blocks for future developmental study for improved learning for all—children and adult learners.
Chapter Two: Literature Review

Introduction

This literature review will support the premise that good questioning techniques are fundamental in analyzing students’ confusions and misconceptions and are powerful tools for teachers that can lead to better prescriptive and directed re-teaching. In order to implement both student learning and teacher growth, administrators have the responsibility to provide support and training for their faculty. Questioning for understanding student confusions and misconceptions needs administrative support and professional training in order to become systemic and successful in classrooms.

This literature review will include the following sections:

1. Foundational Research
2. Teacher as Diagnostician
3. Administrative Support

Figure 2: Literature review sections
Foundational Research

The most important framework that serves as the underpinning for this research on formative assessment and more specifically, diagnostic questioning and targeted remediation, includes the developmental theories of Vygotsky (1978) and Piaget (1950) that stress the importance of the adult in a child’s learning. Vygotsky emphasized the importance of the adult interaction in a child’s discovery of information and identified the Zone of Proximal Development (ZPD) (1978). Vygotsky defined the ZPD as “the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peer” (p. 86). According to Bottge, (2001) Vygotsky believed that “higher forms of intellectual functioning arose out of cooperation and collaboration with other people”
More recently, in an interview by Schwartz (2015), David Weiss, a teacher and Formative Assessment Specialist at New Visions for Public Schools in New York City, invoked Vygotsky’s theory and claimed the need for “students to struggle in the zone of proximal development, where they don’t quite understand yet but aren’t frustrated” (p. 1). Both historical and recent research supports this idea of the importance of the teacher in the classroom for immediate data collection and re-teaching (Black & Wiliam, 2001; Bloom, 1980; Heritage, 2007; Piaget, 1950; Vygotsky, 1978). Not only is this good instruction but also the most fair and equitable tool to support all learners (Clark, 2012).

Piaget (1950) stressed socialization or co-operation in the development of a child’s thinking as “an objectively conducted discussion” and attributes that to the “development of logic” (p. 178). The importance of child-adult interaction and support is further reinforced by Piaget’s idea of schemes and maintains the significance of mastery of a stage before moving on to the next. This child-adult interaction is of the utmost importance in this transition. Piaget’s developmental theory supports the advantages of on-going dialogue in the classroom and targeted instruction based on the on-going current classroom information supplied by dialogue.

Early on in his research, Bloom (1980) also wrote of the benefits of formative assessment and corrective instruction. Not only was learning improved for specified lessons, the results were on-going. He cited that the increase in learning was impressive and that “the amount of corrective help needed becomes smaller on successive learning tasks, until only a few students need such corrective procedures. The students appear to be ‘learning to learn’” (p. 384).

This idea of learning to learn, was further supported by Gardner (2014), who spoke in an educational video about teaching for understanding rather than for temporary recall. He stressed the need for students to be able to “mobilize what you’ve studied” so that you can “make use of
what you have learned”. He cited the four “enemies of understanding”: “short answer assessments, text-test context, correct answer compromise, and pressures for coverage”.

Recognizing the need for the social studies teacher to “go from Plato to NATO”, Gardner (2014) warned that the time constraints do not justify using any of the temporary recall assessment techniques listed above.

In a retrospective on mathematics education, Kieran (1994) looked back twenty-five years and found research on learning had evolved from simple to more complicated questions and more sophisticated measures of performance. He reported that researchers claimed that the methods they were using were inadequate. He hypothesized that “in the future, there will be more research on how students justify answers, how they build arguments about things” (p. 585). Rather than isolated “snapshots of learning . . . the detailed observation of the process of learning” (p. 591) would be the direction of mathematical research. Kieran (1994) further explained, “Learning mathematics means learning with understanding and that understanding (no longer equated with mathematical rigor and correctness) is an ongoing activity” (p. 605). This research supports the value of dialogue and questioning in the classroom in order to verify and understand the metacognition of the students, not just their final assessments.

Kamii and Ewing (1996) summarized the need for continued research on successful instructional techniques and data-driven methods to improve instruction and learning. They admitted that teaching is a combination of art and science periodically hit with “bandwagons and the swinging of the pendulum” (p. 264) but educational research must have a scientific base. “Teaching will always remain an art, just as medicine is an art. But teaching must become an art based on scientific knowledge because science advances only in one direction and does not return to obsolete theories” (p. 264). Kamii and Ewing’s (1996) research further supports teacher
use of data-driven instruction in the classroom and a more scientific approach to improving teaching and learning for all levels of learning development—student and teacher.

Black and Wiliam (2001) confirmed the importance of classroom formative assessment, the need for questioning imbedded into instruction, and data-driven re-teaching.

Discussions, in which pupils are led to talk about their understanding in their own ways, are important aids to improved knowledge and understanding. Dialogue with the teacher provides the opportunity for the teacher to respond to and re-orient the pupil’s thinking. (p. 7)

Extensive, empirical classroom research by Nystrand, Gamoran, Zeiser, and Long (2003) also supported this idea of classroom dialogue and they tied it closely to student success. In their research, they “uncovered a strong and statistically significant association between student achievement and the extent to which classroom discourse moved away from recitation to genres of classroom discourse that recruited and highlighted student ideas and voices” (p. 139).

Classroom instruction must also be fair and equal. Clark (2012) found political and cultural implications in his paper on formative assessment and suggested that formative assessment is an integral component for a more democratic system of education. He explained “the instructional techniques found in the formative assessment classroom reduce the formality and psychological risk associated with teacher-fronted transmission methods, the use of which negate the benefits associated with collaborative learning” (pp. 208-209).

The importance of on-going classroom assessment is recognized as relevant and integral in classrooms, yet often kept separate as Heritage (2007) captured in her findings:

After more than a hundred years of exhortations and a significant body of research on the topic, the idea that assessment and teaching are reciprocal activities is still not firmly
situated in the practice of educators. Instead, assessment is often viewed as something in competition with teaching, rather than as an integral part of teaching and learning.

(p. 140)

Extending instruction from teacher to technology as a knowledgeable ‘teacher’ is a new, yet significant consideration in today’s high tech environment and a compatible, logical extension of the theory. Santos, Cook, and Hernández-Leo (2015) addressed this possibility in their research article citing a 2010 European Technology Report on the “reconceptualization of educational theories” (p. 34). They mentioned “Augmented Contexts for Development” (ACD) where:

Learners can use mobile devices (e.g., smartphones) in combination with augmented digital information to interact with each other and interact with the physical and virtual environment with the goal of creating their own ACD. The smartphone and the location-triggered learning activity it holds are considered here as the ‘more capable peer’ (Vygotsky, 1978, p. 86). The device guides the learner to solve problems and “augment[s] her context of development”. (p. 34)

The use of formal and informal data, coupled with directed instruction can make a significant impact on improving the learning potential, capacity, and achievement for all students (Black & Wiliam, 1998; Black & Wiliam, 2001; Bloom, 1980; Clark, 2012). Habitual analysis of data, from frequent assessments and daily classroom instruction, coupled with targeted teaching in areas of student confusion and misunderstanding could be an under-utilized yet most important antidote for student confusion and misconceptions (Li & Li, 2008). Fairness and equity is also a strong argument for the use of classroom data and re-teaching (Clark, 2012) to reach all learners and open up more opportunities for learning to struggling students. More
research needs to be done to investigate why this practice is not systemic in classrooms and how administrator support can be used to coach teachers for a successful and routine implementation (Heritage, 2007).

**Teacher as Diagnosticon**

Authors as early as the 1970’s supported the theory of the importance of the teacher as the diagnosticon in the classroom. However, due to a variety of reasons, not limited to time constraints, summative test pressures, or lack of training and support (Davis & Boineau, 1973; Gorlewski, 2011), this practice is not always systemic in classrooms. The teacher as diagnosticon remains an integral and valuable part of good classroom instruction when teachers are provided with time, understanding, and support of what formative assessment means and its value for immediate data for classroom instruction.

Prior to standardized testing and federal and state mandates, Davis and Boineau (1973) asserted the importance of the classroom teacher in diagnosing students’ learning since “the teacher is the best one equipped to assess the child’s learning problems as manifested in the daily classroom” (p. 564). However, they noted that teachers are not always confident of their ability to diagnosis or differentiate instruction based on their informal data from classroom interactions. They reported that until this was an actual practice, “diagnostic or prescriptive teaching and individualized instruction are empty phrases” (p. 564).

Almost forty years later, Gorlewsck (2011) stressed the need for individual classroom data at this crucial juncture in education and the importance for teachers to find the time to amass and evaluate data. They acknowledged that “in this era of increasing standardization and assessment-based accountability, teachers may be urged to overlook their own ability to collect,
analyze, and report meaningful data about student performance—even though these data can be far more useful and significant than scores on mandated examinations” (p. 100).

Specific to mathematical research, but pertinent to classroom assessment and feedback, Ketterlin-Geller and Yonanoff (2009) found the need for diagnostic information and targeted instruction in algebra. Russell, O’Dwyer, and Miranda (2009) studied the use of a diagnostic instrument in algebra. Their research revealed that when “teachers [who] use diagnostic information to identify misconceptions and subsequently use instructional strategies to help students reconceptualize those misconceptions, students’ algebraic ability improves” (p. 423).

Supporting this concept of teacher as diagnostician, Bambrick-Santoyo (2007) described the overall success that teachers have had with targeted assessment. Using athletic coaching as an example, he illustrated the need for the coach to carefully observe the athlete’s action, not just the final results. In the case of a swimmer, if coaching was reliant on just the final swim time—the coach would not focus on the correct area in need of improvement which was actually “getting off the block faster” (Bambrick-Santoyo, 2007, p. 45), rather than just saying, swim faster! Supporting this idea of teacher as coach Chappuis (2012) provided another example of successful targeted diagnostics and intervention from the world of coaching that also translated to successful classroom intervention and instruction. He posed an interesting scenario:

Think about a girls’ volleyball coach. When the girls are practicing their serves, how long does the coach let them practice serving incorrectly? Vince Lombardi is frequently credited with saying, “Practice doesn’t make perfect; practice makes permanent. Only perfect practice makes perfect.” To ensure students are practicing perfectly, successful coaches intervene as soon as possible to correct errors in form or motion. They don’t wait until after
the game. In our classrooms, how long do we allow students to repeat a mistake or cement a misconception? (p. 38)

In a later publication, Bambrick-Santoyo (2010) elaborated further on the importance of strong questioning techniques and teacher response prior to final summative assessments. He describes the advantages of using additional on-going assessment as an instructional tool that has positive implications for teachers. He writes on the importance of immediate feedback.

Constantly checking for understanding tightens the feedback loop between interim assessments . . . To make sure the goals of the action plan are being met with every lesson, teachers should employ oral review, dipsticking, dry erase boards, cold calling, and other questioning techniques to gauge student comprehension as new material is taught. Such “in-the-moment” assessment is critical for ensuring that the action plan is actually achieving results, and can also provide real-time insights into why a given lesson is succeeding or failing. (p. 78)

Heritage (2007) supported the importance of questioning student thinking by preparing lesson plans that would include questioning. The resulting classroom data would then be used to provide more appropriate, differentiated instruction. She refers to it as “planned for interaction” (p. 141). She suggested that this be done as the lesson is planned by the teacher and incorporated into the lesson so teachers can determine “how they will elicit students’ thinking during the course of instruction” (p. 141). This planned-for questioning will “enable students to explore ideas, and these questions can elicit valuable assessment information” (p. 141). She emphasized the intervention that must follow with the data derived from planned questions: “strategic questioning in a whole-class lesson can provide scaffolding for a range of learning levels, while forming subgroups for instruction, assigning individual activities, and employing a combination
of didactic and exploratory approaches help accommodate differences” (p. 145). Black & Wiliam’s (2001) work supported Heritage’s idea of teachers planning ahead for proper inquiry. “Opportunities for pupils to express their understanding should be designed into any piece of teaching, for this will initiate the interaction whereby formative assessment aids learning” (p. 7).

Also important to the discussion on lesson and question planning, is a caution on student-teacher conversations by Black and Wiliam (2001). In this particular example, the authors first cited the need for structure, planning, and proper time afforded for expert classroom dialogue to occur. Without those corollaries, the end-results would not complement the classroom learning environment or student success. However, at times, they note that teachers may not be ready for student dialogue and may “unconsciously, respond[ed] in ways that would inhibit the future learning of a pupil” (p. 7). The teacher might be expecting one particular answer and “lacks the flexibility or the confidence to deal with the unexpected. So the teacher tries to direct the pupil towards giving the expected answer” (p. 7). This action thwarts further dialogue and in fact, “the teacher seals off any unusual, often thoughtful but unorthodox, attempts by the pupils to work out their own answers. Over time the pupils get the message—they are not required to think out their own answers” (p. 7).

Black and Wiliam (2001) further reported on the importance of the proper administration of classroom questioning and cautioned about the common mistake of only calling on students that already have the answer. Students, once aware of this classroom phenomena, leave the task of answering to those few who have the answer, “knowing that they cannot respond as quickly and being unwilling to risk making mistakes in public” (pp. 6-7). The teacher has compromised the lesson by lowering expectations for a portion of the students in exchange for keeping “the lesson going” (pp. 6-7). In essence, this useful practice can fail for students, “the question-
answer dialogue becomes a ritual, one in which all connive and thoughtful involvement suffers” (p. 8).

Ruiz-Primo (2011) supported the need for good questioning techniques in the classroom and referred to it as “assessment conversations” (p. 18). She explained some positive results of these dialogues and how it can impact teachers’ lesson decisions and planning. She summarized the successful outcome of assessment conversations that “help teachers to continually acquire information about the level of their students’ understanding” (p. 17). This continuous flow of data then determines the instruction, now differentiated to “achieve the learning goals” (p. 17). According to Ruiz-Primo (2011), assessment conversations are for the purpose of revealing students’ thought processes and to allow students “to voice their understanding” (p. 17). After the teacher has allowed and encouraged these conversations and students’ ideas, concepts, “mental models, strategies, language use, and/or communication skills” have been collected and assimilated, teachers can resume instruction with more information to design instruction (Ruiz-Primo, 2011, p. 17).

From a personal perspective, Dirkson (2011), writing on using effective questioning and dialogue with students to improve instruction and understanding, relayed her teaching experience at the college level. She reported that “engaging students in discussion during a directed presentation allows me to know if they understand the material” (p. 28). She uses this immediate data to change or “redesign instruction on the spot using the feedback to address complex issues differently or use another tactic during . . . presentation, such as providing a specific example, metaphor, or varied explanation” (p. 28).

