A PHENOMENOLOGICAL STUDY OF TEACHER AND ADMINISTRATOR EXPERIENCES IN THE ANALYSIS AND INTERPRETATION OF STUDENT ASSESSMENT DATA

by

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Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

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ABSTRACT

The purpose of this qualitative empirical phenomenological study was to examine the experience of analyzing and interpreting student assessment data from the perspective of both teachers and administrators in order to identify: (a) those aspects of the experiences which are similar or dissimilar among the two groups, (b) the priorities and influences which affect those experiences, and (c) the most critical issues expressed by the participants. Ten teachers and five administrators participated in three in-depth individual interviews, online reflective journaling, and follow-on focus group interviews. This study revealed that the experiences of teachers and administrators can be characterized and described through five domains: (a) motivations, (b) contextualization of learning, (c) data analysis strategies, (d) intergroup and interpersonal relations, and (e) self-actualization. This study also identified seven critical issues which regularly resulted in high levels of satisfaction or dissatisfaction with these experiences: (a) time, (b) training, (c) opportunities to practice, (d) protocol guidance, (e) support, (f) trust, and (g) efficacy, which should be considered by school and district leaders.

Descriptors: assessment data, data analysis and interpretation, domain analysis, participant profiles, teacher and administrator experiences

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Dedication

This work is dedicated to my beautiful daughter Emmaleigh, who the Lord called home much too early, and to my wife Kimberly, who supported me throughout this journey. Even though Emmaleigh was on this earth for only a couple of years, she made such an impact on me. It was through her eyes that I saw a brand new world. It is because of her that I wanted to be a better man. And it was through losing her that I realized that life is far too short and that we need to make the most of every moment.

And to my wife, Kimberly, you will never know how much your love and your support means to me. I love you and thank you for all that you did to help me through this.

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And finally, I owe all that I have to grace, mercy, and love that God provides to me every day. In Him I found the strength to persevere.

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CHAPTER ONE: INTRODUCTION

Assessments have long been used throughout the history of education to measure student academic achievement, as well as instructional effectiveness (e.g., Black & Wiliam, 1998b; Bloom, 1969; Reeves, 2007a; Sadler, 1989; Scriven, 1967; Stiggins, 2004). The effective use of student assessment data allows educators to measure the effectiveness of their school's instructional programs and practices by identifying strengths and weaknesses and connecting those assessment data to other non-assessable performance activities (Wohlstetter, 2009). Tied to any assessment instrument or process, then, are those instructional programs and practices, which support increased student learning. The effectiveness of any assessment program ultimately depends on the interaction between the assessment instrument or protocol, the achievement data itself, and the resulting instructional programs and practices selected by educators (Sacks, 2009). Additionally, because teaching is both an art and a science, teachers and administrators may vary in how they respond to student assessment data, and may design and adjust their educational and instructional programs and practices differently as a result of their data analysis and interpretation.

To better understand these differences, this qualitative empirical phenomenological study was designed to examine the experience of analyzing and interpreting student assessment data from the perspective of both teachers and administrators in order to identify: (a) those aspects of the experiences which are similar or dissimilar among the two groups, (b) the priorities and influences which affect those experiences, and (c) the most critical issues expressed by the participants.

Background

With the passage of the Improving America's Schools Act (IAS) of 1994, No Child Left Behind Act (NCLB) of 2001 (reauthorization of the Elementary and Secondary Education Act), Race To the Top (RTT) initiative of 2009, the pending reauthorization of the Elementary and Secondary Education Act (ESEA), and the recent adoption of the Common Core State Standards (2011), the importance of student assessments as a measure of student academic achievement and school evaluation and improvement initiatives have increased (Blanc, Christman. Liu, Mitchell, Travers, & Bulkley, 2010; Brookhart, 2001; Bulkley, Christman, Goertz, Lawrence, 2010; Bulkley, Olah, & Blanc, 2010; DuFor, DuFor, Eaker, & Karhanek, 2009; Reeves, 2007a). As a result, states have placed a renewed emphasis on the use of statewide summative assessments as a means for evaluating school effectiveness.

Traditional and Changing Functions of Assessments

The traditional purpose of assessing students was to differentiate between their levels of achievement (Black & Wiliam, 1998a; Bloom, 1969; Wininger, 2005). Within the classroom, assessments can be used to diagnose individual and cohort group strengths and weaknesses and overall levels of learning, provide needed intervention and remediation, assign grades, predict performance, and design and adjust instructional programs and practices (Black & Wiliam, 1998b, DuFor et al., 2009: Perie, Marion, & Gong, 2007; Thomas, 2005).

More recently, assessments have been used by the federal and state departments of education as an accountability measure of school effectiveness (Linn, 2000). However, Zupanc, Urank, and Bren (2009) concluded that student achievement data

gained from these summative assessments provide little relevant information for teachers to design or adjust their instructional programs and practices. Zupanc et al. (2009) argued this point by suggesting that by themselves external summative assessments fail to provide any new information about individual student performance within a classroom that the teacher had not already known. However, they conceded that these assessments become a mechanism for improvement by providing a comparison of performance of one classroom against another or one school against another. In some instances, though, Linn (2000) found that statewide assessments have led to some changes within districts and individual schools. In some cases, teachers developed new instructional strategies while in other cases, teacher attitudes towards the use of statewide summative assessments changed; however, in these cases, there was little evidence that the depth and complexity of the content covered significantly changed (McDonnell & Choisser, 1997; Pomplum, 1997).

To be sure, the success or failure of any assessment instrument rests upon how data is collected, how the data is analyzed and interpreted, how the results of the data are communicated, and ultimately what instructional decisions are made. All of these factors contribute to the meaning that educators construct as a result of their experiences with working with assessment data.

Effects of the No Child Left Behind (NCLB) Act of 2001

The premise behind NCLB was that rigorous and clear performance goals would cause educators to reevaluate their instructional programs and practices and that these reforms would lead to higher student achievement. The passage of NCLB, with its sanctions for underperforming schools, caused education agencies to refocus their efforts

to ensure high academic achievement for all students. The most notable of these efforts was the use of assessments designed to improve both the instructional practices of educators and the feedback provided to students with which to improve their own academic performance (DuFor et al. 2009, Reeves, 2007b; Ruiz-Primo & Furtak, 2006; Stiggins, 2004, 2008).

Another result of the passage of the NCLB was the renewed emphasis on the effectiveness of teacher and administrator educational and instructional programs and practices in support of student learning (Stichter, Stormont, & Lewis, 2009). Research suggests that teacher instructional behaviors have a significant effect on student academic outcomes (Ruiz-Primo & Furtak, 2006; Stichter et al., 2009). In fact, Ruiz-Primo and Furtak (2006) found that student scored significantly higher on curriculum embedded assessments than their peers when their teachers regularly engaged in analyzing their assessment data and provided them relevant and timely feedback.

Assessments as an Integral Part of The Instructional Program

The intended purpose of any assessment instrument or data analysis protocol is to provide educators with the necessary achievement data in order to design and adjust their instructional programs and practices in support of student learning (Stiggins, 2008). More specifically, assessment data provides educators with specific information concerning the level of student learning and the corresponding quality and effectiveness of their teaching practices (Guskey, 2007). Guskey further suggested that "if desired learning goals or standards are the foundation of students' instructional experiences, then assessments of student learning are simply extensions of the same goals and standards" (p. 18). In fact, in a synthesis of over 800 meta-analyses, Hattie (2008) found a

significant relationship between student learning and achievement and teachers who regularly monitored their students' progress through assessments or other activities. He also concluded, in the same study, that school administrators who promote challenging goals and then create an environment where teachers feel safe and supported in critiquing, questioning, and analyzing the attainment of those goals have a significant positive effect on student academic performance (Hattie, 2008).

Reeves (2007a) asserted that an assessment program is a reflection of the school staffs' shared values and beliefs regarding their student's capacity to achieve at high levels. He further suggested that because assessment programs put into practice those shared values and beliefs, it is an ethical imperative that the assessment programs and practices reflect the beliefs about the use of assessment data to improve instructional programs and practices and student learning (Reeves, 2007a).

To meet this ethical imperative Reeves (2007a) concluded that teachers must construct meaning of the assessments in relation to the overall instructional program by continuously engaging in the process of assessing students, reviewing and constructing meaning of the assessment data, and designing and adjusting their instructional programs and practices in support of increased student learning.

However, Black and Wiliam (1998a) concluded that many teachers and administrators are not properly trained to analyze and interpret assessment data. In a later study, Wiliam (2006) reported that far too many educators lacked a sufficient knowledge base of the curriculum and content area pedagogy, did not put in the time to connect the curriculum to the instructional practices to successfully support greater student learning, or did not consider students' prior knowledge when designing the curriculum.

Creating Meaning From Assessment Data

Both the constructivist and transformation learning theories hold that knowledge is a product of prior experiences and is continually adjusted or reaffirmed based on new experiences and the meaning that is created from those experiences (e.g. Applefield, Huber, & Moallem, 2001; Biggs, 1998; Boghossian, 2006; Brookfield, 2000; Bruner, 1960; Dewey, 1916; Fleischer, 2006; Gunstone, 2000; Packer & Goicoechea, 2000; Phillips, 2000; Piaget, 1950/2001, 1952; Mezirow, 1991, 1996; von Glasersfeld, 1995; Vygotsky, 1962, 1978). Biggs (1998) also noted that as meaning is constructed through various learning activities it is important for educators to understand that the quality of these activities is influenced by the way in which they are assessed. This holds true both for students and educators. As students use the various learning activities to progress through their academic careers, educators need to use these same learning activities to develop their instructional programs and specific practices necessary to assist their students in their learning.