Fordham (2006), also a professor of pre-service teachers, believed in the importance of making “strategic questions a part of the content teacher’s instructional repertoire” (p. 390). She
contended that this type of question is most important in order “to ascertain and increase
students’ level of comprehension” . . . [strategic questions] focus more on the how to
comprehend challenging material than on what has been comprehended” (p. 391). She offered
that her pre-service students were initially inclined to assess as they were assessed in school,
with recall questioning, rather than preparing their lessons with imbedded strategic questions.
Her insights provided helpful suggestions for new teachers and their educators. Do not “presume
that teachers, whether they are preservice or inservice, automatically make the link between
comprehension strategies and the instructional questions that inspire them” (p. 394). In addition,
she suggests that strategic questions need to be clearly defined, modeled and practice needs to be
provided (p. 394).

Other related studies referencing technology expanded this topic to the computer as an
extension of the teacher or more capable peer (Vygotsky, 1978). Computerized data has added
information and insight into, not only the misconceptions that students have, but also the
fundamental cognitive reasons for the confusion. Eysink, et al. (2009) looked at innovative
approaches to discover the most effective of them. Using technology, they attempted to look
beyond the influence of the teacher in front of the classroom.

The smartphone and the location-triggered learning activity it holds are considered here
as the ‘more capable peer’ (Vygotsky, 1978, p. 86) because the device provides guidance
to the learner in order to solve a problem and as a consequence the learner augments her
context of development. (p. 26)

Dirkson (2011) also studied computerized feedback and the positive success video games
offer students by enabling them to learn from their mistakes due to the quick response provided
by the technology. He found with his study with students that “when things start going wrong
and they realize they don’t have the skills to succeed, they hit the reset button and begin again. In video games, failure is good” (p. 26). This research, although from a computerized instructional source, also supports the importance of immediate feedback in the classroom with technology acting as the teacher or a more capable peer (Vygotsky, 1978).

Not all feedback is helpful. Appropriate feedback to students is of the utmost importance to further learning. Clark (2012) strongly supported this notion in his research on formative assessment with the use of questioning. He referred to the intricacies of and the necessity for giving the proper response to students rather than, “simply telling a student to ‘work harder’ or ‘recalculate your answer’” (p. 211). This type of feedback is insufficient for student learning as it “does not possess the qualities of formative feedback or promote self-regulated learning because it does not strategically guide (or scaffold) learning by informing the student how or why they need to do this” (p. 211).

Ruiz-Primo (2011) also cautioned that care needs to be taken by teachers to ensure a safe environment for their students to avoid any embarrassment: “different types of feedback affect students’ beliefs about their performance capabilities and value of effort” (p. 21). Questions should be “open-ended . . . tapping into diverse types of knowledge” (p. 19). She described types of information that can be uncovered by targeted questioning, the more successful ones for capturing student cognition including: “‘Why do you think so?’’, ‘‘How do you know that?’’, or “What evidence do you have to support your claim?”’ (p. 19). Referencing Vygotsky (1978), Clark (2012) emphasized the need to use these questions to then scaffold instruction for students, which promotes “further inquiry and deepens cognitive processing” and “closes the gap between their current level of understanding and the desired learning goal” (p. 211).
Lemov (2010) spoke to the need for collecting data in an appropriate timeframe. He compared the gathering of data via questioning to driving and the consequences of waiting until the summative assessment. “Good drivers check their mirrors every five seconds. They constantly need to know what’s happening around them because waiting for an accident to tell them they’re doing something wrong is a costly strategy” (p. 97). He advised teachers to:

Think in the same way, seeking constant opportunities to assess what your kids can do while you’re teaching and using that knowledge to inform what you do and how you do it. Waiting until there’s an accidental failure to comprehend means paying an unsustainably high price for knowledge. (pp. 97-98).

Keeley et al. (2011) reinforced the importance of classroom assessment and instruction based on current data as opposed to standardized testing. He explained the purpose of classroom formative assessment as opposed to summative assessment that is for the sole intent of reporting student achievement, not necessarily learning.

Their [formative assessments] primary purpose is to promote student thinking and improve opportunities to learn by providing valuable feedback to the teacher . . . They are so inextricably linked to teaching that it is often difficult to determine whether a probe is used as an instructional or assessment strategy. (p. 3)

Formative assessment is difficult to separate from solid classroom instruction and is a “critical component of effective instructional practice” (Ruiz-Primo, 2011, p. 15). Popham (2006) makes the analogy to doctors’ work and the critical importance of data in informing their practice: “because health professionals are evaluated according to the longevity and physical well-being of their patients, you can be certain that those professionals thoroughly understand how to ascertain a patient’s vital signs. They're called vital signs because they’re vital” (p. 84)!
Popham (2006) subsequently calls for a classroom shift that uses evidence of student mastery to change instruction; the result of this mastery becomes the “grist for adjustment decisions” (p. 84). He reports that these decisions may result in a range of instructional changes, “from fairly inconsequential alterations” to “substantial changes including reteaching something already taught, but teaching it differently; adding brand new content to the existing instructional plans; or deleting previously planned instructional activities” (p. 84).

Literature overwhelming supports the claim of the importance of appropriate questioning in the classroom to target confusions and misconceptions directly resulting in the need to differentiate instruction. Tomlinson and McTighe (2006) refer to this as “responsive or differentiated teaching” (p. 18). Differentiated or responsive teaching implies that a “teacher will make modifications in how students get access to important ideas and skills . . . in the learning environment—all with an eye to supporting maximum success for each learner” (p. 18).

Differentiated instruction supports the concept that learning success depends on thoughtfully planned instruction that is responsive to the students’ needs and learning styles. Schmoker (2006) supported this need to shift to a “focus on learning, on assessment results” (p. 126) which then becomes the “leverage for improvements in teaching” (p. 126). On a visit to a high performing school, Schmoker (2011) later reported that one of the most important instructional practices for improved learning was on-going, daily formative assessments leading to targeted instruction and support. He described this approach as a, “multiple cycle of guided practice, informed, throughout, by checks for understanding” (p. 66). Reeves (2011) advised teachers to create plans for learning rather than lesson plans and stressed that teachers “must do everything possible to provide each student with a full experience of the ideas in the lesson” (p. 177). Teachers also have the responsibility to match “teaching to the individual needs of their
audience and checking that audience for evidence that the goals of the event were achieved” (Reeves, 2011, p. 177). Based on these findings, it can certainly be implied that differentiated instruction completes the cycle for improved learning, initiated by formative classroom questioning and dialogue.

This portion of the literature review begs the next question as to how this classroom strategy can be encouraged and supported by building administrators in order to promote an increase in use of this form of diagnostic assessment and treatment in classrooms. Furthermore, what are the lived experiences of school administrators who regularly provide feedback and support to teachers in the regular use of diagnostic formative assessments in their classrooms?

**Administrative Support**

Daily classroom-level assessment (or formative assessment) is essential to student improvement. Schmoker (2006) advocated a leadership focus on results rather than traditional supervision for improvement of teaching: “when leadership is focused on results . . . teaching improves” (p. 126).

Stiggins and Duke (2008) claimed, “classroom assessments are the foundation of a truly effective assessment system . . . and the principal must be a key player” (p. 286). This literature review uncovered many roadblocks to successful implementation of classroom formative assessment, including lack of administrative training, coaching, modeling and professional development (Robinson, Myran, Strauss, & Reed, 2014; Stewart & Houchens, 2014; Stiggins & Duke 2008; Webber et al., 2013). However, administrators must have the drive and tenacity to support teachers if formative classroom assessments are to become a reality in their schools (Webber et al., 2013).
Although the importance of administrative support in coaching, training, and encouraging teachers to formatively assess their students for understanding is essential for implementation (Popham, 2006), Stiggins and Duke (2008) state that informal classroom assessment is often overlooked, misunderstood and the “preparation for productive assessment has been missing from principal training programs” (p. 285). In order to support students, teachers also need support, modeling and training (Fordham, 2006; Popham, 2006). Stiggins and Duke (2008) further contend that all assessment training must become a priority, not just locally, but at the state levels as well:

If those who formulate state licensing requirements share the belief that the principal's role does not include assessment, the consequences would be clear: not part of the job, not part of state requirements; not part of the requirements, not part of our leadership preparation program. But, again, we know that it is part of the job and, therefore, must be woven into the certification requirements and program outcomes. (p. 290)

In their extensive study, Webber et al. (2013) pointed out this need for assessment literacy and the dearth of training in administrative programs and on-going professional development for leaders who “must remain current in their professional expertise in student assessment (Mulford, 2008) even though assessment literacy has historically been missing from principal preparation programs (Popham, 2004; Stiggins, 1993; Stiggins & Duke, 2008)” (p. 242).

Robinson et al. (2014) worked with educators in a collaborative effort between university and district personnel to enhance the development of formative assessment practices. They valued the importance of formative assessment but also realized, “actual adoption and use of such strategies lag considerably behind what is being promoted nationally and internationally”
(p. 142). When planning for the professional development for the district and meeting with all stakeholders, they immediately realized that “while these educators were being asked to increasingly utilize student performance data in formative ways, it became apparent that teachers lacked adequate backgrounds and understandings of the fundamental principles of formative assessment to fully capitalize on the uses of these practices” (pp. 141-142). They also advised that administrators carefully plan training, suggesting the following steps be considered when preparing for professional development to embed formative assessments into regular classroom instruction:

1. offering training that fit into the perceived needs of the participating schools;
2. recognizing/respecting teachers’ background knowledge;
3. avoiding being perceived as an add-on to teachers’ already heavy workload;
4. focusing on strategies teachers could use in their daily work with students;
5. providing opportunities for collaborative dialog among teachers;
6. providing a means of examining changes in teachers’ actual use of formative assessment strategies;
7. providing a timely means of examining the impact of these changes in their teaching practices on student learning (p. 142)

In a Norwegian study, Smith (2011) made a similar case for the need to provide support to teachers to maximize and improve formative classroom assessment. Their research again uncovered a lack of knowledge, little or no professional development, nor time for teachers to assess learning in the classroom. For the purposes of this discussion on formative assessment, Smith (2011) referred to the practice as AfL, Assessment for Learning. In the survey results, he reported that even the most highly regarded teachers admitted they “did not know enough about
AfT to successfully practice it in their own classroom” (p. 55). This research also supported the notion that outside pressures such as, “external directives and steering documents” (p. 55) negatively influenced their growth in assessment knowledge and instructional practice. In addition, teachers acknowledged time constraints saying that “there is simply no time to thoroughly learn about and implement AfL because they have to cover the curriculum” (p. 55).

Ruiz-Primo (2011) recognized the need for administrative support for teachers’ knowledge base and that “assessment conversations are effective when teachers have sufficient content knowledge and pedagogical knowledge to interpret and act spontaneously and contingently on students’ contributions” (p. 18). Specifically referring to formative assessment, Stewart and Houchens (2014) acknowledged a “poverty of practice” (p. 51) in classrooms. They offered advice for administrators who want to increase this instructional practice in their schools. Notable is the requirement for consideration of “adult learning needs” (p. 63) and the formation of unified, collegial groups meeting over a longer period of time (p. 64). They suggested that districts offer appropriate timely workshops for more saturated learning where: “adult learners volunteer to participate in professional development initiatives, rather than have their participation forced” (p. 75).

Similar to other research, Schneidler and Andrade (2013) reported the need for administration to support teachers and recommended three specific areas for attention, the last two most closely related to this discussion on classroom assessment and providing differentiated instruction. Those recommendations included:

(a) designing instructional sequences based on state standards,

(b) effectively engaging in formative assessment practices, and
(c) moving beyond a one-size-fits-all approach to re-teaching concepts. The latter two items also require that teachers develop skills related to interpreting evidence of student learning, and in targeting feedback and instructional adaptations directly to a student’s present level of performance. (p. 161)

Administrators, as well as teachers, need support and training in formative assessment. Schneidler and Andrade (2013) acknowledged that training is still being perfected and that “in order to achieve the desired increases in student achievement . . . the education community must be just as nimble in supporting teacher learning as we expect teachers to be in supporting student learning and administrators to be in supporting teacher learning” (p. 161).

Good questioning techniques are fundamental in analyzing students’ confusions and misconceptions (Li & Li, 2008). Providing the appropriate interventions will increase learning capacity for students (Black, 1998). Literature supports the tenet of teacher as data collector, diagnostician, and treatment facilitator (Black, 1998; Bloom, 1980; Clark 2012; Wiliam, 2001). The concept of classroom instruction based on on-going assessment identifies the importance of an informed administrator to support teachers with the necessary learning and training (Stewart & Houchens, 2014). Classroom questioning and dialogue is sometimes difficult to observe, to find time for, under-valued and under-utilized in many classrooms (Ruiz-Primo, 2011), yet an integral tool, quite inseparable from good classroom instruction that merits full administrative support. Harris (2007) summarized the use of good questioning techniques and the necessity of preparing for those questions. She urged going beyond recall questions to “promote, challenge or broaden the range of pupil experience” (pp. 254-255). She cautioned that “there is a danger of complacency when it comes to questioning. With all the demands of curricular innovation, there
is less time for teachers to review the basics, and yet it is important for the quality of learning that every aspect of a lesson is planned, including time for questioning” (p. 254).

Administrators need every tool available to produce improvements on state assessments, learning growth, graduation rates, and to reduce learning gaps with high need students (MA DESE, 2012). If schools slip into low performance and are designated to be a Level 4 or 5 school, there are serious consequences. Schools are placed into a Level 3 if they are the lowest performing, least improving schools compared to demographically similar schools, have low participation rates in the state tests, or low graduation rates (MA DESE, 2015). “The lowest achieving, least improving Level 3 schools are candidates for classification into Levels 4 and 5, the most serious designations in Massachusetts accountability system” (MA DESE, 2015). At Level 5, the response from the state can include designing a quick turn-around plan to “accelerate district improvement” (MA DESE, 2012) up to the replacement of the administration and teachers and operating the school under “joint district-ESE guidance” (MA DESE, 2012). Such results would jeopardize, not only school personnel but also all community support for local schools, finances, and governance.

The impact of such public reporting and scrutiny is considerable for administrators and individual schools and districts. In a recent study based in Portugal, Nunes, Reis, and Seabra (2015) found that, once school rankings were published, “fewer students enroll in schools that are rated poorly and the probability of closure of these schools increases” (p. 15). Another study on administrative openings reported that fewer candidates are coming forward for some administrative positions, partially due to “feeling overwhelmed with high expectations from school stakeholders” (Muñoz & Barber, 2011, p. 133). In a Texas study of three principals removed from their positions, it was found that state test scores are more important in
determining tenure than other performance indicators (McGhee & Nelson, 2005). Sadly, one
school administrator (Frederick, 2010) suggested that the “sick bucket” (p. 39) be passed around
among administrators while awaiting for test results. He confessed that results played a pivotal
role in his life:

Everything rests on them and nobody is interested in excuses such as a less able cohort, a
shortage of specialist teachers or anything else. Our reputations as heads and the
reputations of our schools are firmly fixed on our results. (p. 39)

Indeed there are tremendous challenges for administrators that require “courage, drive,
resilience, tenacity and gravitas” (Webber et al., 2013, p. 252). The life of a school administrator
is all-encompassing and overwhelming; the to-do list is endless. A fictional job advertisement for
an administrative opening might read:

Wanted—A “visionary leader” who can oversee a staff of about 100, handle multimillion
dollar budgets, design curriculum for numerous subject areas, effectively mete out
discipline to employees and minors, develop professional learning communities, maintain
a safe working environment, build rapport with parents and children, and lift test scores
of underperforming students. Oh, and if test scores don’t rise high or fast enough—you’re
fired. (Martineau, 2012, p. 53)

In order to improve teaching and learning, principals and administrators must
continuously muster the drive and sustainability to become change agents: “they must persist in
the pursuit of best assessment practices and continually challenge complacency among their
teaching staff members who are satisfied with their existing levels of assessment expertise”
(Webber et al., 2013, p. 249).
Conclusion

This literature review supports the use of classroom formative assessment to analyze student confusion and to re-teach curriculum to resolve learning issues (Black & Wiliam, 1998; Black & Wiliam, 2001; Bloom, 1980; Clark 2012). Teachers as diagnosticians are essential in providing this form of assessment and intervention (Li & Li, 2008). However, they need the support of school administrators. In spite of many challenges in implementation of formative assessments, administrators are the “key player[s]” (Stiggins & Duke, 2008, p. 286). They must be both the cheerleader and the coach to drive this initiative (Weber et al., 2013). How they manage to do so is the essence of this research: what are the lived experiences of administrators who support the implementation of diagnostic questioning techniques by their classroom teachers?
Chapter Three: Research Design

Introduction

School administrators have the responsibility to support the educators they supervise by providing constructive feedback and the necessary supports to help teachers improve instruction. The use of diagnostic questioning by classroom teachers has been shown to help promote student understanding, unearth confusions and misconceptions, and allow teachers to correct and reteach students for mastery of the curriculum. If we could better understand how administrators support the instructional practices of their classroom teachers with regards to diagnostic questioning techniques with targeted intervention, we may be able to assist them in enhancing student success. This study seeks to understand the lived experiences of school administrators who regularly provide feedback and support to teachers, and specifically, how they can encourage and support diagnostic formative assessments, which may improve learning for students.

This chapter includes the research methods that were used for this study, including the paradigm, approach, tradition and philosophical discussions that guide the research. In addition, the technical details of the study include: participants, recruitment, methodology of data collection, analysis, and storage, and finally, trustworthiness.

Purpose Statement

The central research question guiding this study is: What are the lived experiences of school administrators as they work to support classroom teachers in the use of diagnostic questioning techniques?

Qualitative Research Design

Maxwell (2005) describes qualitative research as having an “inherent openness and flexibility”, allowing the researcher to “understand new discoveries and relationships” (p. 22).
With regard to the open-ended, inquisitive nature of this study, one must provide a range of probing questions to encourage discourse and prevent a narrow response structure. Ponteretto (2005) supported this direction as he describes the alternative, quantitative research that “forces participants to respond to instrument items or protocols that are predesigned (focusing on confirmation of the hypothesis)” (p. 102). Cox (2012) supported a qualitative approach but cautioned against combining the quantitative and qualitative process, which was a preliminary consideration for this research:

Adding qualitative methods onto a quantitative skeleton means, in effect, that the positivist paradigm dominates the design while the qualitative component is forced to fit. In other words, even though a mixed-methods approach may appeal to an ideal of methodological inclusiveness, it may actually serve as a cover for positivist ways of thinking about research. (pp. 130-131)

Finally, quantitative methods may “focus on the quantification of observations and on the examination of correlational or causal relationships between variables” (Ponterotto, 2005, p. 99). Such an approach might miss some of the more pertinent and personal vignettes in the day-to-day details and lived experiences of administrators in this study.

Maxwell (2005) describes the qualitative research process as one of “‘tacking’ back and forth’ and “assessing the implications of goals, theories, research questions, methods, and validity threats” (p. 3). Qualitative researchers study “a relatively small number of individuals . . . and preserve[s] the individuality” (Maxwell, 2005, p. 22). This research is concerned with making sense from the participants to develop a “composite description of the essence of the experience for all the individuals” (Creswell, Hanson, & Clark, 2007, p. 252). These images mirror the scope of this qualitative research as planned. The very theme of this study
(questioning), lends to a qualitative design for research. The research is open and exploratory in nature, and as such, the researcher becomes a “coinvestigator, rather than as an expert scientist, thus facilitating mutual understanding” (Creswell, 2009, p. 102).

**Research Tradition**

Interpretative phenomenological analysis approach (IPA) was used in order to focus on how the administrators lived experience matters and relates to others in similar situations. Smith, Flowers, and Larkin (2009) describe the IPA researcher’s task is to “make sense of what is happening” and as “an interpretive endeavor . . . is therefore informed by hermeneutics, the theory of interpretation” (p. 3). Finally, Smith et al. (2009) stressed that the data is subject to the participants and what they share, “IPA recognizes that access to experience is always dependent on what participants tell us about that experience, and that the researcher then needs to interpret that account from the participant in order to understand their experience” (p. 3). Borrowing from the work of Maxwell’s Interactive Model of Research Design (2005, p. 5), a map of the research design shows the interdependence between goals, the conceptual framework, methods, and validity with the research questions (See Appendix C).

**Paradigm**

The Social Constructivist Worldview or paradigm supported this qualitative quest to uncover answers on how administrators can best support teachers in the classroom with regard to formative assessment. Creswell (2009) explained that “social constructivists hold assumptions that individuals seek understanding of the world in which they live and work” (p. 8) and looks for “the complexity of views rather than narrowing meanings into a few categories or ideas” (p. 8). Being engaged in such work for many years, it was important to acknowledge my own experience and personal bias. Creswell (2009) again refers to this when acknowledging that
“researchers recognize that their own backgrounds shape their interpretation, and they position themselves in the research to acknowledge how their interpretation flows from their personal, cultural, and historical perspective” (p. 8).

**Interpretive Phenomenology Analysis Research (IPA)**

Interpretative phenomenological analysis is informed by “three key areas of the philosophy of knowledge: phenomenology, hermeneutics and ideography” (Smith et al., 2009, p. 11). Creswell (2009) describes the Phenomenology Tradition as one in which the participants actively describe their experiences and the researcher is charged with “developing patterns and relationships of meaning”, while the researcher “brackets or sets aside his or her own experiences in order to understand those of the participants in the study” (p. 13). Hays and Wood (2011) pinpoint the purpose of the phenomenology tradition as a vehicle to “describe the depth and meaning of participants’ lived experiences . . . Phenomenologists seek to understand the individual and collective internal experience” (p. 291). “It is an approach to the study of experience” (Smith et al., 2009, p. 11). “Phenomenologists work primarily from the participants’ specific statements and experiences rather than abstracting from their statements to construct a model from the researcher’s interpretations as in grounded theory” (Creswell et al., 2007, p. 252).

Smith et al. (2009) describes phenomenology inquiry as a “pluralist endeavor” (p. 12) informed by the distinct work of four philosophers: “Husserl, Heidegger, Merleau-Ponty, and Sarte” (p. 12). “Finding a means by which someone might come to accurately know their own experience of a given phenomenon” (Smith et al., 2009, p. 12), Husserl believed everyday activities must be more than observed. “Once we stop to self consciously reflect on any of this seeing, thinking, remembering and wishing, we are being phenomenological” (Smith et al., 2009,
Husserl also developed the idea of bracketing, or putting aside the every-day world “in order to concentrate on our perception of that world” (Smith et al., 2009, p. 13). His work is important as a model for reflection and examination of the lived experience in this study, while putting aside personal perceptions. “He [Husserl] sets the agenda for the attentive and systematic examination of the content of our consciousness, our lived experience, which is the very stuff of life” (Smith et al., 2009, p. 16). Heidegger, a student of Husserl, differed from his teacher as a phenomenologist who was more concerned with “existence itself, and with the practical activities and relationships which we are caught up in” (Smith et al., 2009, p. 17). Humans are “thrown into a world of objects, relationships, and language” and existence is “perspectival, always temporal, and always ‘in-relation-to’ something” (Smith et al., 2009, p. 18).

Merleau-Ponty was the third important philosopher of phenomenology and a disciple of Husserl (Smith et al., 2009). He was the “forerunner in conceiving of the lived body as the center of the three main dimensions of human experience” (Fusar-Poli & Stanghellini, 2009, p. 92) and suggests that we will always see ourselves as “different from anything else in the world” (Smith et al., 2009, p. 18). Smith et al. (2009) claimed that “Sarte extends the project of existential phenomenology” (p. 19) and added to the importance of self as “an ongoing project to be unfurled” (p. 20). He emphasized the complexity of self that has to be understood “within the context of the individual life, the biographical history and the social climate” (Smith et al., 2009, p. 20). Furthermore, as in this study, Sartre saw complexity in individual lives, history, and the individual as well as the distinct climate the individual is immersed in (Smith et al., 2009, p. 20).

The Interpretative Phenomenology Analysis (IPA) method helped make sense of all individual experiences of the participants of this study. Smith (2011) reports that IPA is really about trying to ‘experience close’ rather than ‘experience far’ ” (p. 10). Phenomenology is “a
philosophical approach to the study of experience . . . it provides us with a rich source of ideas about how to examine and comprehend lived experience” (Smith et al., 2009, p. 11). In summarizing the IPA approach Smith et al. (2009) wrote, “in IPA research, our attempts to understand other people’s relationship to the world are necessarily interpretative, and will focus upon their attempts to make meanings out of their activities and to the things happening to them” (p. 21).

The interview process necessitated in the IPA method requires “in-depth, semi structured interviewing . . . conducted on small sample sizes” (Smith, 2011, p. 10). In analyzing what makes an effective IPA research Smith (2011) described some of the qualities of the exemplary research as follows: “this paper has an unusual and specific sample, and strong data . . . The narrative is interesting, the paper very well written and the overall effect enlightening” (p. 22). Regarding another paper, he remarked that “each presented theme is supported with extracts from many interviewees and accompanied with sensitive analysis” (p. 23). Such results supported a personal quest for this method of study.

Participants

The population for this study included public school administrators who work in Massachusetts Public K-12 schools in a variety of supervisory roles. Smith (2011) describes an IPA study as one which “requires an intensive qualitative analysis of detailed personal accounts derived from participants. The most common method of data collection is in-depth, semi-structured interviewing” (p. 10).

The IPA method requires a purposeful sampling. “Participants are selected on the basis that they can grant access to a particular perspective on the phenomena under study. That is, they ‘represent’ a perspective, rather than a population” (Smith et al., 2009, p. 49). For this study the
participants included: school principals, assistant principals, and central office administrators, who are responsible for all classroom instruction and assessment. According to Smith et al. (2009) this constitutes a purposeful homogeneous sampling and makes the study more relevant. “By making the groups as uniform as possible . . . one can then examine in detail psychological variability within the group, by analyzing the pattern of convergence which arises” (p. 50).

Participation was voluntary and open to K-12 administrators and central office leaders in primarily rural/suburban districts. Twelve administrators from six different districts were initially contacted by mail. Nine individuals from five different districts responded affirmatively within a week by returning a prepared opt-in response letter. When contacting them to schedule interviews, two of these potential participants declined due to unexpected personal conflicts, leaving a total of seven participants to interview from five districts. All interviews were conducted at a site that was free of distractions and the participant was comfortable with. The districts spanned the geography of the state. Three interviews were conducted at the work site of the participants at their request. The remainder of the interviews were conducted off site at an agreed upon, confidential location.

The seven individuals who were able to participate in this research, represented numerous positions in different levels of school and district administrative capacities. They encompassed many years of experience in classroom observations and evaluations and represented five distinct districts. This sampling provided this research with experts in the field who have done years of intense work in many different classrooms, districts, and building levels as observers, coaches, and evaluators, informing this study with a depth of valuable practice and data.

**Sample size.** This sample size began with the recruitment of 12 individuals to obtain a minimum of 6, to provide this study with sufficient data to collect transcripts, codes and to make
connections for emerging themes. While carefully coding and transcribing the information in “rich, thick description” (Creswell, 2005, p. 191) for accuracy, Smith et al. (2009) advised that three to six participants is a “reasonable size” that “should provide sufficient cases for the development of meaningful points of similarity and difference between participants, but not so many that one is in danger of being overwhelmed by the amount of data generated” (p. 51).

Morrow (2005) reports on the importance of quality of data, not numbers: “concerns about adequacy of data have centered on . . . numbers of interview participants . . . as if sheer numbers are an assurance of the quality of the findings (p. 255). In fact, “what is far more important than sample size are sampling procedures; quality, length, and depth of interview data” (Morrow, 2005, p. 255). The final sample size remained at seven with representation of five distinct districts and a solid sampling from all grade clusters as well as central offices.

**Recruitment and access.** Over the past twenty years, I have worked collaboratively with a variety of administrators and teachers. No longer employed by any district, I had little reason to suspect that volunteers would not be honest and open to this study. Any hesitation with any participant would have resulted in an immediate volunteer replacement. All participants were assured of confidentiality (all personal, identifying information and locations) and access to any outcomes that may support them in their own professional life and work.

**Ethical Considerations and Protection of Human Subjects**

When granting approval of a study, the Institutional Review Board (IRB) at Northeastern University demands the minimizing of any risk to the participants. Other than time, interviews did not involve any physical or mental risk to the participants and were so informed. Finally, all participants signed forms, which include the following assurances (see Appendix D):

- Limited risk involved
- Purpose and possible benefits of research
- IRB and NIH protocols and guidelines would be followed
- Research was voluntary; opt-out available (see also Appendix A)
- Names and locations confidential (pseudonyms assured)
- Upon completion, all recordings would be destroyed (some need to be kept for three years which will be secured until the time for shredding/destroying).