Because teachers and administrators bring to their classrooms and school a wide range of experiences- academic backgrounds, paths to certification, academic specializations, as well as their own personal beliefs and life experiences, differences are sure to exist among teachers and administrators (Furtak, Ruiz-Primo, Shemwell, Ayala, Brandon, Shavelson & Yin, 2008). To be sure, these experiences form the basis of an educator's instructional programs and practices and how they assess the effectiveness of those practices (Carless, 2007).

Researcher's Biography

I began my career in education as a high school history-social studies teacher, where I taught for ten years. Over the last eight years I have served as a middle school principal and am now serving as the Director of Educational Services where I am responsible for monitoring the district's curriculum, instruction, and assessment programs. Having been directly responsible for administering assessments, analyzing and interpreting student assessment data, and providing instruction as well as observing the actions of others performing these functions, I have personal experience with the process under study. My professional training in the data analysis and interpretation process includes several workshops conducted by the Los Angeles County Office of Education and the Regional System of District and School Support (RSDSS) and other professional organization.

When I first started teaching, I did not have any specific training in analyzing and interpreting student assessment data that I can remember. My process for measuring student achievement on any assessment was based entirely on whether or not a student passed the test and in what percentage bracket they fell. My ability to provide effective feedback to students was limited. In addition, as a new teacher I was encouraged to follow the textbook, chapter-by-chapter, using all of the recommended activities and assessments. No real thought was put into the development of my instructional program or practices. It was not until I started teaching the advanced placement courses that I realized my methods were ineffective. After attending several advanced placement workshops, I realized the importance of administering formative and interim assessments in preparing my students for the Advanced Placement exam. During one particular data

analysis meeting, I was discussing the results of the most recent formative assessment results with one of my colleagues. She had mentioned that most of her students had received an “A” on the assessment. My students had not performed as well. We soon realized that we had different assessments. Her assessment was based on what she specifically taught. My assessment was based on what was covered in the chapter. So as we analyzed the results beyond the scores, we found it difficult to have a common conversation, because our assessment questions were different. I realized that if we were going to have effective and meaningful discussions we would need to cover the same content and administer the same assessment. This would allow us to have a discussion on common issues. Over time we developed a formal process for analyzing and discussing the results of the assessments and our instructional programs.

Later in my career, when I became a principal, I had the opportunity to attend a workshop on how to analyze formative and interim assessment data within the context of preparing for the California Standards Test. During my first meeting with my department chairs following that workshop, I had asked them, "How do you know if what you are doing is working?” and, “What indicators do you have set up to tell you if your students are making solid progress?" Their lack of responses was stunning. I was hoping for some insightful responses. Instead, most were either silent or they commented that progress was measured by whether students passed the test or not. These comments took me back to my early experiences in my teaching career. It was at that point that I realized we needed to make significant changes to how we design our instructional programs, how we assess students, and how we measure and analyze student achievement.

From then on I have been very active in trying to understand how to better analyze and interpret student assessment data and how to better design and/or adjust instructional programs as a result of that data. My research has led to me to investigating several assessment program and data analysis protocols. Many of which I have tried to varying degrees of success. Throughout this endeavor I have found that regardless of which assessment program or data analysis protocol I have used with my staff, the one constant was the human factor behind the program or protocol. I concluded that how one accepts and internalizes the particular program or practice appears to be the greatest predictor of its effectiveness. That conclusion has led me to an interest in studying the experience of analyzing and interpreting student assessment data from the perspective of both teachers and administrators Examining how different teachers and administrators construct meaning of assessment data provides insight into how they perceive the level of student achievement and the effectiveness of their instructional programs and practices, which will influence how they design and adjust those programs and practices in the future.

Statement of the Problem

The specific problem to be addressed in this study was to identify the areas of common agreement and possible differences in the ways that teachers and administrators experience the phenomenon of analyzing and interpreting student assessment data within and across school systems and grade spans.

Although research suggests that assessments may be beneficial in improving student academic achievement (e.g., Black & Wiliam, 1998; Carless, 2007; DuFor et al., 2009; Gusky, 2007; Harlen, 2005; Reeves, 2007a; Sacks, 2009; Scriven, 1967; Stiggins,

2008), little is known about the personal experiences, reflections, judgments, and resulting meaning that is created from the experiences of teachers and administrators engaged in analyzing and interpreting those student assessment data and then using the data to design and adjust their programs and practices. Additionally, although educators have access to numerous studies, which recommend and explain various analysis and interpretation processes and protocols, so much of what they do in their daily work and the decisions they make on a daily basis are based on their personal experiences. These experiences, then, have a great potential to influence their predisposition and abilities to analyze and interpret student assessment data. In fact, Perie et al. (2007) suggested that because assessments may be used for multiple purposes- instructional, evaluative, and predictive- it is important to understand how teachers and administrators make sense of those assessment data and to understand how that sense-making influences the development of their instructional programs and practices. As suggested by Sacks (2009), "the effectiveness of any assessment ultimately depends on how the results are used to influence instruction" (p. 7).

Furthermore, because teachers and administrators create meaning from their previous experiences, as they encounter new experiences they either accommodate or assimilate the new knowledge in order to create new meaning or confirm existing meaning. These experiences influence their attitudes and perceptions, as well as how each analyzes, interprets, and uses student assessment data for some instructional end (e.g., Bruner, 1960; Dewey, 1916; Mezirow, 1996; von Glasersfeld, 1995; Vygotsky, 1962).

Purpose Statement

The purpose of this qualitative empirical phenomenological study was to examine the experience of analyzing and interpreting student assessment data from the perspective of both teachers and administrators in order to: (a) identify those aspects of the experiences which are similar or dissimilar among the two groups, (b) identify the priorities and influences which affect those experiences, and (c) identify the most critical issues, which provide an in-depth understanding of the experiences and help to define the essence of the phenomenon.

Through in-depth, individual interviews, on-line reflective journal postings, and follow-on focus group interviews, the participants' attitudes, emotions, thought processes, understanding of student academic skills and knowledge, and reflections on their own instructional effectiveness were revealed.

Significance of the Study

This study addresses the gap in the literature and adds to the body of knowledge concerning the experiences of teachers and administrators while analyzing and interpreting student assessment data, constructing meaning from these data, and designing and adjusting their instructional programs and practices as a result of these data.

Mason (2003) suggested, "few studies of schools have looked closely enough at the collective interpretation of data to see how teachers and school leaders actually engage in making shared sense of data" (p. 1). Additionally, Davies (2007) concluded that when educators evaluate student work and their level of learning by the consistent application of scientifically based criteria, then their analyses are likely to be more valid

and reliable. Once the appropriate judging criteria have been established, it becomes necessary for both teachers and administrators to determine the most effective and productive process of analyzing and interpreting student assessment data (Davies, 2007).

Given the growing importance and value placed on assessments at the classroom, school, district, and state level it is necessary to understand how teachers and administrators make sense of student assessment data and to understand how that sense-making influences their instructional programs and practices in support of student learning (Perie et al., 2007). This is important for three reasons. First, understanding teacher and administrator experiences in analyzing and interpreting student assessment data can help to reveal any challenges and successes that they may encounter, thereby providing a framework for other teachers and administrators who may be experiencing the same challenges. Second, research suggests that to increase student learning, teachers and administrators must use student assessment data to determine their level of academic proficiency and make the necessary adjustments to the educational and instructional programs (e.g., Black & Wiliam, 1998a; Guskey, 2007; Reeves, 2007a; Stichter et al., 2009; Stiggins, 2008). By examining how different teachers and administrators construct meaning of assessment data provides insight into the critical issues which influence the experience of analyzing and interpreting student assessment data, and how they perceive the level of student achievement and the effectiveness of their educational and instructional programs and practices, which will ultimately influence how they design and adjust those programs and practices in the future. Finally, because teachers and administrators use student assessment data for different purposes it is important to examine those differences and similarities, not only in the analysis process, but also in the

use of the data itself in order to identify the interconnectedness between the two parties. For example, teachers primarily use assessment data for classroom instructional purposes and for measuring student performance, while administrators primarily use student assessment data to design school wide educational programs, provide professional development activities for the school staff, and to facilitate the collaborative work of the staff.

Research Questions

In qualitative studies, the research questions are generally divided into two types: central questions and sub-questions (Creswell, 2007). Central questions are general in nature and provide the foundation for the development of subsequent questions, while sub-questions are narrow in nature and provide focus for interviews, close observations, and document analysis (Creswell, 2007). Creswell (2007) further divides sub-questions into issue-oriented and procedural sub questions. Issue-oriented sub-questions are theoretical in nature and are designed to break the central question down into subtopics and issues, whereas procedural sub-questions are concerned with the research process and addresses the researcher's need for information related to the intent of the research (Creswell, 2007).

Following Creswell's (2007) recommendation, one central question, five issue-oriented sub-questions, and two procedural sub-questions were identified in order to describe the experiences of both teachers and administrators engaged in the analysis and interpretation of student assessment data in order to identify those experiences which are similar or dissimilar among the two groups, as well as the most critical issues which provide an in-depth understanding of the experiences and help to define the essence of

the phenomenon. The following central question and sub-questions guided this study:

Central Question

What is the lived experience of analyzing and interpreting student assessment data for teachers and administrators?

Issue Oriented Sub-Questions

1. What is similar or dissimilar about the factors that contribute to teacher and administrator motivation to analyze and interpret student assessment data?
2. What is similar or dissimilar about how teachers and administrators learned to analyze and interpret student assessment data?
3. What is similar or dissimilar about how teachers and administrators analyze, interpret, and use student assessment data to include their successes and challenges?
4. What is similar or dissimilar about what teachers and administrators think about and talk about when they try to make sense of assessment data and the resulting instructional programs and practices?
5. What is similar or dissimilar about how teachers and administrators describe their experiences in analyzing and interpreting student assessment data?