**Data Collection**

After an initial intake interview for consent and familiarization, participants were interviewed for a period of one and a half to two hours. Smith et al. (2009) advises that “IPA is best suited to one which will invite participants to offer a rich, detailed, first-person account of their experiences” (p. 56). Rich data is described as one in which “participants . . . have been granted an opportunity to tell their stories, to speak freely and reflectively, and to develop ideas and express their concerns at some length” (Smith et al., 2009, p. 56).

These interviews included open-ended questions (see Appendix B) designed to “provide depth and detail” (Rubin & Rubin, 2012, p. 132). Follow-up prepared and impromptu questions were also used to afford clarification and focus as needed. Rubin and Rubin (2012) describe follow-up questions as the “heart of interviewing” since they provide the “depth of understanding that is the hallmark of this approach to research” (p. 150). Following Creswell’s (2005) guidelines for open-ended questions, exploratory verbs were used to “convey the language of the emerging design . . . [to] describe the experience (e.g., phenomenology)” (pp. 129-130). Rubin and Rubin (2012) advised going beyond listening to get full understanding. “To get [such] depth and detail, responsive interviewers [should] structure an interview around three
types of linked questions: **main questions, probes, and follow-up questions**” (p. 6). Rubin and Rubin (2012) also reported on the power of skilled listening:

> Qualitative interviewing requires intense listening, a respect for and curiosity about people’s experiences and perspectives, and the ability to ask about what is not yet understood. Qualitative interviewers listen to hear the meaning of what interviewees tell them. When they cannot figure out that meaning, they ask follow-up questions to gain clarity and precision. (p. 6)

To address the issue of personal bias in the phenomenological interview process, Bevan (2014) offered an approach to interviewing where the researcher is “required to abstain from the use of personal, knowledge, theory, or beliefs to become a perpetual beginner (Merleau-Ponty, 1962), [or] deliberate naiveté, in Kvale and Brinkmann’s (2009) terms” (p. 138). Smith et al. (2009) cautions that the “process should be seen as iterative: you may find that your ideas develop and change, both during the process, and then again after a pilot or first interview” (p. 60). The first interview was transcribed before proceeding in order to adjust for any unforeseen events as Smith (2009) advised, “use the transcript to review both your schedule and your interview strategies . . . Focus on what you would have ideally asked the participant after each of their utterances and compare this to what you did ask them” (p. 66). The transcribed data served to insure allegiance to the scripted questions and follow-up questions for the researcher.

**Data Storage**

All interviews were audio recorded and maintained on a computer drive that was password protected and locked. Recording and transcripts will be erased/destroyed once this process is completed. Participants were given pseudonyms and real names kept confidential at all
times, including all consent forms which will be secured for the required three years. At the conclusion of that time, they will be shredded.

Data Analysis

Details and descriptions of the experience supply the data to accurately convey the experience of the participants in the research—not the researcher. Phillips-Pula, Strunk and Pickler, (2011) recommended focusing information on the participants’ experiences as opposed to one’s own.

The researcher refrains from making suppositions and instead focuses on the topic freshly and naively with the results providing the basis for further reflection and research (Moustakas, 1994). The epoche process is used to identify and acknowledge a priori thoughts on the topic and helps to ensure that the researcher’s preconceived biases are not allowed to overshadow the essential descriptions. (p. 68)

Interviews were recorded and transcribed using an on-line service, Rev.com that enabled recording directly via a phone app. The phone was placed between the interviewer and the participant, picking up the entire conversation accurately and completely. The recording was saved and downloaded to the service immediately. The service transcribed the audio recordings quite accurately into Word documents within 10-24 hours for all seven interviews.

Phillips-Pula et al. (2011) describes the next step, which occurred as the “transcendental phenomenological reduction” (p. 68). Statements were analyzed for parallel thought as well as discordant ones, “the product of this reduction is the formation of textural and structural descriptions” (Phillips-Pula et al., 2011, p. 68). In this step, Maxwell (2005) emphasizes the importance of careful reading and listening to all transcripts. He suggests that the researcher “write notes and memos on what you see or hear in your data, and develop tentative ideas about
categories and relationships” (p. 96). Meaning is assembled from individual conversations and statements, and identifying themes. What was once unique to one, becomes the reality of the whole (Phillips-Pula, et al., 2011):

The final step involves constructing meanings and essences by differentiating the multiple realities expressed by study participants and integrating textural and structural descriptions from the essence of what is known individually to the essence of what is known by all (Moerer-Urdahl & Creswell, 2004). (p. 68)

Smith (2011) cites the need to explore diverse as well as similar findings, “the best IPA studies are concerned with the balance of convergence and divergence within the sample, not only presenting both the shared themes but also pointing to the particular way in which these themes play out for individuals” (p. 10). Smith et al. (2009) mention the subjectivity of the process and that it is not “fixed” (p. 81) until the writing is finished. He outlined steps to follow for this analysis, which was especially valuable for a novice:

Step 1: Reading and re-reading
Step 2: Initial noting
Step 3: Developing emergent themes
Step 4: Searching for connections across emergent themes
Step 5: Moving to the next case
Step 6: Looking for patterns across cases (pp. 82-101)

Coding

Codes were first developed and based on the questions asked and the answers given by participants. The coding process “involves taking test data . . . and labeling those categories with a term . . . often a term based in the actual language of the participant (called an in vivo term)”
(Creswell, 2009, p. 186). Rabinovich and Kacen (2010) describes this as the first stage of analysis when “researchers break down text into its component parts, whereas at the second, they reassemble them” (p. 699). They further designate two levels at this second stage, the “first-order coding, during which the qualitative researcher maps the meaning units and assigns them to categories” and “second-order coding, in which the researcher compares categories and assesses relationships among them” (Rabinovich & Kacen, 2010, p. 700).

Maxwell (2005) points out that these are “categories that could usually have been anticipated” and “issues that you establish prior to your interviews” (p. 97). The interview process indicated the prevailing themes or topics to group for first order coding. These become the “bins” (Maxwell, 2005, p. 97) for further sorting. When choosing what basic coding method to begin with, Saldaña (2013) recommends being “open to changing them if they are generating substantive discoveries” (p. 48). Of the four basic First Cycle Coding Methods, Saldaña (2013) describes, the “In Vivo, Initial, and/or Values Coding”, (p. 64) which became the most appropriate for the initial coding for this study. It was useful for “interview transcripts as a method of attuning to participant language, perspectives and worldviews” (Saldaña, 2013, p. 64). This coding method assisted in “honor[ing] voices (Saldaña, 2013, p. 64) of the participants and to “capture the actual and conceptual conflicts within, among, and between participants” (Saldaña, 2013, p. 64).

The second level of sorting most pertinent to this research can be accessed through Second Cycle Pattern Coding, which helped to categorize the first cycle of coding into themes, concepts or theories (Saldaña, 2013, p. 207). Saldaña explained that Pattern Codes “not only organize the corpus but attempt to attribute meaning to that organization” (p. 209).
Creswell (2009) also refers to this technique as a combination of predetermined and emerging codes” (p. 187). There were also codes for outliers and other important information (Creswell, 2009, p. 186). Finally, codes were abbreviated, alphabetized and the actual meaning of the data determined (Creswell, 2009), “What were the lessons learned? . . . It can also suggest new questions that need to be asked” (p. 189).

Validity and Trustworthiness

In order to ensure validity, Smith et al. (2009) reports on the importance of “a demonstration of sensitivity to commitment, context and “rigour [sic] . . . the thoroughness of the study” (p.181). Sensitivity requires, “close awareness of the interview process . . . showing empathy, putting the participant at ease” (Smith et al., 2009, p.180). Morrow (2005), in referencing quality and trustworthiness, regards certain attributes “indispensable regardless of the research paradigm, such as sufficiency of and immersion in the data, attention to subjectivity and reflexivity, adequacy of data, and issues related to interpretation and presentation” (p. 250). (Smith et al. 2009) added that the real indication of sensitivity and commitment is the final product:

So a good IPA study will always have a considerable number of verbatim extracts from the participants’ material to support the argument being made, thus giving the participants a voice in the project and allowing the reader to check the interpretations being made. And good IPA is written carefully, making claims appropriate to the sample which has been analysed [sic]. (pp. 180-181)

Smith (2011) refers to rigor as the diligence of the study, the interviews, and the analytical process. Smith et al. (2009) advises that “one needs to be careful to keep the balance between closeness and separateness, to be consistent in one’s probing, picking up on important
cues from the participant and digging deeper” (p. 181). Transparency and coherency in the process is imperative in crafting a coherent study (Smith et al., 2009, p. 182). Lastly, Smith et al. (2009) remind us that this research must have something important to convey: “however well a piece of research is conducted, a test of its real validity lies in whether it tells the reader something interesting, important or useful” (p. 183).

It is not possible to eliminate a researcher’s background, professional and personal experience. Maxwell (2005) describes this as the researcher’s “lens” (p. 108) and places the burden on the writer to explain “possible biases and how you will deal with these” (p. 108). Creswell (2005) advises the researcher to include in their conclusions, “how their interpretation of the findings is shaped by their background” and “any negative or discrepant information that runs counter to the themes” (p. 192). Attempting to eliminate personal reference is referred to as bracketing in Smith et al. (2009). It was first used by Husserl in order “to consider the consequences of our taken-for-granted ways of living in the familiar, everyday world of objects. We need to ‘bracket’ . . . in order to concentrate on our perception of that world” (Smith et al., 2009, p. 13).

Smith et al. (2009) cautions that IPA research be evaluated differently for validity than quantitative work since “the danger . . . is that the assessment procedures become simplistic and prescriptive and the more subtle features of qualitative work get missed” (p. 179). Checking back to ensure the accuracy of findings at the conclusion of the study, or “member checking” assisted in determining “the accuracy to the qualitative findings” by “taking the final report or specific findings back to the participants” (Creswell, 2005, p. 191). Using a manageable number of participants, coding, revisiting the data frequently, reporting findings, and allowing for the
participants’ final response, supported the overall validity of the meaning and interpretations of the transcripts.

**Transferability**

The interviews provided rich text, accounts, and scenarios to provide the researcher data for transferability. The effectiveness of the study should enable the interested reader to make “links between the analysis in an IPA study, their own personal and professional experience, and the claims in the extant literature” (Smith et al., 2009, p. 51). Smith et al. (2009) refers to this as “theoretical transferability rather than empirical generalizability” which “enable readers to evaluate its transferability to persons in contexts which are more, or less, similar” (p. 51).

This study is pertinent as a quest to support administrators as they, in turn, work to support classroom instruction. Hopefully this research will illustrate the need for improved and more accessible professional development in formative assessment for both teachers and administrators in the Commonwealth. Furthermore, this may be an area of need or at least further inquiry for preparation of potential candidates on their road to become certified in teaching and administration.

**Limitations**

One immediately apparent limitation to this study was the demographics. Although the data was derived from a broad spectrum of districts, school levels, and professionals, most of the home districts of the participants, based on accessibility and familiarity, are from suburban or more rural locations. These findings, however, should have similar implications to all classrooms and school buildings. Locke, Silverman, and Spirduso (2010) cautioned that “virtually all studies present at least some shortcomings that are a consequence of practical compromises made by the investigator” (p. 144). Although there was male and female representation, there was no diversity
in ethnicity and little variety in geographic demographics. All administrators currently work in either rural or suburban locations. One or two did, however, have previous urban experience. The economic situations of each district did add some level of differentiation.

**Conclusion**

Maxwell’s (2005) “‘tacking’ back and forth” (p. 3) was the essence of the process of this qualitative research. The IPA research approach admirably suited this quest as it sought to inform about the lived experiences, successes, and failures of administrators on the existence, quality and value of formative questioning and dialogue in the classroom. Furthermore, in areas of success and sustainability, it may shed information that will be helpful for others.

This relatively small number of participants preserved the individuality and humanity of those involved (Maxwell, 2005) while clarifying those events and behaviors they have experienced and importantly, “how their understanding influences their behavior” (Creswell, 2005, p. 22). As this research was open for comments, questioning, and suggestions from participants, the researcher become “a coinvestigator, rather than as an expert scientist” (Creswell, 2009, p. 102). Hopefully, this study concluded with some answers and “mutual understandings” (Creswell, 2009, p. 102), while raising additional questions useful to future studies.
Chapter Four: Results

Introduction

School administrators are charged with the responsibility to support teaching and learning. Classroom teachers need on-going constructive feedback and resources to improve instruction. One way to fulfill these two requirements is through the use and support of diagnostic questioning techniques that have been shown to promote student understanding and mastery of content (Black & Wiliam, 1998).

This qualitative study sought to understand the lived experiences of school administrators with formative assessment and, in particular, classroom diagnostic questioning and how administrators could best provide feedback and support to teachers towards the end of improving student success. This Interpretative Phenomenological Analysis (IPA) also sought to answer the following research question: What are the lived experiences of school administrators who regularly provide feedback and support to teachers in the regular use of diagnostic formative assessments in their classrooms? The IPA qualitative research model matches the goals of this study by capturing the lived experiences of school administrators in their very demanding and complex environment. Smith et al. (2009) advises that this model is useful in helping researchers “plan for, and engage with, the messy chaos of the lived world” (p. 55).

Organization of Chapter Four

Chapter four begins by introducing the participants in this study. Each participant’s ideas, values, challenges, and hopes were captured. This is followed by a presentation of the themes that emerged from the analysis of their transcribed interviews using the steps outlined in chapter three and includes direct quotations from the participant that help to illustrate these findings. The chapter ends with a paragraph summarizing the findings.
Participants

Participants for this study were volunteers who responded positively to a letter of introduction and a brief description of the focus of the study. Twelve known administrators from six different districts were initially contacted and nine individuals immediately responded affirmatively. When contacting them to schedule the interview, two of these potential participants declined.

The seven remaining individuals were demographically diverse, representing five distinct districts and K-12 administrative positions. Participants held positions ranging from curriculum coordinators to superintendents, and included building principals and assistant principals at elementary, middle, and high school levels. The newest administrator had four years of experience observing teaching and learning while the most experienced had over twenty years of experience. The depth and breadth of experience incorporated over 90 years of observing classrooms from kindergarten to twelfth grade. Most of their collective professional experience was in rural or suburban schools; some had previous urban experience. The economic distribution of the collective districts ranged from affluent to a fairly high poverty level. Finally, the academic successes of their current and past districts (as measured by school performance levels by the Commonwealth of Massachusetts) represented all levels from low (Level 4) to the highest (Level 1).

Depending upon the order of their scheduled interviews, the administrators were numbered Participant #1 through Participant #7 and given pseudonyms to protect their identity. District names were kept confidential. This purposeful sampling of these individuals represented a group of well-versed and experienced administrators in observing and analyzing classroom instruction and assessment from different perspectives. Smith et al. (2009) noted that this...
selection allows “access to a particular perspective on the phenomena under study” (p. 49). They shared commonality by having been teachers and then administrators for varying times and at a variety of sites. With that homogeneity came the diversity of experiences created by this wide range of years of experience in many different districts, at many levels.

Participants had administrative experience in other districts as well. These seven participants had a cumulative district experience that represented a minimum of 20 different districts. In addition, they also represented a variety of school levels: high school experience, middle school, elementary school, and district level experience. Many had been administrators at multiple levels (see Appendix E).

Although three additional males were recruited, only two remained in the final sample group of seven. The economic diversity of the participants’ district populations, past and present, represented affluent to rural poor. They currently represented three levels of the state accountability profiles (MA DESE, 2015) from level one to level three schools. However, as noted, two individuals had previous experience with Level 4 schools.

**Participant #1.** Josh, had a non-traditional route to teaching, having first obtained his Bachelor’s degree in accounting. Switching to education, he took a fast track, taking fewer classes in pedagogy. Josh obtained his teaching license via a state approved panel review process. After several years of teaching and obtaining his administrative license, he became a high school assistant principal. He is now completing his fourth year as an assistant principal and will be starting the next school year in the top leadership position at another high school in the state. Josh is “in the classroom quite a bit” since he evaluates 22 teachers in several departments, many requiring 6-8 visits per year. Previous to this year, he was responsible for regular observations of more than 30 teachers in the school.
**Participant #2.** Dorothy, is completing her 13th year as an administrator, both as elementary and middle school principal. Dorothy is in classrooms daily for both formal and informal visits. She expressed the need to be in the classrooms daily to “know what’s going on, [to] get to know the students, and make sure you know what’s happening in your school.” Dorothy has a deep interest and background in formative assessment due to her on-going work with differentiated instruction. She acknowledged that “it became apparent to me that teachers needed to know where and what their students needed in order to differentiate instruction . . . it seemed like we were constantly doing summative assessments . . . but we didn’t do formative assessments.”

**Participant #3.** Madeline, began her administrative experience twenty years ago as a curriculum coordinator where she was tasked with visiting classrooms and helping to refine teaching strategies. She has been in “hundreds” of classrooms as an administrator and has served primarily in district-wide positions. Currently serving as a high school principal, Madeline expressed the need to focus on developing the “passions of our students” to expand achievement and help to “overcome tremendous obstacles” that students may encounter. Curriculum should also be “broad, rich, and rigorous, and [must] foster an opportunity for them to be creative and to problem solve, to think critically”.

**Participant #4.** George, has been an administrator for ten years at both the high school and middle school levels. This is his 28th year in education and he prides himself on “being in the classroom every single day and . . . watching what people do and how they do it”. George stresses the need to create a “culture of sharing and picking away at the wall of isolation between teachers”. He models this culture by getting out of his office and “walking the walk”. He stressed the importance of the middle level to prepare students for today’s high school, not “a high school
that no longer exists”. To support that philosophy, George has orchestrated visits for his teachers to high school classrooms. “The feedback that’s been coming back down has been incredible and very powerful.”

**Participant #5.** Marge, currently serves in a Central Office position but had been a middle and high school administrator for 13 years and a curriculum director for two. Still in classrooms daily, she is certain that she has been “in hundreds and thousands of classrooms . . . really”. As the superintendent of a small district, Marge makes an effort to be in classrooms almost every day. “This week I’ve been in every classroom in the high school, every classroom in the elementary school . . . I make an effort.” Marge struggles with the isolation of a rural district with numerous needs and challenges: “I don’t have an assistant. I’m the curriculum director, the PD coordinator”. She leans heavily on her principals “in order to move people forward…. they’re in the classrooms more than I am and they see what the need is for them”.

**Participant #6.** Vicki, has been in classrooms primarily in a non-evaluative administrative role. Her district-wide positions have spanned 13 years and she has observed hundreds of classrooms from K-12. As a central office administrator, her role has been “to support building administrators . . . I’ve taken [on] the role of a coach, more so with new educators.” Vicki has also “coached classroom teachers around the use of assessments”. She stressed the need to keep current with changes in education, especially with regards to data, “education has changed and everything is much more data driven. It’s educating the teachers, as well as supporting them, to take the challenge to use that data to drive their instruction”.

**Participant #7.** Pam has had both urban and suburban educational experience as an administrator for over 12 years. The first half of her experience was as a clinical director with older children in a more specialized setting. The second half of her practice has been with
elementary students where she has served as principal at two schools—one urban and currently in a rural/suburban district. Now in her sixth year in this more traditional school setting, she has found the focus to be “more instructional and more academic”. She is often present in classrooms “dealing with the instructional piece versus the socioemotional piece in the prior years”. She loves the elementary level where “we could make a difference at the early ages . . . They’re just little sponges, and there’s so much you could do, where you could get them nice and early”.

Initial Themes

Two kinds of themes emerged with the analysis of the interview data including initial themes and superordinate themes. The initial themes included: providing support for assessment; finding time and resources; setting priorities and focus; observing student-centered classrooms; using data to support instruction; and supporting teacher collaboration.

Providing support for assessment. Numerous comments were offered by all participants on supporting teachers in the use of informal classroom assessment as data to inform instruction. Dorothy enthused on the necessity of supporting this type of formative assessment and its inherent value: “it’s feedback for learning . . . it’s to help them grow as a teacher so to give them some constructive feedback so they can differentiate their instruction to meet the needs of the learner.” Josh stressed the need for teachers to slow down: “I think you’ve got to get teachers to reflect and you have to get them to think about pausing…Taking the pressure off the teachers is a strategy that I’ve done…Let’s not try to focus on coverage, but let’s focus on getting kids to understand.” Madeline was also concerned that educators were moving too fast: “we don’t push kids to have deeper understanding”. She encouraged her teachers by modeling open-ended questions and dialogue about their classroom practices: “[I] ask questions and try to
do less of the talking . . . feedback has to be individualized.” George used positive reinforcement to encourage teachers, often pairing them with a peer and “using [their] colleagues as a resource”. Madeline did not observe significant use of formative assessment in her current district and felt it needed to be more of a focus.

Vicki, a district-wide administrator, had actually provided significant professional development in formative assessment for her elementary teachers “to develop higher level questions in advance, rather than just coming up with random questions” and seen some positive results. Pam, coming from an urban district where it was part of an initiative, did not observe formative assessment quite as much in her current school and felt her teachers still needed to get more comfortable with “letting kids explore.”

**Finding time and resources.** All participants had significant complaints about the shortage of time and resources for their work. The conversations surrounded their frustrations with supporting classroom learning and in particular, questioning for understanding. George reported on his annual goals: “my great pie-in-the-sky goal this year was to meet with the teachers on a daily basis . . . so we could talk about lessons and educating kids. That was just a beautiful pipe dream!” Now a district leader in an isolated community, Marge shared a related frustration: “we have no big colleges or universities around here . . . we’re insulated . . . there’s no money to bring in these high powered presenters . . . even [name of well-known professional development provider, redacted], we could [only] afford him for three sessions.” Vicki has spent her last decade finding grants and resources for professional development. “All of the PD in the later years was all competitive grant funded . . . There was no local funding for PD.” Sadly, PD for the district administrators was last on the list. “Our individual contracts had a clause in there that they would give us $5,000 per year for our own individual PD, but there was a clause, if
monies were available. Monies were never available”. Josh spoke to the need for time—time for teachers and time for administrators to work collegially, conduct peer observations, and for coaching sessions. “If I had 15 minutes to sit down with that teacher and give them real, pointed feedback and talk[ing] about formative assessments . . . Time is what we need.”

**Setting priorities and focus.** Making formative assessment a priority was essential in order for sustained change to occur. Administrators spoke of their experiences with multiple initiatives and the poor results of that experience. Many noted the need for the culture to change from the top of the organization. “Everyone needs to be on the same page”, Vicki asserted. “We learned that you should only focus on one or two initiatives and develop a coaching plan along with your implementation plan. Yes, we provided PD for the principals and district administrators . . . as well.” Dorothy observed the need for principals to be more involved in PD, which shows “we believe in this, we’re in it all together and we’re going to move in this direction.” Pam supported that concept and said that administrators must “set it as a priority and talk about it, [or] it’s not going to happen, it’s not going to change”. Madeline summed it up, “That’s where leadership can really have a very, I think, strong influence. It has to go all the way up the chain, because even at the building level, a principal can only do so much if the superintendent is not behind him or her or is a roadblock. It’s got to be all the way up the ladder”.

**Observing student-centered classrooms.** Participants all described an ideal student-centered classroom. Pam spoke of an ideal classroom as “one that’s definitely interactive and engaging, where you’re going to hear the children learning and talking about what they’re learning . . . more of that student talk classroom . . . conversation happening and questioning.” Dorothy shared her view where the teacher is “continually looking at student work, talking to
students about where they are and what they’re doing well and where they need to put in more work . . . It’s continually helping that student to grow and make progress towards whatever goal they might have.” Marge envisioned a classroom where “the teacher is questioning kids, giving them the opportunity to talk with one another, doing frequent check-ins . . . not lecture. Kids are, I would say, discovering information.” George was in agreement that “kids’ understanding [must be] peppered with lots of questions”. No administrator envisioned a successful classroom that was centered on a lecture driven format.

Using data to inform instruction. Josh acknowledged that teachers: “don’t have the data to say that the kids actually learned from the classroom practice.” Pam felt that her previous, Level 4 district had capitalized on formative assessment since, “[it] was a turnover district, so we really needed to make sure kids were getting what they needed, so there was a lot of focus on formative at that point, the questioning, higher order questioning, on having that engagement level at the classroom level where they constantly check for understanding, so that has been a real huge focus back at the previous district as well because of the need to improve scores.” Marge stressed the need to use data even before teaching. “We tell people all the time, if . . . the kids know half of what you are going to teach then that gives you the information you need to start at a different point.” Vicki pointed out the need to use the data properly. “I think lots of times that teachers have the data, but they really don’t know how to use the data to drive their instruction”. Finally George summed up the importance of formative assessment: “if you don’t have formative assessments embedded in your lessons, then you’re never going to know what the kids know. You’re pacing your lesson design . . . you’re just covering content to cover content sake. That’s not okay.”
Honoring teacher collaboration. Marge declared “I don’t think teachers get enough time to be together to talk things out” reflecting a common concern of the administrators which also supported a belief in teachers as valuable peers. George felt he could use teachers to assist other struggling teachers, “I can just use the powerful people in my building that are great exemplars”. Madeline, a strong proponent of professional development, also felt that teachers don’t “get enough opportunities to be together, talk things out. In addition, she articulated her belief that teachers needed to go out and see other places. “Getting out to other schools . . . and then come back and share it with one another. I think it’s always better received within your own house.” Probably one of the best examples of teacher collaboration was in Josh’s school where teachers and administration collectively adopted a Professional Learning Team (PLT) initiative for three different areas of need (including assessment). Josh explained this model “where it’s teacher driven, so it’s teacher led. Each PLT is led by a teacher . . . We find teachers are more likely to learn best from teachers and we want to take the evaluation stigma . . . away”.

These initial themes allowed one to “transport readers to the setting and give the discussion an element of shared experiences” (Creswell, 2009, pp. 191-192). From the voices of the participants came many hopes, frustrations, and findings that were further distilled into broader, yet similar categories that aided in the “development of theoretical concepts” (Maxwell, 2005, p. 96) and “enhance[d] the validity of the findings of a large corpus” (Smith, 2009, p. 107).

Super-ordinate Themes

Super-ordinate themes emerged from the related items in the initial findings. The amount of data was reduced “whilst maintaining the complexity, in terms of mapping the interrelationships, connections and patterns between exploratory notes” (Smith, 2009, p. 91). By reducing all of the data into themes that captured “not only the participant’s original words and
thoughts but also the analyst’s interpretation” (Smith et al., 2009, p. 92), a major thematic synthesis resulted, creating super-ordinate themes. Smith et al. (2009) refers to a super-ordinate theme as a “construct which usually applies to each participant within a corpus but which can be manifest in different ways within the cases” (p. 166). The following super-ordinate themes included: understanding and utilizing data; discovering time and resources; acquiring PD for student-centered, data-driven classrooms; and administrators supporting their teachers.

**Understanding and utilizing data.** As useful data for classroom instruction, questioning for understanding was perceived as valuable to all administrators interviewed. The use of this type of formative assessment was observable by the administrators in many classrooms but difficult for them to discern whether, when used appropriately, it changed classroom instruction that enhanced student learning.

At the high school level, Josh reported that observing questioning for understanding was dependent on the department, “I think it’s natural for English teachers to use formative assessments”. However, going into the more traditional mathematics department, “where teachers tend to do more delivering of information . . . they don’t have the data to say that the kids actually learned from the classroom practice . . . so they weren’t able to alter instruction during a lesson, so that they pretty much don’t know if students understood what was being taught until a quiz”. Reporting that he observes formative assessments regularly, he reflected on its improper use that doesn’t yield meaningful data. He noted: “What good is a formative assessment if you’re not changing your instruction? . . . Looking at a teacher checking homework . . . just checking for completion, gives them [the kids] credit for doing the work and the effort, but it doesn’t actually give you data and information that is meaningful.” From a middle and elementary perspective, Dorothy claims to see formative assessment a little over 50% of her time
in classrooms, depending on “where you are and who you’re working with”. Having just changed to a new district, she found it to be “a new discussion . . . so I don’t find that formative assessment is something that people really use all the time”.

Pam also found questioning for understanding used more in her previous urban district that was faced with state intervention. It is not as prevalent in her current school. In the Kindergarten to grade two classes she observed formative assessment 20% to 30% and in the higher grades (third and fourth grade), probably 60-70% of the time. She thought it was difficult for some teachers who felt it is their job to control classroom discussion. George “saw it more at the middle school level than the high school”. He felt there was “more teacher talk at the high school” and middle school students would not be able to take a lecture-driven classroom. “Middle school kids have the energy of a nuclear bomb. You’ve got to corral that.” Madeline concurred that questioning for understanding was underutilized in classrooms and that as educators, we “don’t push back enough to really push kids to have deeper understanding to problem solve”.