Procedural Oriented Sub-Questions

1. What are the domains of inquiry that facilitate the identification of the contexts or situations and which have influenced teacher and administrator experiences of analyzing and interpreting student assessment data?
2. What are the most critical topics or issues discussed by teachers and administrators that regularly resulted in high levels of satisfaction or

dissatisfaction with the experiences of analyzing and interpreting student assessment data?

Research Plan Overview

This qualitative empirical phenomenological study was designed to examine the phenomenon of analyzing and interpreting student assessment data in order to identify those experiences, which are similar or dissimilar between teachers and administrators, as well as those critical issues, help to define the essence of the phenomenon. This research was designed to be a qualitative study with an empirical phenomenological approach. Ten teachers and five administrators from two school districts were selected to participate in this study using purposeful sampling, with a maximum variation approach. Data was collected through three in-depth individual interviews, online reflective journal postings, and follow-on focus group interviews. The participants' account of their emotions, thoughts, and behavior preceding, during, and following the analysis and interpretation of student assessment data formed the essential domains, sub-categories, topics, critical issues, and relationships for the evaluation of the participants' experiences and the identification of the essence of the phenomenon.

The design is properly classified as qualitative, as it sought to examine people in their natural setting in an attempt to make sense of, or interpret, the meaning that they create from their experiences within the context of phenomenon (Denzin & Lincoln, 2005); phenomenological, as it sought to understand and construct meaning of the lived experiences from the perspective of the participants (Bogdan & Biklen, 1998); and empirical, as it sought to determine the underlying structures or essences of the participants' experiences through the participant's description of their experiences and

the researcher self-reflection and (Moustakas, 1994). As such, a qualitative research method was appropriate for this study as it sought to examine people in their natural setting in an attempt to make sense of, or interpret, the meaning that they create from their experiences within the context of the phenomenon under study (Denzin & Lincoln, 2005).

Creswell (2007) suggested that a qualitative research method provides the framework to explore, define, and assist in understanding a phenomenon and the experiences people encounter within the context of that phenomenon. Qualitative research, rather than quantitative, according to Creswell (2007), is more appropriate when the study requires a complex, detailed understanding of a phenomenon and when this level of detail can only be established by interviewing or observing people in their natural environment and when we want to hear the voices and stories of the participants. A qualitative methodology is also consistent with both the constructivist and transformation learning theories, which provides the theoretical framework for this research to understand teacher and administrator experiences in analyzing and interpreting student assessment data and the meaning that they create from those experiences.

Delimitations

This study was purposely limited to participants from two southern California school districts. One district is characterized as a mid-sized, sub-urban/urban school district, while the second district is characterized as a mid-sized, rural school district. The selection of these two school districts was based on the common practices of: (a) administering regularly scheduled summative assessments, (b) regularly scheduled data analysis meeting, and (c) use of commercially produced data storage and analysis

software. These two districts were also selected for their proximity to each other, which made it more convenient to schedule the three in-depth individual interviews and follow-on focus group interviews.

This study was also limited to interviewing teachers from grades two through eleven and administrators from elementary, middle, and high schools. The purpose was to define the participation to teachers and administrators of students who participate in the California Standards Test (CST).

Additionally, this study was limited to interviewing only ten teachers and five school site administrators based on Seidman's (2006) suggestion that a sample size of five to twenty-five participants was appropriate for a phenomenological study. However, purposeful sampling with a maximum variation approach was used to select the participants for this study to ensure the consolidated interview data provided an appropriate level of breadth and depth to the context wherein the phenomenon occurs. For the purpose of this study, maximum variation refers to the range of teachers and administrators from which the sample was selected based on the following participant characteristics: (a) current grade level assignment, (b) teaching experience, (c) education level, (d) gender, (e) ethnicity, and (f) experience in assessment data analysis and interpretation.

Although this study has limitations, the results may still be generalized across the teaching profession, to other grade levels, or to other school administrators because of the focus of the design of the research study to examine the differences and similarities across these grade levels. Additionally, through thick, rich descriptions created through the participant profiles, in-depth domain analysis, and the cross-case comparisons,

readers of this study will be able to appropriately determine the level of generalizability and transferability.

Operational Definitions

Analyses of student assessment data- The process of deconstructing student performance information to describe patterns, develop explanations, and test hypotheses.

Domain analysis- A four-step process of analyzing interview data, "where the research questions require a focus on the common categorization and perceptions of specified groups" (Atkinson & Abu El Haj, 1996). These domains are general categories of inquiry representing a similar focus or trait and are based on gaining an understanding of what the participants have experienced in terms of the phenomenon and what the contexts or situations which have typically influenced or affected the participants' experiences (Patton, 1990).

Educational program- Those programs, services, and operations which collectively support the work of the faculty and staff as well as well as the academic and socio-emotional development of the students.

Instructional program and practices- The application and interaction of the curriculum and pedagogy within a classroom and across a content area or grade level.

Interpretation of student assessment data- The process of making sense of or explaining the data collected within the context of the educational and instructional programs.

Participant profile- Vignettes of participant responses presented in their own words and

grouped under each domain as a means of sharing interview data and presenting the participants in context.

Structural coding- Question based coding process, where codes are applied to discrete questions and any exploratory questions that are repeated across participant data sets.

Student assessment data- Those numbers, letters, or criterion levels, which identify student achievement on an assessment.

CHAPTER TWO: LITERATURE REVIEW

In this chapter, theories underlying how educators create meaning from their experiences within the phenomenon of analyzing and interpreting assessment data and the resulting designs and adjustments made to their educational and instructional program and practices will be examined. Additionally, several studies concerning the types and purposes of assessments, predictive ability of assessments, data analysis, feedback, and the relationship between assessment instruments and analysis and instruction will be explored.

Introduction

The purpose of assessments is to provide educators with the necessary information to support student learning (Stiggins, 2008). School administrators need to be aware of how assessment information can be utilized to make decisions about how best to support their teaching staff, and how they can identify the professional development needs of their teaching staff through the identified academic needs of the students they are working with. Sacks (2009) concluded that the effective interaction between assessments and instruction is ultimately what leads to greater student learning and improved student achievement. To this end, educators who engage in analyzing and interpreting student assessment data are better able to construct new knowledge and meaning from that process in order to appropriately design and adjust their educational and instructional programs and practices. Stiggins (2008) advocated that if assessments are to positively impact student learning they must provide educators with the necessary information to determine the level of student achievement and program effectiveness, as

well as, providing the students with the necessary information on what they need to do in the future to increase their own learning.

Theoretical Framework

Using the constructivist learning theory (Bruner, 1960, 1966; Dewey, 1916; Piaget, 1950/2001, 1952; Prawat & Folden, 1994; von Glasersfeld, 1995; Vygotsky, 1962, 1978) and the transformation learning theory (Mezirow, 1991, 1996, 1998, 2000) as a framework, this study will seek to better understand the essence of the experiences teachers and administrators face as they construct meaning concerning their students' level of academic achievement through the analysis and interpretation of student assessment data and the resulting instructional programs and practices.

In educational research the constructivist learning theory and the transformation learning theory are normally applied to how students learn. For the purpose of this study they will serve as a framework for understanding how teachers and administrators create meaning from their experiences while engaged in analyzing and interpreting student assessment data and while engaged in designing and adjusting their instructional programs and practices as a result of that process.

Constructivist Learning Theory

The constructivist learning theory holds that people construct knowledge and meaning through their lived experiences and that these meanings are continually updated through a process of accommodation and/or assimilation of new experiences (e.g. Applefield, Huber, & Moallem, 2001; Bruner, 1960; Dewey, 1916; Piaget, 1950/2001, 1952; von Glasersfeld, 1995; Vygotsky, 1962, 1978). Piaget (1952) concluded that when people engage in any activity they incorporate by accommodation or assimilation their

new experience into an already existing framework of knowledge, thereby creating new meaning. The process of accommodation refers to the act of reframing the current context with which one creates meaning from their experiences, whereas assimilation refers to the act of incorporating new experiences into already existing experiences (Piaget, 1952). Both processes lead the individual to incorporate new information into their existing worldview to either confirm that worldview or to create an entirely new one to make sense of it (Piaget, 1952).

In the process of constructing meaning Applefield et al. (2001) suggested that people must actively strive to make sense of their new experiences and then apply those new experiences to what they already know or believe. Learning, according to Applefield et al. (2001), then, is more about the construction of knowledge rather than the transmission of knowledge. The construction of meaning, then, is a continuous and active process and is influenced to a large extent by our existing knowledge base (Gunstone, 2000; Packer & Goicoechea, 2000; Phillips, 2000).

While conducting a study of children's cognitive development, Piaget (1951) concluded that complex cognitive processes were built on the basic cognitive foundations laid in earlier stages of development. He found that when children encountered new experiences, they organized that new information into groups of interrelated ideas. Using Piaget's theories as a foundation, Bruner (1960) concluded that learning was a process of making sense of one's experiences by selecting relevant information, synthesizing that information, constructing hypotheses, and then making decisions. This process provides the learner with a body of knowledge wherewith to create meaning and to draw

conclusions for use in future problem solving. To this end, the more experiences that a learner has the more conclusions he or she can draw.

Because our experiences form the basis of our learning, von Glasersfeld (1995) argued that the process of learning causes us to construct meaning of our experiences and that each meaning we construct makes us better able to give meaning to similar experiences. As such, he suggested that the process by which people arrive at an answer is far more important than the answer itself (von Glasersfeld, 1995). This would suggest that as people construct their own meaning and reflect upon their own experiences, past and present, they discover new principles, concepts and facts for themselves that they can apply to future situations. Boghossian (2006) suggested that people are naturally active participants in their learning by seeking to construct meaning from their subjective experiences. Additionally, Boghossian (2006) noted that because people begin with different knowledge bases and knowledge construction schemata, the meaning they construct from a similar experience would not necessarily be the same.