In a district review by the state, Marge reported findings that indicated “low level questioning” was prevalent in her district. “We were asked to look at having higher order thinking skills as questioning techniques. I think if you look in our classrooms . . . you won’t see a lot of high level questioning. You see recall questions.” After providing significant professional development on higher order questioning techniques, Vicki felt the teachers were able to prepare higher level questions for their lessons, but still struggled with using the data to drive their instruction. However, when it was utilized correctly, Vicki felt there was evidence that summative assessment results actually improved.
Discovering time and resources. Time to improve instruction, time for reflection, discussion, collaboration and the resources needed for continuous adult learning made its way into many discussions with all participants. Pam summed it up concisely: “usually time and money are the two things you don’t have much of”. The amount of time used to prepare for standardized testing had George incredulous. “We’re losing three weeks of instruction total because of PARCC [Partnership for Assessment of Readiness for College and Careers]!” According to George, as the testing loomed closer teachers felt enormous pressure to cover all the standards with the limited amount of remaining time, “there’s been a lot of angst lately with the schedule”. Also pulled away from what he “was hired to do”, George has spent two weeks scheduling students into classrooms so they can use the computer based form of the test as decided by the school committee. Commenting on the need “to teach all of this curriculum” because of testing, George felt “inquiry based teaching” was gone. “I think we need to stop the great testing era of our world”. Although Madeline agreed there needs to be high standards for the curriculum that have “helped some places up their game”, she concurred that there was a deficit in resources and too many outside pressures: “twenty-five years ago . . . teachers had a lot more freedom about creating and developing different types of projects and things. They weren’t under this time crunch . . . all the mandates”.

Many participants spoke of the need for a reliable revenue source for professional development and subsidized time for teachers to collaborate. As a whole, the administrators were more concerned that their teachers have more of this time and inducement than themselves. Not uncommon to other participants, Vicki spoke to recent years where “the only PD that was brought into the district was offered through grants. There was no local funding for PD”. “Administrator PD was really last on the list. In fact our individual contracts had a clause in there
that they would give us $5,000 per year for our own individual PD, but there was a clause, if monies were available. Monies were never available.” Located in a rural, economically challenged district, Marge also spoke to isolation and financial constraints: “the grant that is earmarked for PD is “less than $25,000” and to bring in the one literacy program she needs will cost her $30,000. In a recent survey, teachers themselves reported the lack of “focused and sustained PD, it’s a one and done”.

Josh spoke of the additional time he needed to better support teachers to improve instruction. “[If] I had 15 minutes to sit down with that teacher and give them real, pointed feedback . . . I think time is what we need. Which means you need more administrators doing evaluations.” He then focused on teachers and their need to “watch other teachers, which means teachers need time.” Beyond their prep period, Josh advocated for paid time for teachers to “watch other teachers teach a lesson and gather feedback . . . to get compensated . . . which to me is worth it”. Madeline summed up the need for time and resources to improve instruction, use data correctly, and to provide support for teachers and administrators: “that’s the bottom line, it depends on funding”.

**Acquiring PD for student-centered, data-driven classrooms.** PD for improved use of formative assessment, questioning for understanding, must become a priority in order for any substantive change to occur. Training in pre-service may reveal a gap in this area of assessment. One administrator has three fairly new teachers, trained at different universities with little experience in any formative assessment. “Formative assessment is not part of their repertoire. I think there’s a lot of focus on the book.” PD on this topic may also be scarce as Vicki reports: “in our search to find a PD provider, it was very challenging . . . We found providers that would
give you PD around analyzing your data . . . [but not] how do you use the data.” She felt it was “a needed area of focus for PD”.

**Prioritizing professional development.** All participants mentioned the need for any instructional change to be focused, prioritized, and supported by the district in order for it to be sustained and successful. Vicki expanded on this topic, expressing the need to limit initiatives. “I can say this with experience . . . we had so many initiatives going on that I think educators were overwhelmed as well as ourselves . . . In later years . . . we honed down to one or two initiatives a year . . . we saw greater change, because teachers had the time to focus”. . . Pam supports that focused approach, “you have to set it as a priority and then have follow-up and come back and talk about it, make mistakes, try it again . . . not giving up”. She added the need for continuous follow-up by the principal, “it’s not just we’re going to talk about it once, we’re going to talk about it throughout the year . . . We’re going to ask you to come back with some evidence or come back with some feedback . . . to look at the data. Is it impacting?”

Dorothy noted the need for the PD on any formative assessment to be in conjunction with differentiated instruction because “what do you do with the formative assessment once you have it?” She supports the need for follow-up suggesting the need for coaching, discussion, and PD becoming “a part of the culture”.

Finally, Madeline summed up the need to limit choices and focus on one or two initiatives or it becomes “overwhelming” and then “nothing gets implemented. It’s kind of like with your microwave. It does a bazillion things and really all you need to do is know how to hit the popcorn button”.

**Procuring PD for teachers.** Teachers need PD that is focused, prioritized and useful in their classrooms. They also need on-going support, coaching, and the ability to take risk without
fear. They need time for reflection and collaboration. All of the thoughts and concerns came from administrators who talked of their teachers in caring and understanding language. Josh reports he tries to take the “pressure off the teachers” when he coaches them to not focus “on coverage, but let’s focus on getting kids to understand”. Many participants, like Josh believe that “peer observations are a great form of professional development” as well as professional learning communities that are teacher driven. “Each PLT [Professional Learning Team] is led by a teacher . . . not a curriculum coordinator . . . we want teacher leadership. Then an administrator is actually just a member of the team . . . we take a step back”. He summarized this teacher driven approach, “we find that teachers are more likely to learn best from teachers and we want to take the evaluation stigma . . . away”. George weighed in: “You have to create a culture of sharing” and remove the “wall of isolation between teachers”.

Dorothy reinforced the idea of coaching to assist teacher work on formative assessment with positive reinforcements “like you would with the student”. A new administrator at this school, Dorothy was very conscious that the teachers had recently had many leadership changes, “I am number six, I think, principal in something like five years. What I’m seeing now is people settling down, people feeling at ease and . . . really in a good space. I think they’re ready to move forward . . . I think they’re in a good place right now”.

Marge supported that need to build trust with teachers, even her outside providers who “develop[s] a relationship with the teachers”. One provider she worked with established a leadership team of teachers who would check with teachers on the pace of the PD and help make decision about the trainings. In anticipating the loss of the building principal in the not too distant future, Marge felt the momentum will not be lost since “this initiative with this leadership team will continue because it is not dependent on him but on the team”. In some of the other
 district buildings, the principal is the professional development leader and “uses his faculty
time”. After making a presentation, he allows the teachers to go off in small groups for writing
curriculum, common lesson planning or assessments, “he is a facilitator of the PD” Marge
explained.

**Procuring PD for administrators.** With regard to PD for administrators, as Vicki noted,
“monies were never available”. Besides providing administrators with the latest research and
findings in education, administrators need and want to be part of the PD initiatives that teachers
are being exposed to. Vicki regards this as an important piece “so that they know what teachers
are learning and then what should the administrator be looking for in the classroom as evidence
of the PD that’s been implemented within the classroom”.

If we’re going to be modeling the PD, “we better know what we are talking about”
declared Madeline. She added that this is such an important part of leadership. “It has to go all
the way up the chain . . . a principal can only do so much if the superintendent is not behind him
or her or is a roadblock. It’s got to be all the way up the ladder”. Describing a technology
initiative in a previous district, all administrators were first given iPads and taught how to use
them. The superintendent surprised everyone on opening day by launching the tech initiative by
sending her avatar to present. “Then she came, but in other words, I’m going to model it but
here’s my avatar. This is what we’re exploring. We’re going to be using technology and of
course it made for a very light and funny thing. Huge hit, but it also sent a message”.

Pam explained the need to know what “we’re talking about” especially with the huge
responsibility on administrators to evaluate and “make judgments on our teachers”. She would
relish a place to meet with other administrators at her level from different districts. “I think
having other principals, a central place where other administrators are going to be at, so it
becomes a group of learners that are also having similar challenges . . . I like the idea of having follow-up as well, having additional support.” In a central office position, Marge would like to also like to have the opportunity to “bounce ideas off of people” with confidentiality being of utmost importance.

As far as specific training for administrators on questioning for understanding, most felt there was a lack of PD available for them on formative assessment. In addition, it was not part of their administrative programs. Dorothy admits she was self-taught after taking course work in differentiated instruction and realizing you “have to know where your kids are” in order to differentiate.

**Administrators supporting their teachers.** One final theme that wove throughout the administrators’ interviews revealed consistent concerns and sentiments of administrators as they work to support teaching and learning. Smith et al. (2009) reports that themes change as the writing process evolves. Themes also tended to “become richer or more illuminating” as the writing progressed (Smith et al., 2009, p. 110). The underlying commonality with all the participants, was the insightful thoughts and tireless efforts administrators make to support teachers to grow and become more successful with students. Even with the many stresses and demands of their own 12-18 hour days, their accounts reveal the care, respect, and concern for their teachers. This sentiment corresponds directly with the care and concern teachers exhibit for their own classroom full of children. When speaking of their teachers, administrators voiced the same challenges that teachers share about their students: garnering their trust and respect, empowering them with their own learning, positive reinforcement, supporting risk-taking, and their need for encouragement to grow and flourish. From Dorothy who feared that her teachers had experienced too many changes and she would “wait until they were in a good place” before
introducing new initiatives, to Pam who would first “talk about myself and where my weaknesses are” prior to coaching, this analogy was pervasive with all participants.

Administrators are today’s unsung heroes in education.

**Summary**

Questioning for understanding was perceived as a valuable instructional tool to all administrators interviewed. Although its use was observable in many classrooms, it was difficult for administrators to discern if it was always used skillfully to change classroom instruction to enhance student learning. When used correctly with proper PD, administrators thought it to be a valuable tool in improving learning when used in conjunction with differentiated instruction. One administrator also validated its use in improving summative assessments.

Time and resources brought up a considerable amount of anguish with the administrators interviewed. In order to improve teaching and learning, administrators (and teachers) need time: time for instruction, time for reflection, time for collaboration. In addition, they need reliable funding for on-going learning for all: teachers and administrators. Grant funding is usually unreliable and inadequate and is what most but not all districts depend on. In fact, one district had a modest line item earmarked for professional development. Another administrator, new to her current district, felt there was adequate funding for professionals development but as yet was not certain how this was supported.

PD for improved use of formative assessment, questioning for understanding, must become a focus in order for change to occur in this area. Training for pre-service educators and administrators appears inadequate in this area of assessment. It was reported by several participants that current PD, which often captures topics such as differentiated instruction, may
not contain much information on any classroom assessment such as questioning. More importantly, there seems to be a void on how to use informal questioning to change instruction.
Chapter Five: Discussion of Research Findings

Introduction

Questioning for understanding is a version of formative assessment that involves frequent, diagnostic questioning and teacher-student dialogue. The use of diagnostic questioning techniques by teachers in the classroom has been shown to help promote student understanding and mastery of content. However, this form of assessment is frequently overlooked or underutilized in classrooms due to time constraints and the simple fact that asking probing questions of students is rarely taught to pre-service teachers (Stiggins, 2002). Instructional leaders and school administrators have a responsibility to support their classroom teachers by providing constructive feedback buttressed with the supports necessary to improve instruction. If we could better understand what administrators need to support their teachers in mastering diagnostic questioning, we might be able to help more students succeed. Therefore, this qualitative study seeks to understand the lived experiences of school administrators with diagnostic questioning and how administrators can best provide feedback and supports to teachers towards the end of improving student success.

Organization

Chapter 5 summarizes the themes that emerged from this study and relates each of them back to current research literature and the theoretical literature initially introduced in Chapter 2. Implications for practice will be discussed as well as areas for future research and study. Limitations of this research will be offered prior to the conclusions of this chapter.

Summary of Themes

The super-ordinate themes that ultimately were extracted included:

A. Understanding and utilizing data
B. Discovering time and resources

C. Acquiring professional development (PD) for student-centered, data-driven classrooms

D. Administrators supporting their teachers.

**Summary of understanding and utilizing data.** As useful data for classroom instruction, questioning for understanding was perceived as valuable to all administrators interviewed. The use of this type of formative assessment was observable by the administrators in many classrooms but difficult for them to discern whether, when used appropriately, it significantly changed classroom instruction that enhanced student learning. One district had provided significant professional development on higher order questioning techniques but still struggled with using that data to drive instruction. However, when formative assessment was utilized correctly, this district representative felt there was evidence that summative assessment results actually improved.

**Summary of discovering time and resources.** Time and money are essential to improve instruction. Both teachers and administrators need time for reflection, discussion, and collaboration. A common lament among administrators was the amount of time lost to prepare for standardized testing. The logistics of scheduling the tests was a burden for administrators and instructional time for teachers was consumed by long testing phases. As the standardized assessments loomed closer teachers felt enormous pressure to superficially cover all standards with a limited amount of remaining classroom time.

Grants were the primary source of revenue for PD needs. Not only was that money found insignificant, it was deemed as an unreliable source for funding. Most district and building
leaders clamored for substantial fiscal support to conduct professional development that is current, research-based, and comprehensive, not “one and done”.

Dorothy, however, felt her new district had dedicated sufficient time and resources for PD that is shared by the entire district: “we have three full days in the summer . . . Then we’ve had two or three days during the year and several half days . . . [that] go until five in the afternoon.” She felt that the PD this district offered was “a great way of infusing that same knowledge within the entire district”.

Lastly, administrators just wanted to find more time in their day to support teachers to improve instruction. Besides the time-consuming schedule of a building administrator, the new complex evaluation system has heavily burdened administrators with additional paperwork and reporting. Several administrators advocated for teachers’ needs for compensated peer collaboration time, visits to other classrooms, and off-site visits to other districts.

**Summary of acquiring PD for student-centered, data-driven classrooms.** PD for improved use of formative assessment, questioning for understanding, must become a priority in order for any substantive change to occur. Training for pre-service educators, current teachers and administrators appears inadequate in this particular area of assessment. Available PD, which often captures topics such as differentiated instruction, may not contain ample information on classroom formative assessment topics. More importantly, there seems to be a lack of understanding on how to utilize informal questioning and other classroom data to change instruction.

One district had success forming teacher-led Professional Learning Communities (PLC’s) in different instructional areas, including assessments. The teacher-led group, with the administrator taking a back seat, resulted in a collegial work environment, followed by the
group’s report to the teaching staff as a whole. Combined with the correct training, coaching, and modeling, teachers sharing and working together on a dedicated, long-term objective was a major theme from the administrators interviewed. Teacher-led PD assisted in taking the cloud of administrative evaluation away from the process and in doing so administrators often found that “teachers learn best from teachers”. This finding supports the ZPD theory and the concept of the more capable peer (Vygotsky, 1978). Follow-up by informed administrators to observe positive changes in the classroom was also deemed to be important for successful implementation of initiatives.