In its application to formal education, regardless of the setting, both educators and students can be observed constructing new knowledge and meaning. The educator provides opportunities for students to acquire knowledge and make sense of their learning experiences. The task of the educator in this process is to design learning experiences commensurate with the student's current level of learning or academic proficiency. These learning opportunities, according to Bruner (1966), build upon what students have already learned allowing for the administration of an assessment to determine the degree to which a student has mastered the intended prerequisite knowledge and the degree to which the student has been able to apply that newly acquired knowledge to some end.

The educator, on the other hand, is tasked with analyzing student assessment data and other learning opportunities in order to appropriately determine the students' level of learning and to design and adjust their educational and instructional programs and practices in support of increased student learning (Bruner, 1966).

From the constructivist learning theory two important paradigms have emerged: Vygostky's zone of proximal development (ZPD) and social constructivism.

Zone of proximal development (ZPD). The zone of proximal development (ZPD) refers to the gap that exists between what is supposed to be learned and what is actually learned (Vygotsky, 1978). From his research, Vygotsky (1978) found that children learn first by following adult examples, receiving assistance where needed, and then by gradually developing the ability to perform the task independently. Critical to his theory, then, is the assertion that adults must determine where the student's learning lies within the ZPD and identify their immediate needs, which provides for increased learning opportunities.

Based on his earlier research, Vygotsky (1962) concluded that an examination of a student's ability to independently solve problems was a better gauge of academic intelligence than content-based assessments. He argued that this focus allowed educators to design increasingly more complex learning opportunities for students based on their level of academic or cognitive achievement (Vygotsky, 1962).

Within the ZPD, Vygotsky (1978) suggested that cognitive growth was based primarily upon the social interaction between students and their similar and advanced peers and adults. This social interaction enables students to build an understanding of

various concepts and over time they associate those concepts with their experience (Vygotsky, 1978).

Social constructivism. Social constructivism suggests that learning is a social activity and that knowledge is first constructed within a social context before it is fully experienced by the individual (e.g., Atherton, 2009; Bruner, 1960; Clark, 2005; Coupal, 2004; Dewey, 1916; Hean, 2009; Prawat & Folden, 1994; Matthew 2000; Vygotsky, 1978). Dewey (1916) concluded that people acquire knowledge from those lived experiences where concrete activities are combined with theory. He suggested that it is the interaction between people that produce the greatest learning opportunities. Bruner and later Prawat and Folden (1994) suggested that because learning is a social process, individuals naturally construct meaning through their interactions with each other and with the environment in which they live. Atherton (2009) and Hean (2009) also noted that the influence over time of other participants in the various social encounters greatly affects one's perceptions of an experience, as well as how they create meaning from such experiences.

Transformation Learning Theory

The transformation learning theory is grounded in the presupposition that "no need is more fundamentally human than our need to understand the meaning of our own experience" (Mezirow, 1991, p. 11). From this original presupposition, the transformation learning theory emerged out of Mezirow's study of the changed roles and self-concept that several women experienced that had reenrolled in college after an extended absence. He found that as the participants became critically aware of their new

experiences their assumptions and frames of references changed, resulting in what he called perspective transformations (Mezirow, 1991).

Mezirow (1996), in borrowing from the constructivist learning theory, concluded that learning is a process of using the meaning constructed from prior experiences and accommodating current experiences in order to transform one's worldview or perceptions.

Because our experiences are ever changing and the meanings that we create from those experiences are ever evolving we cannot always be sure of what we know or believe. Mezirow (1996) suggested that our attitude and beliefs are formed early in life and become the basis for our frames of reference that define our worldview. In her review of Mezirow's transformation learning theory, Fleischer (2006) concluded that

> Once set, we automatically move from one specific activity (mental or behavioral) to another. We have a strong tendency to reject ideas that fail to fit our preconceptions, labeling those ideas as unworthy of consideration . . . Becoming critically reflective of the assumptions of others is fundamental to effective collaborative problem posing and solving. Becoming critically reflective of one's own assumptions is the key to transforming one's taken-for- granted frame of reference, an indispensable dimension of learning for adapting to change. (p. 148)

Mezirow (1998) differentiated among three types of reflection on experience: (a) content reflection, (b) process reflection, and (c) premise reflection. While content and process reflection involves critically examining and evaluating the experience itself, premise reflection involves examining and evaluating "long- held, socially constructed assumptions, beliefs, and values about the experience or problem" (Mezirow, 1998, p. 187). From his 2000 study, Mezirow concluded that there are four processes of learning:

(a) elaborating on an existing point of view, (b) establishing new points of view, (c) transforming our point of view, and (d) transforming our habits of mind. Based on Mezirow's work, Brookfield (2000) concluded "an act of learning can be called transformative only if it involves a fundamental questioning and reordering of how one thinks or acts" (p. 139). Central to transformation learning, then, is the ability of the learner to critically reflect on their experiences and the meaning that they have created and evaluating it against alternative perspectives (Mezirow, 2000).

Both the constructivist and transformation learning theories help to explain the way in which we interpret and reinterpret our experiences in order to construct meaning of our past and present experiences. Both theories hold that knowledge is a product of our prior experiences and is continually adjusted or reaffirmed based on new experiences and the meaning we create from it. Creswell (2007) noted that "individuals seek understanding of the world in which they work" (p. 20) suggesting that the meaning they create from their experiences are forged within the specific context in which they work and through the social and professional interactions that they have with their colleagues. For the purpose of this study both the constructivist and transformation learning theories help to explain how educators construct meaning from their experiences while analyzing and interpreting student assessment data and while designing and adjusting their instructional programs and practices as a result of that analysis.

Review of the Literature

Research suggests that in order to increase student-learning teachers must analyze and interpret student assessment data in order to design and adjust their instructional programs and practices to address individual student and group needs (e.g., Black &

Wiliam, 1998a; Smith 2008; Stichter et al., 2009; Stiggins, 2008). School administrators, on the other hand, need to determine what data is needed, how best to respond to that data, and facilitate discussions about that data (Jakicic, 2009). To be sure

> The instructional decisions that have the greatest impact are made day-to-day in the classroom [and] many of the most crucial instructional decisions are made by students and teachers not once a year but every few minutes. [To this end], teachers diagnose student needs, allocate time, design and implement instructional interventions, judge student work, and assign grades. (Stiggins, 2004, p. 25)

Wiliam (2006) found that those teachers, who were most familiar with the content and curriculum, as well as instructional best practices, were better able to adjust their instructional programs and practices necessary to support student learning. He also found that those teachers who worked collaboratively with others in developing curriculum and identifying best instructional practices related to the curriculum were also better able to support student learning (Wiliam, 2006). Accordingly, to be successful in increasing student learning, educators must navigate through three phases of the assessment process: (a) eliciting evidence of academic achievement, (b) interpreting assessment data, and (c) designing and adjusting instructional programs and practices (Wiliam, 2006).

The success of any assessment instrument or protocol is dependent upon the knowledge and skills of those educators responsible for analyzing and interpreting these data and then using these data for some purpose (Black & Wiliam, 1998b; Blanc et al., 2010; Furtak et al., 2008). In fact, Blanc, et al. (2010) suggested that in the course of analyzing and interpreting assessment data educators must ensure that their processes are grounded in their ability to question their own understanding of various content area

pedagogy, curricular concepts, student learning theories, and best practices for instruction.

Types and Purposes of Assessments

Because so many educational and instructional and academic support decisions are based on the results of assessments, Harlen (2005) suggested that educators need to understand that the assessments themselves impact not only the learning experiences provided to students, but also the way in which they themselves analyze and interpret data and provide feedback to the students.

Stiggins (2008) observed that to be effective the assessment instruments and data analysis protocols must produce useful information about both student learning levels and teacher instructional strategies to be used at all levels of educational and instructional decision-making. He emphasized that

> Assessments must meet three standards of quality. Each assessment must be designed to serve a specific predetermined purpose, arise from a specific predetermined definition of achievement success, and be built of high-quality ingredients so as to yield dependable results. (Stiggins, 2008, p. 3)

According to Sadler (1989) assessments are "concerned with how judgments about the quality of student responses can be used to shape and improve their competence by short-circuiting the randomness and inefficiency of trial-and-error learning" (p. 120). By analyzing assessment results educators are provided with essential information with which to identify student-learning gaps and can adjust their instructional programs and practices to assist students in closing that gap (Guskey, 2007). To this end, Guskey (2007) suggests that educators need to view the assessment process as an integral part of

the school's educational program and the teacher's instructional program and practices in an effort to help student learn. Ruiz-Primo and Furtak (2006) concluded that those educators, who were able to assess their students' learning, analyze and interpret student assessment data, and used this information to design and adjust educational and instructional programs and practices to meet the needs of their students generated higher levels of student achievement.

Scriven (1967) suggested that to effectively judge student work teachers must be able to "justify (a) the data-gathering instruments or criteria, (b) the weightings and (c) the selection of goals to be assessed" (p. 40). Using Scriven's definition as a foundation, Taras (2005) defined assessment as any instrument or process, which judge student work according to specific criteria. To Scriven's definition, she also added the judging of student work against identified goals as a fourth component for judging student work (Taras, 2005). Here the assessment seeks to define the gap between what was learned and what was required.

Types of assessments. Assessments can be divided into three distinct types according to frequency and scope: (a) formative, (b) summative, and (c) interim; all of which should occur during the natural course of the instructional program and are intended to confirm that which was taught was learned (Perie et al., 2007).

Formative assessments. Formative assessments, as defined by Black and Wiliam (1998b), refer to "all those activities undertaken by teachers and/or students which provide information to be used as feedback to modify teaching and learning activities in which they engage" (pp. 7-8). Later, Wiliam (2006) elaborated on this definition by suggesting that through formative assessments educators are able to elicit evidence of

student learning and make adjustments to their educational and instructional programs and practices to better meet the needs of their students. These assessments, which are embedded into the classroom instructional activities, are intended to provide educators with immediate data with which to adjust their instruction and to provide students with immediate feedback concerning their own level of achievement.

Formative assessments can be divided into two subtypes: reactive and pre-emptive (Carless, 2007). Reactive formative assessments are designed to measure student achievement post-instruction, while pre-emptive formative assessments are designed and developed pre-instruction in order to assess students prior to the instruction of new or more complex content and skill knowledge (Carless, 2007). With preemptive formative assessments, the teacher designs anticipatory intervention strategies based on previous student achievement data. Carless (2007) concluded that unlike reactive formative assessments, which is in response to content just taught, pre-emptive formative assessment allows teachers to adjust their instructional strategies and behaviors before students begin to tackle new learning by using assessment data from previous classes in preparation for high stakes assessments.

Summative assessments. According to Harlen (2005) summative assessments can serve both internal and external purposes. The internal purposes include the assigning of grades, evaluating courses, and designing new instructional programs and practices, while the external purposes include school accountability measures, review by accreditation and certification bodies, and student advancement.

Summative assessments are administered at the conclusion of a course of study. These assessments are intended to measure student achievement against pre-determined

content and/or performance data (Taras, 2005). For an assessment to be considered summative a set of common criteria must be applied for judging students' level of achievement (Harlen, 2005). Student achievement, then, is usually summarized in terms of achievement levels or grades.

Interim assessments. Bridging the gap between formative and summative assessments are interim assessments. Interim assessments are those processes or instruments of judging student learning at predefined moments within the instructional program (Perie et al., 2007). These assessments resemble the summative assessment instruments in format, but also resemble the formative assessments in purpose in that they are intended to measure individual student or cohort group achievement on a limited set of standards or content with the purpose of providing relevant information with which educators can design and adjust their instructional programs and practices (Carless, 2007).

Because educators can differ greatly in their use and understanding of assessment instruments and the resulting data, interim assessments provide a linkage between the formative and summative assessments and the curriculum to be taught. Carless (2007) suggested that the systematic use of interim assessments has the potential to encourage teachers to utilize formative assessments more frequently in preparation for the interim assessments and later the summative assessments.

Alignment of formative, interim, and summative assessments. Several studies have suggested that formative, interim, and summative assessments need to complement each other if they are to increase student learning and support student achievement on high stakes assessments (e.g., Carless, 2007; Harlen, 2005; Olah et al., 2010b; Stone &

Lane, 2003). More specifically, Carless (2007) concluded that there is little evidence to suggest that student academic achievement increases as a result of the isolated use of formative, interim, or summative assessments alone, rather there is evidence to suggest that the instructional adjustments made by the teacher as a result of assessment data do have an impact on student learning. Based on their research, Bulkley et al. (2010b) concluded that when formative, interim, and summative assessments are used in a complimentary manner they will lead to greater student learning by providing teachers with the necessary information with which to adjust their instructional programs and practices. Furthermore, by linking formative, interim, and summative assessments students will be provided with focused short-term instruction, which provides the necessary feedback to construct relevant meanings in preparation for long-term learning (Bulkley et al., 2010b).

The distinction between formative, interim, and summative assessments lies in the type of data reviewed and how these data are interpreted (Harlen & James, 1997). For formative assessments, the required data must relate to student progress toward immediate learning goals, while summative assessment data must relate to levels of progress toward an established criteria or standard. Additionally, formative assessment data is interpreted in relation to the steps the teacher needs to take to adjust their instructional practices. Summative data, on the other hand is often used to determine individual and cohort achievement levels in order to design or adjust overall instructional programs and practices future use. Interim assessment data links the short range learning goals with long range learning goals by providing benchmark evidence of student learning. These benchmark data enable educators to not only identify current student

achievement levels, but also to better understand where students are in the developmental progression related to content acquisition, academic skill development, and conceptual understanding of the required learning (Harlen & James, 1997).

Purpose of assessments. Black and Wiliam (2003) concluded that although the terms formative, interim, and summative are often used to describe the type of assessment instruments, it is more appropriate to use the terms to describe the purpose they serve. The essential purpose of any type of an assessment is to identify the gap between a student's current level of learning and some desired goal (Heritage, 2007). The teacher is tasked with identifying this gap and designing and adjusting their instructional programs and practices to assist student in closing that gap. Accordingly, assessments provide feedback to both the teacher and the students concerning the current levels of academic achievement.

Core attributes and purposes. Shepard (2010) identified two critical attributes of assessments. First, assessment instruments must provide the information for which it was intended, otherwise, teachers will not be able to effectively design their instruction or provide needed interventions to students. Second, teachers must work collaboratively in designing the instruction and reviewing the assessment data to determine student achievement levels.

Perie et al. (2007) suggests that the primary purpose of assessments is to provide educators with information necessary to adapt the instructional programs and practices to better meet their students' learning needs. To be successful in its primary purpose, Shepard (2010) asserted that assessment instruments must be integrated into the teaching-learning cycle where they can provide immediate data during the course of study for

teachers to adjust their instructional programs and practices to meet the needs of their students as well as providing cohort achievement data from summative assessments for long range educational and instructional program design and evaluation.

From its primary purpose, Perie et al. (2007) identified three core purposes for the use of assessments: (a) instructional, (b) evaluative, and (c) predictive. The instructional purpose provides the data necessary for educational leaders to design and adjust their educational and instructional programs and practices in support of increased student learning (Bulkley et al., 2010b). Bulkley et al. (2010b) noted that assessment data also provides an evaluative purpose whereby the curricular program may undergo changes in support of increased student learning. Here, the school may need to redesign the curriculum and realign it to the high stakes state assessments or other purposes. Finally, assessments can be used as a predictor of future success on other assessments. It is important to note that to be predictive each assessment instruments must be complimentary and fully aligned to each other, both in purpose and in content.

Linkage between formative, interim, and summative assessment purposes. Studies have found that when the focus of teaching is on transmitting information to the students in a variety of ways in order to assist them in creating meaning out of that information long-term learning will result (Blanc et al., 2010; Bulkley et al., 2010a, 2010b). Bulkley et al. (2010b) argued that schools need to focus their instructional and assessment programs on administering formative assessments, which allow them to provide feedback that helps students know where they are in relation to immediate learning goals. These short-term, focused formative assessments enable the teacher to learn more about their students and to reflect on the effectiveness of the learning

opportunities and instructional strategies. These formative assessments also allow the teacher to differentiate the curriculum to meet individual student needs rather than relying on summative data which places a greater instructional emphasis on group needs (Bulkley et al., 2010a).

According to Bulkley et al. (2010a) most summative assessment instruments are used for external purposes only, such as certification by outside institutions for vocational or advanced degree programs and certification of the school's academic progress. As a result, schools may focus too much attention on preparing students for these assessments to the detriment of deep learning. An over reliance on externally used summative assessments over short-term formative assessments has the potential to create a situation where teachers teach to the test and students create an identity of a test taker rather than a lifelong learner (Bulkley et al., 2010a).

Brown and Coughlin (2007) contend that the use of any type of assessment does assist students in learning how to take annual high stakes assessments and provides them with the necessary skills to answer question types correctly, but fails in constructing long-term application skills. A conclusion could be drawn that because most annual state assessments do not provide for longitudinal analysis, it is difficult to predict success from one year to another without the use of both formative and interim assessments.

Assessments, School Administrators, and the Educational Program

While teachers use student assessment data to design and adjust their instructional programs and practices, school administrators use the same data to identify school wide trends in order to design and adjust the school's educational programs, set school wide

goals, allocate resources, prioritize efforts, and provide for staff professional development (California Comprehensive Center, 2006).

According to Huff (2009), Jakicic (2009), and Wohlstetter (2009) school administrators, as the instructional leader in assessments, are responsible for ensuring that teachers follow a common curriculum, analyze and interpret assessment data, and facilitate collaborative teacher teams in using assessment data to design and adjust their instructional programs and practices. Huff (2009) also suggested that principals are instrumental in fostering an environment, which allows teachers to share their personal experiences in the analysis and interpretation of student assessment data. By sharing their experiences and practices, teachers can build on each person's individual ideas and expand their own learning in ways that they cannot do alone. DuFor et al. (2009) noted that when teachers have opportunities to reflect upon their practices and collaborate with other teachers about their collective learning, they are able to make the connections they need to adjust their practices in support of greater student learning.

In a 2008 study of principals' use of assessment data for decision-making, Shen and Cooley concluded that "there had been little or no attempt to connect student assessment data with horizontal and vertical curriculum articulation, instruction, scheduling, community demographic trends, time on task or opportunity to learn and purposeful professional development" (p. 321). Shen and Cooley (2008) also found that although all of the principals had used student assessment data, very few had analyzed that data in relationship to non-assessable data such as student backgrounds, community influences, and teaching data. Additionally, the research also suggested that most of the principals also failed to tie that data into their school's educational and instructional

programs (Shen & Cooley, 2008). In fact, they suggested that most of the principals had primarily used the students' assessment data as an accountability measure, rather than as a tool to design and adjust their educational and instructional programs and practices.