Almost all administrators felt they could also benefit from more professional development if they had the time to take advantage of it. Generally, Marge felt that in her position, a district administrator, there was plenty of PD available but “you could be out of the building for days”. Pam, an elementary principal wished there was “a central place where other administrators . . . become[s] a group of learners that are also having similar challenges.”

Most administrators were self-taught about formative assessment. George did “a lot of reading and [kept] current on literature available to him”. Dorothy had taken courses on differentiated instruction but they “didn’t talk about formative assessment”. Josh has “watched videos” with administrators on observing instruction which included discussions on formative assessment but has had no specific training.

Finally, any instructional change must be focused, prioritized, and supported by the district in order for it to be sustained and successful as Madeline acknowledged, “it has to go all the way up the chain.”

**Administrators supporting their teachers.** A central refrain in the interview process reflected the limitless efforts administrators make to support teachers as they grow and become
more successful in each classroom. A clear analogy emerged between the classroom teacher shepherding his/her students and the administrators’ respect and regard in guiding their teachers. This ubiquitous theme of trust, respect and empowerment for teachers was omnipresent in all of the administrative interviews—a reality not often perceived in the educational community or by the general public.

The fictitious job advertisement Martineau (2011) created for school administrators was not far from the truth: endless responsibilities for staff, students, community outreach, high-performing students, and “if the test scores don’t rise high or fast enough—you’re fired” (p.53). These are just some of the challenges for administrators that require “courage, drive, resilience, tenacity and gravitas” (Webber et al., 2013, p. 252). I could not agree more.

Discussion of Findings in Relationship to the Literature

Understanding and utilizing data. Both historical and recent research supports the importance of classroom data collection and re-teaching (Black, 1998; Black & Wiliam, 2001; Bloom, 1980; Gardner, 1996; Piaget, 1950; Vygotsky, 1978) for improved student learning. Piaget’s (1964) developmental theory supports the advantages of on-going dialogue in the classroom and targeted instruction. Benjamin Bloom (1980) also wrote of the benefits of formative assessment and corrective instruction; he cited that the increase in learning was impressive. Howard Gardner (2014) listed the four “enemies of understanding”: “short answer assessments, text-test context, correct answer compromise, and pressures for coverage”.

Black and Wiliam (2001) confirmed the need for questioning imbedded in instruction and data-driven re-teaching: “discussions, in which pupils are led to talk about their understanding in their own ways, are important aids to improved knowledge and understanding” (p. 7). Further research by Nystrand et al. (2001) supported classroom dialogue and tied it to student success. In
their research, they “uncovered a strong and statistically significant association between student achievement and the extent to which classroom discourse moved away from recitation to genres of classroom discourse that recruited and highlighted student ideas and voices” (p. 139).

Li and Li (2008) found that the habitual analysis of classroom data, coupled with targeted teaching in areas of student confusion and misunderstanding could be important to correct student confusion and misconceptions. Ruiz-Primo (2011) supported the need for good questioning techniques in the classroom and referred to it as “assessment conversations” (p. 18). She found positive results from assessment conversations that “help teachers to continually acquire information about the level of their students’ understanding” (p. 17) and determines the instruction, now differentiated to “achieve the learning goals” (p. 17).

Both Bambrick-Santoyo (2007) and Chappius (2012) supported the idea of teacher as coach and provided examples of successful targeted diagnostics and intervention from the world of coaching that can translate to successful classroom intervention and re-teaching. Lemov (2010) spoke to the need for collecting data in an appropriate timeframe and compared the gathering of data via questioning to driving and the consequences of waiting until the summative assessment. “Good drivers check their mirrors every five seconds. They constantly need to know what’s happening around them because waiting for an accident to tell them they’re doing something wrong is a costly strategy” (p. 97).

Fordham (2006) cautioned not to presume that all teachers “automatically make the link between comprehension strategies and the instructional questions that inspire them” (p. 394). Heritage (2007) stressed the need for additional research to investigate why questioning for understanding is not systemic in classrooms and how administrators can be used to coach teachers for a successful and routine implementation.
Differentiated instruction completes the cycle for improved learning, initiated by formative classroom questioning and dialogue. Literature overwhelming supports the claim of the importance of appropriate questioning in the classroom to target confusions and misconceptions directly resulting in the need to differentiate instruction. (Tomlinson & McTighe, 2006; Schmoker, 2006; Reeves, 2011).

**Discovering time and resources.** The concept of classroom instruction based on ongoing assessment identifies the importance of an informed administrator to support teachers with the necessary learning and training (Stewart & Houchens, 2014). Besides overseeing large numbers of staff and students and balancing multimillion dollar budgets, principals and administrators must continuously muster the drive and sustainability to become change agents: “they must persist in the pursuit of best assessment practices and continually challenge complacency among their teaching staff members who are satisfied with their existing levels of assessment expertise” (Webber et al., 2013, p. 249).

Funding from a reliable revenue source must also be provided by all stakeholders. Schneidler and Albany (2013) acknowledged that “in order to achieve the desired increases in student achievement . . . the education community must be just as nimble in supporting teacher learning as we expect teachers to be in supporting student learning and administrators to be in supporting teacher learning” (p. 161).

**Acquiring PD for student-centered, data-driven classrooms.** Professional development for informal classroom assessment must become a priority in order to become a reality. In order to support students, teachers also need support, modeling and training (Fordham, 2006; Popham, 2008).
Robinson et al. (2014) worked with educators in a collaborative effort between university and district personnel to enhance the development of formative assessment practices. They immediately realized that “while these educators were being asked to increasingly utilize student performance data in formative ways, it became apparent that teachers lacked adequate backgrounds and understandings of the fundamental principles of formative assessment to fully capitalize on the uses of these practices” (pp. 141-142).

Webber et al. (2013) claimed that assessment literacy has historically been missing from principal preparation programs and on-going professional development programs. Stiggins (2008) contends that all assessment it is part of the administrative role and “therefore, must be woven into the certification requirements and program outcomes” (p. 290).

Although the importance of administrative support in coaching, training, and encouraging teachers to formatively assess their students for understanding is essential for implementation (Popham, 2008), Stiggins (2008) states that informal classroom assessment is often overlooked, misunderstood and “preparation for productive assessment has been missing from principal training programs” (p. 285). In order to support students, teachers also need support, modeling and training; assessment training must become a priority, not just locally, but at the state levels as well (Fordham, 2006; Popham, 2008; Stiggins, 2008).

**Administrators supporting their teachers.** Administrators clearly have a strong will and desire to support their teachers in classroom instruction. More importantly, they are charged to serve as learning leaders of their schools—for students and teachers alike (DuFour, 2002). Although assessment literacy has been missing from many leadership preparation programs (Mulford, 2008) many administrators are cognizant of “adult learning needs” (Stewart & Houchens, 2014, p. 63) and providing time to initiate collegial learning groups. DuFour (2002)
cited the need for administrators to support teachers with “encouragement, recognition, and celebration” (p. 15) as they work together to focus on student learning. DuFour (2002) supported the need for administrators “who understand that the essence of their job is promoting student and teacher learning” (p. 15), not just classroom instruction. DuFour and Marzano (2009) claimed that administrative time spent in support of teacher learning indicates greater student learning results than the time used to observe individual classroom instruction. Martineau (2012) reported on a National Blue Ribbon school, where the principal credits her success with “modeling and guided instruction—to teachers—in best standards-based learning and assessment” (p.56). In another leadership example, Martineau (2010) described the principal as one who “embraces the leadership model of the principal as coach, someone who is a firm but caring leader willing to take the time to guide teachers and others to achieve the best” (p. 57).

Discussion of Findings in Relationship to the Theoretical Framework

Understanding and utilizing data. The work of Jean Piaget (1963), Lev Vygotsky (1978), and Jerome Bruner (1960) provide insight on developing and supporting effective formative assessments. Piaget (1963) held that students learned faster when actively engaged in the learning process. Piaget’s research illustrates the importance of teacher-student questioning and dialogue for deeper understanding and improving learning. The importance Piaget placed on diagnosing student misunderstanding and confusion was a practice supported more recently by DuFour and Eaker (1998) in order to provide real-time information for teachers to diagnose and re-teach.

Jerome Bruner (1960) felt that “any subject can be taught effectively in some intellectually honest form to any child at any stage of development” (p. 38). He referenced stages
of readiness, while sharing the belief of the importance of the teacher in leading student through developmental stages.

The importance of the teacher or capable peer is of significance in this study of both student learning and adult learning. Vygotsky (1978) identified the Zone of Proximal Development (ZPD), the “gap between the determined developmental level of a child, and the “potential development through problem solving under adult guidance or in collaboration with a more capable peer” (p. 86). The ZPD defines those functions that have not yet matured but are in the process of maturation. In order to assist the learner in navigating through the ZPD, dialogue with an adult or more capable peer is crucial. Benjamin Bloom (1980) wrote of the benefits of formative assessment and re-teaching for improved learning. His idea of learning to learn was supported by Howard Gardner (2014) who emphasized teaching for understanding—not recall.

**Discovering time and resources.** Howard Gardner (2014) warned that time constraints do not justify the use of temporary and superficial recall assessment techniques. Guskey’s (2002) research on professional development emphasized the importance of supporting teachers’ exposure to several sequences in order to incorporate change into regular practice. He notes that prescribed stages must be followed sequentially in order for successful change to occur. That sequence reflects the need for professional development to be systemic and thorough in order for practices to change, including teacher beliefs and attitudes. (p. 383) None of these changes can occur without sufficient time and resources.

**Acquiring PD for student-centered, data-driven classrooms.** As the second tier of professional learners, teacher need for growth and development must be supported either directly by administrators, an instructional coach, or an informed peer (Bruner, 1960; Vygotsky, 1978).
DuFour and Eaker (1998) characterized the theory of adult social interaction and ZPD and described the practice of PLC’s as “collective inquiry, the engine of improvement, growth, and renewal” (p. 25). Bocala and Boudett (2015) validated the positive effects of this social collaboration. Shabani, Khatib and Ebadi (2010) defined teacher ZPD as the gap or space between the present level of pedagogy knowledge and the “next (potential) level of knowledge” (p. 242). Beyond professional development, they included student data, observation, and collegial discussion as additional sources of scaffolding. For continuous improvement a teacher must continually set new goals so as not to “remain as an experienced non-expert teacher with a stagnant ZPD” (p. 242).

**Administrators supporting their teachers.** The theoretical works of Piaget (1950) and Vygotsky (1978) support the concept of the importance of administrators supporting their teachers. As a second tier of learners, teacher growth is essential to greater learning in classrooms. Administrators are essential in this process. Piaget’s concept of engaged learning was later validated by Gutsky’s (2002) research on effective professional development. Vygotsky’s (1978) emphasis on the importance of culture and social interaction is significant in teacher development and professional growth, an essential administrative responsibility.

Vygotsky’s ZPD is important, not only to a child’s growth, but also for the adult who needs support from a peer or more knowledgeable adult that can best be provided by administrative coaching, PLC’s, or targeted professional development. Essential in guiding teachers through their ZPD for “cognitive change, experience internalization and develop mentally” (Shabani, Khatib & Ebadi, 2010, p. 255) is the administrative leadership and support needed by teachers to acquire superior professional development, expert coaching, and capable peer interaction.
Implications for Practice

Questioning for understanding appears to be a valuable instructional tool that supports student growth. Although its use is prevalent in many classrooms, it may not always be used effectively to differentiate instruction for improved learning.

There appears to be a shortage of expert professional development available on classroom formative assessment. In addition, pre-service training for teachers and administrators may be deficient in this area of expertise. Since many educators instruct and assess as they were, Fordham (2006) warned not to “presume that teachers, whether they are preservice or inservice, automatically make the link between comprehension strategies and the instructional questions that inspire them” (p. 394). I expect this study will create an awareness of this gap in both pre-service training for new teachers, practicing teachers, aspiring administrators, and the impact this void has for future professional development. Professional development providers offering workshops on differentiate instruction ought to incorporate a formative assessment component. The two are not separate entities. They need to be conjoined for learning success.

Under the direction of an informed administrator or capable peer, it is very doable for classroom teachers versed in formative instruction to assist if not lead such a professional development initiative, possibly within the context of a professional learning community. This model was often a preferred model noted by administrators since it allowed for continuity and a resident expert for additional risk-free support and follow-up. As with any successful professional development, when carefully planned, coached, modeled, and funded, it can have a long-lasting impact. This was a reoccurring theme. Teachers need time, compensation, and follow-up by administration or peers for support. However, as almost all administrators offered, there cannot be a multitude of initiatives occurring at the same time. Too often, not only
teachers, but administrators are distracted and overwhelmed with the number of internal and external disruptions to each school year—the “one and done” approach cannot and should not be continued any longer.

An underlying commonality with all the participants, was the tireless efforts administrators make to support teachers. Often portrayed as the demanding, critical evaluator, the participants revealed only care and respect for their teachers. When speaking of their educators, administrators voiced the same challenges that teachers share about their students: garnering their trust and respect, empowering them with their own learning, supplying them with much positive reinforcement, supporting risk-taking and encouraging them to grow and flourish.

The hidden missive found in this interpretive phenomenological analysis distills down to the belief that administrators are today’s unsung heroes in education.

**Areas for Future Research**

Some of the areas for future research revealed by this study involve larger issues of fairness and equity. Possibly the most prominent involves the inequity that presently exists among the Commonwealth’s communities. This begs the question as to how funding for professional development can be more impartially distributed across the state. Some participants reported that the more remote the district, the less access to resources, including partnering with colleges and universities, as well as a perception of inequitable state funding.

A second area involves the issue of fairness with respect to the ethical implication of classroom instruction that reaches only the more focused and talented students. Perhaps an expanded quantitative search may be in order to see if formative assessment is more prevalent in some areas and explore those conditions that have allowed it to flourish more successfully.
Teacher training programs must become more focused on student learning, not just instruction. Skilled use of formative assessment and differentiated instruction was a prevalent theme during this study. The creation of more teacher-leaders to support classroom teachers in a non-threatening, growth environment would be an area of interest to explore. And finally, how can we change the perception of some in the educational community that administrators are tyrants when, in reality they are partners that share the common goal of all educators—improved classroom learning?

**Limitations**

The major limitation of this study was the lack of geographic diversity among the participants. Although two participants were previously from an urban district, the others were from rural and suburban districts. The research did benefit, however, from the participants’ number of years of administrative experience at every level of education in districts having a broad range of financial and academic support.