Predictive Ability of Assessments

Several studies have concluded that by aligning formative, interim, and summative assessments, educators will be able to use student performance data to monitor student progress against the state content standards and to accurately predict and prepare them for future high stakes state and national performance assessments (e.g., Black & Wiliam, 1998; Brown & Coughlin, 2007; Guskey, 2007; Reeves, 2007; Silver et al., 2009; Stecker & Fuchs, 2000; Stichter et al., 2009; Stiggins, 2004, 2008). By linking student achievement over time on both school assessments and state summative assessments educators can more accurately measure student achievement and can more appropriately design and adjust their educational and instructional programs and practices, provide remediation and intervention support, and can better predict student achievement on future high stakes state assessments (Silver et al., 2009). The ability to predict student achievement on high stakes state assessments provides schools with the necessary information to design and adjust their educational and instructional programs and practices in advance of receiving the final assessment results, which are normally released long after adjustments can be made.

Thomas (2005) concluded that it is reasonable to infer that the proficiency level demonstrated by a student on school administered summative assessments would accurately reflect student performance on future high stakes standardized assessment. As Zupanc (2009) suggested, when the necessary inputs have been provided the desired

outputs will naturally follow. This would suggest that those teachers who adjust their instructional programs and practices to increase student achievement on formative and interim assessments will ultimately aid their students in performing well on future high stakes state assessments.

In a 2007 study of the use of interim assessments in the Mid-Atlantic region Brown and Coughlin found that while evidence suggested a correlation between school administered summative assessment and high stakes state assessments scores there was little evidence to suggest that these school wide assessments had predictive capabilities in isolation of other instructional support efforts. A greater measure of predictability, according to Brown and Coughlin (2007), is the use of longitudinal achievement data on formative and interim assessment instruments, which are appropriately aligned to school or district administered summative assessments and state and federal high stakes assessments (Brown & Coughlin, 2007). Furthermore, they concluded that any assessment used in isolation of the other types of assessment or instructional programs and practices, even if aligned to the state assessment, fails to promote deep learning and engage students in their own academic progress monitoring (Brown & Coughlin, 2007).

Data Analysis

Several factors, including familiarity with the content, the type of assessment instrument, and knowledge of students' background and past performance can influence the analysis and interpretation of student assessment data (Olah, Lawrence, & Riggan, 2010). Accordingly, these influencing factors contribute to how educators connect assessment data to their educational and instructional programs and practices and any required adjustments. These factors also help to shape their overall evaluation of student

progress, as they analyze and interpret assessment data in the own context of their expectations (Olah et al., 2010).

The ability to effectively analyze and interpret student assessment data, whether formative, interim, or summative, is the critical link between the reporting of interim assessment data and the modifying of instruction (DuFor et al., 2009). By critically judging student assessment data at its various strategies educators can quickly identify whether or not learning is taking place, determine the level of learning attainment, and build a composite picture of student learning attainment across the full range of learning activities (Harlen, 2004).

Types of data analysis. White (2007) suggests that assessment data can be divided into two types: learning data and teaching data. The purpose of analyzing learning data is to acquire meaningful information about student achievement and curriculum alignment and sequencing, while teaching data provides information relative to the range of teacher actions and practices (White, 2007). By analyzing teaching data, educators have access to critical information with which to determine which instructional programs and practices may be effective for increasing student learning (White, 2007).

Teacher perceptions and data analysis. While conducting a study of the use of assessments in Philadelphia schools Olah et al. (2010) discovered that teacher analysis of assessment data was universally practiced. They suggested that most teachers frequently reviewed student assessment data, identified strengths and weaknesses, and conducted follow-on instructional activities to ensure that the results accurately reflected student learning (Olah et al., 2010). However, the extent to which this process proved effective was based on the teachers' perception of acceptable performance and they concluded that

teachers' perceptions varied based on such influencing factors as their professional backgrounds and experiences, their pedagogical content knowledge, and their knowledge of their student's past performance. Based on their research, they concluded that the instructional adjustments made by teachers was based mostly on what they perceived to be "procedural errors in applying the learning rather than student weaknesses based on conceptual errors, or lacking of understanding the concepts" (Olah et al., 2010, p. 245) which formed the basis of their instructional responses. They concluded that if teachers inaccurately interpreted student assessment data they would, as a result, inaccurately plan for corresponding instructional adjustments (Olah et al., 2010). They also concluded that because teachers develop instructional responses based on their perceptions of the causes of the low performance that they must first examine the purpose of the assessment and preemptively identify possible instructional adjustments as it relates to that purpose (Olah et al., 2010). This allows the teacher to view the data in an unbiased manner, and to provide responses that are tailored to the specific aims of the assessment rather than to a set of prescribed responses that may or may not have the desired effects.

Collaborative data analysis. Several studies have concluded that collaborative learning communities, such as grade level groups or departments, provide the ideal organizational environment for educators to learn analyze and interpret student assessment data, and then use that data improve student learning (Black & Wiliam, 1998b; Kruse et al., 1995; Mason, 2003). Kruse et al. (1995) noted, "individual skills and knowledge provide the foundation of the school's capacity, but a school's ability to manage complex cycles of innovation depends on the ingrained habits of learning from colleagues both within and across the work groups" (p. 34).

Research suggested that peer collaboration and instructional reflection as a critical component in data analysis and instructional development, which provides multiple perspectives between and across grade, levels and allowed teachers to present ideas to a group before implementing them in the classroom (Blanc et al., 2010; Olah et al., 2010; Wiliam, 2006). Blanc et al. (2010) found a significant correlation between an educator's knowledge of curriculum and instruction and the successful implementation and use of assessment data to inform instruction. In this study, they found that administrators and teachers who formed collaborative work groups to develop instructional programs and practices and data analysis protocols had contributed to individual teacher growth and increased student achievement (Blanc et al., 2010).

Assessment Feedback Loop

Research suggests that one of the most critical components in the assessment process is the ability of educators and students to appropriately reflect upon the learning opportunities provided to students and construct the necessary meaning from it in order to close the gap between what is taught and what is learned (e.g., Brookhart, 2001; Carless, 2007, Dunn et al., 2009; Henderson et al., 2007; Pan, Tan, Ragupathi, Booluck, Roop, & Ip, 2008; Pryor & Crossaurd, 2008; Rushton, 2005, Stiggins, 2007). In fact, Hattie (1992) found that relevant and timely feedback to be the most powerful modification a teacher could make to increase student learning. Additionally, Stiggins (2007) noted "truly productive assessments cannot merely be about qualities of instruments and the attributes of their resulting scores. Rather, it must also be about the impact of that score in the learning" (p. 59).

Feedback and the instructional program. Banger-Drowns, Kulik, and Morgan (1991) while conducting a meta-analysis of 58 experiments, found that "although periodic feedback generally improved student performance, the type of feedback students received had the largest effect on performance" (p. 227). They also found that teachers who had explicit processes for providing academic achievement feedback to students and who had specifically designed or adjusted their instructional programs and practices based on test scores experienced significantly higher student achievement levels than other teachers. Olah, et al. (2010) concluded that the use and type of feedback was based on teacher experiences and the meaning that they created from those experiences. These experiences determined what type of feedback teachers considered most value to their students

Several studies have suggested that to increase student achievement on high stakes assessments, students must first internalize the data provided from formative, interim, and summative assessments (e.g., Brookhart, 2001; Carless, 2007; Dunn et al., 2009; Henderson et al., 2007). Henderson et al. (2007) also concluded that formative, interim, and summative assessments must be longitudinal, in that it must continuously assess current and previous learning in an effort to allow students to create meaning from the learning and be able to apply it to future situations. Research has also suggested that feedback is not limited to the data and advice teachers give directly to students, but can also come in the form of the instructional designs and practices (Pan et al., 2008). In a 2007 study, Carless found that as a consequence of assessment feedback students began to construct their own academic identities. He concluded that this did not happen in isolation, but rather it was the end result of teachers preemptively identifying expected

learning outcomes, designing the instruction in support of those outcomes, correctly analyzing the assessment data, and then providing relevant feedback to the students in an attempt to help them construct deep meaning of the learned curriculum (Carless, 2007). By providing opportunities for student to reflect on their learning they are enabled with the appropriate information to make the necessary adjustments to their academic behavior (Dunn et al., 2009).

From feedback, students are able to create meaning of their learning and properly adjust their own academic behavior as a result. Here, teachers use the data to provide feedback to the student and to adjust their instruction, while students use the data to become more reflective learners by adjusting their own academic behavior. Finally, teachers must reflect on the student's use of the feedback as they develop or adjust their instruction to assist the students in developing deep learning.

Categories of feedback. Feedback can be divided into two categories: descriptive and evaluative (Davies, 2007). Descriptive feedback is designed to provide students with specific, detailed recommendations for improvement before the next assessment. This feedback is formative in nature and is based on student performance against a specific criteria or rubric. The most effective descriptive feedback is placed in the context of the students' past and current performance as well as their expected future progress. This allows the student to better internalize the feedback and conceptualize their current and future progress. Here, the teacher needs to possess a strong understanding of the curriculum, pedagogy, and how students process information (Stecker & Fuchs, 2000). Evaluative feedback, on the other hand, is intended to provide students with information regarding their performance in relation to their peers and to an established set of

standards (Davies, 2007). Because evaluative feedback is based on summative assessments, students normally receive limited descriptive information, as teachers rely mostly on letter grades or points in order to define student performance. Students who receive evaluative feedback usually understand whether or not they need to improve. However, Davies (2007) concluded that unless students can decode the evaluative feedback measurement, they may not have enough information to understand how to improve.

Elements of feedback. Useful and timely feedback is composed of two elements: the teacher providing the feedback and the student receiving it (Blanc et al., 2010; Stecker & Fuchs, 2000). In the process of providing useful feedback educators are responsible for ensuring that it is based on relevant assessment data tied to the content or skill to be performed (Blanc et al., 2010). Blanc et al. suggested that teachers must deconstruct the standards and content to be learned, identify the levels of expected proficiency, and after the assessment, provide students with information to improve their academic practices. Teachers must also elicit feedback from the students concerning their level of understanding in order to adjust their own instruction or provide additional learning opportunities (Harlen, 2005). The student on the other hand, is responsible for constructing meaning of the learning and identifying the gap between what was taught and what was learned (Blanc et al., 2010). Here the student needs to learn how to interpret that feedback from the teacher and the assessment in order to reflect appropriately on the data.

Feedback cycle. From their research Pryor and Crossaurd (2008) found that to increase student achievement on high stakes assessments, students must first internalize

the data provided from formative and summative assessments. In a 2001, study Brookhart concluded that assessments coordinate the perceptions and actions of both the teacher and the student. In fact, she found that students frequently discussed teacher feedback in terms of how it motivated them to adjust their own practices (Brookhart, 2001). As a result of this study Brookhart identified three steps to the feedback cycle: (a) attending to the goals, (b) designing strategies to meet the goals, and (c) monitoring the gap between what was taught and what was learned.

By providing various learning opportunities, formative and summative assessments provide the necessary feedback for students in order to monitor their own progress and teachers to effectively adjust the instruction in support of student learning. They concluded that by refocusing the purpose of the assessment from evaluative to informative, the assessment data enabled students to construct meaning of the learning and to create a new identity as a learner (Pryor & Crossaurd, 2008). Here, the students are enabled to take ownership of the learning and to begin to self-monitor their progress.

According to Brookhart (2001) both the teacher and the student need to have a clear vision of the learning goals so that the teacher can design instructional programs to support student learning and the student can internalize those goals and monitor their own progress throughout the learning process. She suggested that as students refined their conception of their learning goals they developed a greater sense of academic motivation, which led to greater academic performance.

Student summative feedback of teacher effectiveness. In a study conducted to devise a method for quantifying students' feedback to increase their usefulness in complimenting and confirming teacher rating, Pan et al. (2008) found that teachers whose

instructional designs and practices were more student centered received higher marks than those designs which were more teacher centered. This study also found that the most common qualitative feedback given to successful teachers were, “'engaging', 'interesting', and 'helps in understanding '” (Pan et al., 2008, p. 95). This would suggest that as teachers designed their instructional programs and practices as a result of their analysis and interpretation of both learning and teaching data to meet the needs of their students, students reflected more positively on the teachers’ role in helping them learn. They concluded that this could be attributed to one of two factors. First, the teachers may have over time developed an awareness of instructional designs, which foster greater learning, or they have reviewed the data from earlier surveys and made the necessary adjustment in order to receive higher praise (Pan et al., 2008). In either situation, teachers adjusted their behavior as a result of summative feedback of their practices.

Assessments and Instructional Programs and Practices

Research suggests that teachers who use curriculum embedded measurements to design and adjust their instructional programs and practices demonstrate greater student academic achievement than those teachers who do not (Stecker & Fuchs, 2000). Stichter et al. (2009) also suggested that teachers who conduct frequent classroom assessments have a better understanding of their students’ academic performance levels.

In their research Perie et al. (2007) found a connection between assessments and the educational and instructional programs and practices and concluded that assessments provide both an opportunity to determine the level of student learning and a determination of whether a particular instructional strategy proved effective in supporting student learning. This study would suggest that throughout the instructional program

teachers must use assessment data to make the necessary on-the-spot adjustments to assist students in their learning (Perie et al., 2007). They also suggested that after examining interim and summative assessment data, educators must use that data to provide intervention or remediation support for students in need, as well as to evaluate the effectiveness of the overall educational and instructional programs and practices.

In their 2010 multi-method study of the use of benchmark assessments in Philadelphia schools, Blanc et al. found that benchmark assessment scores significantly increased when the use of the assessments were combined with strong school leaders who promoted data-driven decision-making combined with a focus on highly effective instructional practices, targeted professional development activities, and collective responsibility for student achievement.

Integration of assessments into the instructional program. Recent studies have suggested that the use of assessments as an integral part of the educational and instructional program provides the necessary information for educators to analyze and interpret student performance data in order to adjust their educational and instructional programs and practices (e.g., Brown & Coughlin, 2007; Black & Wiliam, 1998a; Carless, 2007; Guskey, 2007; Henderson et al., 2010; Olah et al., 2010; Reeves, 2007; Silver et al., 2009; Stichter et al., 2009; Stecker & Fuchs, 2000; Stiggins, 2008). Specifically, Carless (2007) concluded that there is evidence to suggest that assessments used in conjunction with focused instructional designs and adjustments based on timely data analysis foster greater student learning. Furthermore, Guskey (2007) suggested

> If assessments are to provide vital information for both students and teachers, then it makes sense that they do not mark the end of learning. Assessments must be

followed by high-quality corrective instruction designed to help students remedy whatever learning errors identified with the assessment. (p. 21)

Stecker and Fuchs (2000) found that frequent assessments and the resulting instructional adjustments support greater student learning. In a study of special education teachers and their students, they found that those students whose teachers monitored their students' academic progress and then designed and adjusted their instructional programs and practices as a result of that analysis had performed significantly higher on future assessments than did their a peers whose teachers did not design and adjust their instructional programs and practices based on individual student assessment results (Stecker & Fuchs, 2000). They concluded that regular instructional adjustments throughout a course of study based on an analysis of student academic needs increased end-of-year performance on high stakes assessments. By linking instructional adjustments to individual student assessment data, the teacher is able to use representative student data to gauge their own instructional effectiveness and to plan instruction for a larger group of students with similar needs (Stecker & Fuchs, 2000).

Research has shown that an educator's pedagogical and subject matter knowledge is directly related to their assessment design, analysis, and interpretation procedures, when teachers use their subject and pedagogical knowledge base to provide appropriate learning activities, make necessary instructional adjustments, and identify student achievement levels, (Harlen & James, 1997; Jones & Moreland, 2005). In fact, Harlen and James (1997) argued that teachers could not appropriately provide essential learning experiences designed to foster a greater understanding of the concepts and ideas for their students if they themselves do not know those concepts and ideas. Through their

research, they concluded that when teachers lacked a refined pedagogical content knowledge and instead relied on content or subject matter tasks they were unable to identify key subject concepts and ideas, which limited their abilities to provide effective descriptive feedback to their students. However, as teachers moved away from the reliance on defined subject matter tasks and began to develop multiple learning outcomes for their students, they were to better assess their students' learning and to analyze and interpret those results (Harlen & James, 1997).

Assessment and resulting instructional practices. In a 2003 study examining the relationship between student scores on the Maryland State Performance Assessment Program (MSPAP) and instructional programs and assessment practices, Stone and Lane found a significant relationship between the changes in student test scores and the changes in the instructional program as a result of both formative and interim assessment data. This research was grounded on an assumption derived from a 1992 study conducted by the National Council on Education Standards and Testing which suggested that the use formative and summative "performance-based assessments encourages the use of instructional strategies and techniques that foster reasoning, problem solving, and communication" (p. 2). Achievement data revealed that student performance on the MSPAP progressively increased between 1993 and 1998, with the greatest gains in 1993 and 1994, followed by a leveling of gains in 1995 and 1996 and smaller increases in 1997 and 1998 (Stone & Lane, 2003). In explaining the initial growth rates, they theorized that, "with the introduction of an assessment program it would be reasonable to expect not only changes in performance on the assessment with time, but also corresponding changes in classroom instruction and assessment practices with time" (p. 16-17). This

would suggest that as schools placed greater emphasis on the analysis on those state assessed curriculum areas, there was a correlating change in test scores as a result. Unfortunately, much of this annual data is not provided in a timely manner for educators to design and adjust their educational and instructional programs and practices to address whole school academic needs.

In their 2007 study conducted of Massachusetts's schools concerning how benchmark assessments affect student learning, Henderson et al. found that the use of any one type of assessment in isolation of the others provides limited data with which teachers can adjust their instructional programs. They concluded that these assessments must produce data that can be used to inform instruction (Henderson, et al. 2007). Additionally, Henderson et al. (2007) found that there was no significant evidence to suggest that schools that had administered quarterly benchmark assessments scored differently than schools that did not. However, in this study selected schools administered quarterly benchmark assessments and based on the analysis and interpretation of assessment results students were provided a system of prescribed intervention. Henderson et al. (2007) also found that this intervention did result in improvements in student scores on retests. This would suggest that the assessments by themselves do little to improve student test scores. However, Henderson et al. (2007) concluded that it was the overall educational program and support based on an analysis of the assessment data, which improved test scores and not merely the implementation of benchmark assessments in and of themselves. To be sure, schools that did not administer the quarterly assessments, in many cases, scored on par with those that administered the assessments, but did not provide intervention services (Henderson et al., 2010).

In a 2007 study conducted by Brown and Coughlin, which focused on student achievement on state high stakes assessments and their performance on locally administered benchmark assessments, they found that assessments used in isolation of other types of assessments and related instructional programs and practices did not support increased student achievement. They asserted that by analyzing students' assessment data educators were provided with valuable information with which to design and adjust their educational and instructional programs and practices (Brown & Coughlin, 2007).