Ultimately the number of participants was reduced to seven. IPA studies are usually based on a small number of participants. Such a small size supported the researcher’s ability to examine similarities and differences within a homogeneous group. Smith et al. (2009) reports that the primary concern of such a study is “with a detailed account of individual experience” with an emphasis on “quality, not quantity” (p. 51). Although a larger number of participants would have allowed more data, due to the intricacies of human experience this study benefitted from “a concentrated focus on a small number of cases” (p. 51).

Five of the participants were women and two were men. The ages of the participants ranged from thirty-one to sixty plus. Their corresponding administrative experience reflected a similar range with the minimum experience being four years and the most experienced
administrator having just over twenty years of administrative experience. Unfortunately, there was no meaningful diversity in ethnicity so there were no comparisons to make and to explore whether the experiences of these seven participants might differ from a minority administrator. This study was limited to the Commonwealth of Massachusetts. The voices of administrators in other parts of the country might reveal different experiences.

Conclusion

The lack of questioning for understanding in classrooms and the subsequent lack of use of data for prescriptive re-teaching was an epiphany to me when I became an administrator. In my 15 years as an administrator in three different districts, differentiated instruction was evident in various degrees while classroom diagnostic formative assessment remained more elusive.

Frustrated with my own inability to coach classroom teachers in formative assessment, I searched for outside professional development support, a search hampered by both insufficient funds and knowledgeable providers. My inability to better understand how other administrators dealt with this issue, and to better support teachers, was directly related to my decision to study this topic. Ultimately, this study sought to understand the lived experiences of school administrators with formative assessment and, in particular, classroom diagnostic questioning and how administrators could best provide feedback and support to teachers towards the end of improving student success.

The need to support teachers in expert instruction of curriculum in a limited amount of time is paramount for administrators. Precious planning and professional development time is often focused on a myriad of topics, state test results, classroom management, and instruction. Powerful research findings on formative assessment is often overlooked with this pressure to place facts and formulas into students hands rather that developing on-going dialogue on student
confusions and metacognitive skills. (Black, 1998) Until recently, there has been little training and or dialogue on the importance of informal classroom dialogue and questioning (Heritage, 2007; Stiggins, 2002). In fact, assessments—both formative and summative, have only recently been addressed in some pre-service and in-service training for teachers and administrators (Zubrzycki, 2012).

Classroom questioning for understanding is a skill that can be developed and incorporated into class time with administrative support (DuFour, 2002). School administrators need to change the mindset from an emphasis on teaching to one of learning, “from inputs to outcomes and from intentions to results” (DuFour, 2002, p. 15). The collective lived experiences of the participants in this study illustrate the importance of the leadership position in not only student learning, but the growth and development of professional staff. It is a role viewed by all as one of the most necessary, influential and pivotal for significant, sustained change in learning outcomes. Although continuously challenged by state and local mandates, time constraints and fiscal limitations, administrators stressed the need to encourage the growth and development of their teachers in formative assessment. They all offered the need to build trust and relationships with teachers and acknowledged the need for teacher leadership to develop.

Vicki offered that teachers often have data but do not yet have the tools to use the data to inform their instruction properly. “If you don’t have formative assessment . . . you’re just covering content . . . that’s not okay” offered George. Josh mentioned the need to find time—to work collegially, conduct peer observations, and for coaching sessions. Marge agreed that “teachers [don’t] get enough time to be together to talk things out”. In Josh’s school teacher-led Professional Learning Teams had been set in place by the administration to foster work on curriculum and assessment. He explained that “we find teachers are more likely to learn best
from teachers and we want to take [away] the evaluation stigma”. In order to acquire sustained change, administrators noted the need to set priorities, streamline initiatives, and change the culture. “That’s where leadership can really have a very . . . strong influence [but] it has to go all the way up the chain . . . up the ladder” Madeline stressed emphatically.

Sharing the research on this important topic may start or continue an important conversation on questioning for understanding. Just as students need to see how classroom material relates to their world and future work, teachers, administrators, and teacher preparation programs also need awareness of the relevance and importance of high quality professional development to all of their important work—and in particular, classroom formative assessment for learning.

I am acutely aware that all students will not reach the same learning goals. However, I believe that all students can grow and both increase their capacity to learn and acquire new skills and knowledge. I bring to my research a desire to support administrators as they go forward with their heavy work load and constant pressure to improve all student learning and growth. I trust my research findings will generate at least the beginnings of a discussion and an awareness of some gaps in on-going formative assessment training for administrators, teachers, and teachers-in-training.
References


http://dx.doi.org/10.1207/S15326950DP3502_3


http://dx.doi.org/10.1191/1478088705qp035oa


Appendix A

Recruitment Letter for Participants

**Northeastern University**
College of Professional Studies
490 Renaissance Park
Boston, MA 02115-5000

Dear [Mr. / Ms. LAST NAME],

I am writing to tell you about our research on Administrators and Classroom Formative Assessment. I am conducting this research through the College of Professional Studies at Northeastern University in order to complete my doctorate in education.

The purpose of this research study is to investigate the lived experiences of administrators in supporting teaching and learning. This study is investigating formative assessment, and in particular, classroom questioning for understanding and how administrators view its use and importance. In addition, it will also attempt to determine the level of and need for professional development in this area of classroom instruction.

As an administrator, you are qualified for this study as a result of your experience in observing teaching and learning.

It is important to know that this letter is not intended to pressure you to partake in this study. Your participation is completely voluntary. The research will be conducted at your convenience as to time and location. In summary, the study will involve an initial meeting to formally obtain your consent and review the scope of the project; a 1.5-2 hour interview; and a follow-up meeting to verify the accuracy and validity of your input.

If you are interested in participating in this research, please complete the enclosed form and mail it back in the pre-paid envelope. You can also contact me at the phone number or email below. I will follow up by phone or email in a week or so if I do not hear from you.

Thank you for your time and consideration. I look forward to hearing from you.

Sincerely,

Gail Van Buren
Student Researcher-Doctor of Education
(508) 735-1777
vanburen.g@husky.neu.edu
ENC: Opt-in Form
Appendix A, 1

Opt In Form for Participants

Northeastern University
College of Professional Studies
490 Renaissance Park
Boston, MA 02115-5000

OPT IN FORM

TITLE OF RESEARCH: THE ROLE OF THE ADMINISTRATOR IN SUPPORTING QUESTIONING FOR UNDERSTANDING

Please complete this form and return in the pre-paid envelope provided

I am interested in participating in this study. Please contact me using the following information:

Name: __________________________________________________________

Telephone(s): ____________________________________________________

Best time and day to call: _________________________________________

Email: ________________________________@________________________
Appendix B

Interview Questions

Van Buren, Gail

Interview Questions

Opening:

Could you please tell me about your administrative experience with classroom observations?

1. What is your experience with formative assessment (questioning) to augment student learning?

2. Describe an ideal classroom that uses formative assessment.
   a. Describe your familiarity with this routine.

3. How do you show support for this type of formative assessment?
   a. What is the value for your work?

4. What is your procedure for follow-up with the teacher (after a classroom visit)?
   a. What do you do to prepare for the meeting?

5. How do you coach teachers for improved instruction?
   a. What results have you encountered?

6. How do you think the conversation would evolve if you noted the lack of classroom assessment and dialogue?
7. What is your impression of instruction that keeps pace for the integrity of the curriculum or calendar?

8. What are your thoughts on acquiring professional development for yourself or teachers in formative assessment?
   a. What PD would be helpful?
   b. What have you experienced thus far?

9. What have you found to be the most successful form of PD?
   a. How do you support it?
   b. What support do you receive?
   c. What support do you need to improve?

Closing:

Is there else you would like to share?
Appendix C

Research Map

<table>
<thead>
<tr>
<th>Goals</th>
<th>Interview Questions</th>
<th>Conceptual Framework</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the experiences of administrators in supporting diagnostic</td>
<td>What is your experience with FA?</td>
<td>Teacher-student dialogue and questioning leads to gains in learning.</td>
</tr>
<tr>
<td>questioning?</td>
<td>Describe an ideal classroom that uses FA.</td>
<td>Importance of data to drive differentiated instruction.</td>
</tr>
<tr>
<td>How can PD be provided for both teachers &amp; administrators in</td>
<td>How do you show support for this type of FA?</td>
<td>Administrators and teachers may need PD.</td>
</tr>
<tr>
<td>formative assessment [FA]?</td>
<td></td>
<td>Effective PD is continuous, valid, and connected to improve learning.</td>
</tr>
<tr>
<td>What improvements can be made in teacher and administrative</td>
<td></td>
<td>What are the challenges?</td>
</tr>
<tr>
<td>preparation programs and PD?</td>
<td></td>
<td>Validity</td>
</tr>
<tr>
<td>How do you think the conversation would evolve if you noted the lack</td>
<td></td>
<td>Discrepancies will be noted and analyzed.</td>
</tr>
<tr>
<td>of classroom assessment and dialogue?</td>
<td></td>
<td>Methods will be parallel.</td>
</tr>
<tr>
<td>Methods</td>
<td>What is your impression of instruction that keeps pace for the integrity of the</td>
<td>Questions will be identical.</td>
</tr>
<tr>
<td>Interviews have opportunities for detail and discussion.</td>
<td>curriculum or calendar?</td>
<td>Singular additions will be noted.</td>
</tr>
<tr>
<td>All interviews will be recorded and analyzed.</td>
<td>What are your thoughts on acquiring PD for yourself or your teachers in FA?</td>
<td>Comparisons will be made.</td>
</tr>
<tr>
<td>Several levels of reading, analyzing and coding done.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participants revisited for review of findings.</td>
<td>What have you found to be the most successful form of PD?</td>
<td></td>
</tr>
</tbody>
</table>
Appendix D

Informed Consent

Northeastern University

Investigators: Kelly Conn PhD, Principal Investigator; Gail Van Buren, Student Researcher

Title: The Role of Administrators in Supporting Questioning for Understanding

Informed Consent Document

We are inviting you to take part in a research study. This form will tell you about the study, but the researcher will explain it to you first. You may ask this person any questions that you have. When you are ready to make a decision, you may tell the researcher if you want to participate or not. You do not have to participate if you do not want to. If you decide to participate, the researcher will ask you to sign this statement and will give you a copy to keep.

Why am I being asked to take part in this research study?

We are asking you to participate because of both your current/past administrative experiences in observing instruction and in supporting student learning that will help inform this study.

Why is this research being done?

The study will clarify administrators’ experience with classroom formative assessment in order to help improve student’ learning.

What will I be asked to do?

If you decide to take part in this study, we will ask you to be interviewed to answer nine questions. The questions and your answers, which will be digitally recorded and transcribed, will
cover your administrative experiences observing classroom formative assessments, how you support teachers in providing formative assessment, and the type of professional development you and your teachers have had or may desire to obtain with regard to formative assessment.

**Where will this take place and how much of my time will it take?**

If you decide to take part in this study, you will be interviewed for approximately 1 ½ -2 hours at a place and time convenient for you. After completion of the research, I will ask you to meet briefly for an accuracy and validity check on your input.

**Will there be any risk or discomfort to me?**

Other than finding time in the busy life of an administrator, there are no foreseeable risks or discomforts involved with this study.

**Will I benefit by being in this study?**

There will be no direct benefit to you for taking part in this study. However, the findings may be beneficial for providing better pre-service training for teachers and administrators and/or increasing professional development in formative assessment.

**Who will see the information about me?**

Your identity as a participant in this study will not be known. Only the interviewer will know that the answers you give are from you.

Coding of information will be used as well as pseudonyms for all participants, their districts and their geographical location. The coding includes:

- First-order coding will be used for interview transcripts to capture ideas and differences;
- Second-order coding is used to give meaning to the organized data;
- Finally, codes are abbreviated, alphabetized and the actual meaning of the data is determined.

Data will be maintained in password protected computers. All paperwork will be kept in a secure and locked location. All audiotapes and data will be destroyed upon completion of this project.
What will happen if I suffer any harm from this research?

There is no foreseeable harm related to this research.

Can I stop my participation in this study?

Your participation in this research is completely voluntary. You do not have to participate if you do not want to and you can refuse to answer any question. Even if you begin the study, you may withdraw at any time. If you do not participate or if you decide to withdraw, you will not lose any rights, benefits, or services that you would otherwise have as an administrator.

Who can I contact if I have questions or problems?

If you have any questions about this study, please feel free to contact Gail Van Buren at vanburen.g@husky.neu.edu the person mainly responsible for the research. You can also contact Kelly Conn PhD at kconn@neu.edu, the Principal Investigator.

Who can I contact about my rights as a participant?

If you have any questions about your rights in this research, you may contact Nan C. Regina, Director, Human Subject Research Protection, 490 Renaissance Park, Northeastern University, Boston, MA 02115. Tel: 617.373.4588, Email: n.regina@neu.edu. You may call anonymously if you wish.

Will it cost me anything to participate?

You won’t have to travel, nor will you incur any expense, to participate.
I agree to take part in this research.

____________________________________________
Signature of person agreeing to take part               Date

____________________________________________
Printed name of person above

____________________________________________
Signature of person who explained the study to the participant above and obtained consent               Date

____________________________________________
Printed name of person above
### Appendix E

#### Participants

<table>
<thead>
<tr>
<th>Participants</th>
<th>Years of Administrative Experience</th>
<th>Level</th>
<th>District Type(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Josh</td>
<td>4</td>
<td>High</td>
<td>Suburban/Rural</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Level 1 School</td>
</tr>
<tr>
<td>Dorothy</td>
<td>14</td>
<td>Elementary</td>
<td>Suburban/Rural</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Middle</td>
<td>Level 2 School</td>
</tr>
<tr>
<td>Madeline</td>
<td>20+</td>
<td>High</td>
<td>Suburban</td>
</tr>
<tr>
<td></td>
<td></td>
<td>K-12</td>
<td>Level 1 School</td>
</tr>
<tr>
<td>George</td>
<td>20+</td>
<td>Middle</td>
<td>Suburban</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High</td>
<td>Level 2 School</td>
</tr>
<tr>
<td>Marge</td>
<td>15+</td>
<td>Middle</td>
<td>Rural</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High</td>
<td>Level 2 District</td>
</tr>
<tr>
<td></td>
<td></td>
<td>District-wide</td>
<td></td>
</tr>
<tr>
<td>Vicki</td>
<td>13</td>
<td>District-wide</td>
<td>Rural</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Level 3 District</td>
</tr>
<tr>
<td>Pam</td>
<td>6</td>
<td>Elementary</td>
<td>Rural/Urban</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Middle/High</td>
<td>Level 2 School</td>
</tr>
</tbody>
</table>