Phases of the assessment process. Wiliam (2006) identified three phases of the instruction and assessment process that educators must navigate through in order to effectively meet the needs of their students. First, the teacher must elicit useful evidence from the student. Second, teachers must correctly analyze and interpret the data in terms of student learning needs. Third, teachers must make instructional adjustments in order to meet those needs. Wiliam (2006) also suggested that those teachers who are most familiar with the content and curriculum, as well as instructional best practices, are better able to adjust the instruction necessary to support student learning, and notes that many teachers either do not possess a rich knowledge base of the curriculum or do not put in the time to connect the curriculum to the instruction practices. Furthermore, he noted that far too many teachers do not consider students' prior knowledge when designing the curriculum.

Summary

The literature review for this study demonstrates that while the implementation of an assessment program can have a positive impact on student learning and achievement

on state and national assessments, it is when educators have a strong understanding of the types and purposes of assessments are they better able to construct meaning of their students' performance in order to better design and adjust their instructional programs and practices. The way educators view their experiences form the basis for their practices. Their personal backgrounds, beliefs, preparation for teaching, and daily teaching experiences influence the meaning that they create from those experiences which will guide further actions and decisions. This study is intended to address the gap in the literature and to add to the body of knowledge concerning the experiences of teachers and administrators while analyzing and interpreting student assessment data, constructing meaning from this data, and designing and adjusting their educational and instructional programs and practices as a result of this process by identifying those experiences which are similar or dissimilar among the two groups, as well as the most critical issues which provide an in-depth understanding of the experiences and help to define the essence of the phenomenon.

CHAPTER THREE: METHODOLOGY

This chapter includes an overview of the research design, participant recruitment and selection, research setting/site, researcher's role, data collection, data analysis, methodological rigor, and ethical considerations.

Introduction

The purpose of this qualitative empirical phenomenological study was to examine the experience of analyzing and interpreting student assessment data from the perspective of both teachers and administrators in order to: (a) identify those aspects of the experiences which are similar or dissimilar among the two groups, (b) identify the priorities and influences which affect those experiences, and (c) identify the most critical issues which provide an in-depth understanding of the experiences and help to define the essence of the phenomenon.

Through in-depth, individual interviews, on-line reflective journal postings, and follow-on focus group interviews, the participants' attitudes, emotions, thought processes, understanding of student academic skills and knowledge, and reflections on their own instructional effectiveness were revealed.

Because teachers and administrators create meaning from their previous experiences, and as they encounter new experiences, they either accommodate or assimilate the new knowledge in order to create new meaning or confirm existing meaning their experiences influence their attitudes and perceptions, as well as how each analyzes, interpret, and use the student assessment data (e.g., Bruner, 1960; Dewey, 1916; Mezirow, 1996; von Glasersfeld, 1995; Vygotsky, 1962). The specific problem to

be addressed in this study, then, was to identify the areas of common agreement and possible differences in the ways that teachers and administrators experience the phenomenon of analyzing and interpreting student assessment data within and across school systems and grade spans.

Research Design

This research was designed to be a qualitative study with an empirical phenomenological approach. The design is properly classified as qualitative, as it sought to examine people in their natural setting in an attempt to make sense of, or interpret, the meaning that they create from their experiences within the context of phenomenon (Denzin & Lincoln, 2005); phenomenological, as it sought to understand and construct meaning of the lived experiences from the perspective of the participants (Bogdan & Biklen, 1998); and empirical, as it sought to determine the underlying structures or essences of the participants' experiences through the participant's description of their experiences and the researcher self-reflection and (Moustakas, 1994).

A three-tiered, in-depth individual interview protocol, on-line reflective journal postings, and follow-on focus group interviews were used to collect data in order to gain a better understanding of the unique attitudes and perceptions of teachers and administrators while engaged in analyzing and interpreting student assessment data and using that data to design their instructional programs and practices in order to identify the emergent domains, sub-categories, topics, and critical issues of most concern to the participants.

Research Method

Creswell (2007) suggested that a qualitative research method provides the framework to explore, define, and assist in understanding a phenomenon and the experiences people encounter within the context of that phenomenon. Qualitative research, rather than quantitative, according to Creswell (2007), is more appropriate when the study requires a complex, detailed understanding of a phenomenon and when this level of detail can only be established by interviewing or observing people in their natural environment and when we want to hear the voices and stories of the participants. A qualitative methodology is also consistent with both the constructivist and transformation learning theories, which provides the theoretical framework for this research to understand teacher and administrator experiences in analyzing and interpreting student assessment data and the meaning that they create from those experiences. In qualitative research, "claims of knowledge are based upon constructivist perspectives . . . of individual experiences" (Creswell, 2003, p. 18). Quantitative methodologies, which rely on statistical analyses, are better suited for describing the correlation between variables fails to capture the voices, stories, and lived experiences of the participants involved in this study (Moustakas, 1994). For the purpose of this research, then, a qualitative approach, rather than a quantitative approach, was appropriate for understanding the essence of teacher and administrator experiences and to identify those influences and priorities, which affect these experiences.

Research Strategy

An empirical phenomenological research strategy was chosen in order to examine the experiences teachers and administrators encounter while analyzing and interpreting

student assessment to better understand those experiences which are similar or dissimilar among the two groups, as well as the most critical issues which provide an in-depth understanding of the experiences and help to define the essence of the phenomenon.

Phenomenology. The purpose of a phenomenological research strategy is to study the phenomenon of human experiences and to describe and interpret those experiences to reveal how the participants construct meaning from those lived experiences (Moustakas, 1994). Van Manen (1990) defined phenomenology as the study of the world as we immediately experience it, where the aim of the research is to gain a deeper understanding of the meaning of our everyday experiences and to fully explain those meanings as we live them in our everyday existence.

> Rooted in philosophy and psychology, the assumption is that there are many ways of interpreting the same experiences and that the meaning of the experience to each person is what constitutes reality. This belief is characteristic of all qualitative studies, but the element that distinguishes phenomenology from other qualitative approaches is that the subjective experience is at the center of the inquiry. (Ary et al., 2010, pp. 471-472)

In phenomenological research, according to van Manen (1990), lived experiences are both the starting and ending points. Because a person cannot reflect on lived experiences while living through the experience, the phenomenological researcher attempts to elicit participant reflection on experiences that have already passed. He concluded that the researcher must examine the participants' lived experiences as well as the essence of the phenomenon in order to relate "the particular to the universal, the part to whole, and the episode to totality" (van Manen, 1990, p. 36).

The researcher in a phenomenological study is tasked with identifying the essence of human experiences by creating a composite description of the experiences from all of the participants (Creswell, 2007). Here the researcher is specifically concerned with what the participants experienced and how they experienced it (Moustakas, 1994). This study was designed to identify the essence of the phenomenon of analyzing and interpreting student assessment data and resulting instructional program practices and designs through the lens of the teachers and administrators who have lived those experiences.

Empirical application. An empirical phenomenological approach is the process of returning to the "experience in order to obtain comprehensive descriptions that provide the basis for a reflective structural analysis that provides the essence of the experience" (Moustakas, 1994, p. 13). From this approach general or universal meanings are derived from the researcher's reflective analysis and interpretations of the participants' described experiences (Moustakas, 1994). Here, the researcher emphasizes commonalities and differences, which are present among the participants, as well as in the diverse occurrences of the phenomenon.

In the application of the empirical approach, Giorgi (1985) identified two levels of description, where data is first obtained to develop naive descriptions of what was experienced and then to identify the critical elements of the experience, as told by the participants. He suggested that the process begins with the identification of a concrete example of the phenomenon and then the researcher imaginatively varies it in order to distinguish its essential features from those which are only incidental or ancillary in order to construct multiple layers of meaning and capture the complexity of the phenomenon

(Giorgi, 1985).

> By adopting a strictly descriptive approach, we can let the phenomena speak for themselves, and when we do we discover that whatever appears suggests in its very appearance something more which does not appear, which is concealed . . . the given that is in the appearance of phenomena is "directionality," a direction is offered or a significance is held out which we pick up and follow, or turn away. (Girogi, 1985, p. 151)

Research Questions

In qualitative studies, the research questions are generally divided into two types: central questions and sub-questions (Creswell, 2007). Central questions are general in nature and provide the foundation for the development of subsequent questions, while sub-questions are narrow in nature and provide focus for interviews, close observations, and document analysis (Creswell, 2007). Creswell (2007) further divides sub questions into issue-oriented and procedural sub questions. Issue-oriented sub-questions are theoretical in nature and are designed to break the central question down into subtopics and issues, whereas procedural sub-questions are concerned with the research process and addresses the researcher's need for information related to the intent of the research (Creswell, 2007).

Following Creswell's (2007) recommendation, one central question, five issue-oriented sub-questions, and two procedural sub-questions were identified in order to describe the experiences of both teachers and administrators engaged in the analysis and interpretation of student assessment data in order to identify those experiences which are similar or dissimilar among the two groups, as well as the most critical issues which

provide an in-depth understanding of the experiences and help to define the essence of the phenomenon. The following central question and sub-questions guided this study:

Central Question

What is the lived experience of analyzing and interpreting student assessment data for teachers and administrators?

Issue Oriented Sub-Questions

1. What is similar or dissimilar about the factors that contribute to teacher and administrator motivation to analyze and interpret student assessment data?
2. What is similar or dissimilar about how teachers and administrators learned to analyze and interpret student assessment data?
3. What is similar or dissimilar about how teachers and administrators analyze, interpret, and use student assessment data to include their successes and challenges?
4. What is similar or dissimilar about what teachers and administrators think about and talk about when they try to make sense of assessment data and the resulting instructional programs and practices?
5. What is similar or dissimilar about how teachers and administrators describe their experiences in analyzing and interpreting student assessment data?

Procedural Oriented Sub-Questions

1. What are the domains of inquiry that facilitate the identification of the contexts or situations and which have influenced teacher and administrator experiences of analyzing and interpreting student assessment data?

2. What are the most critical topics or issues discussed by teachers and administrators that regularly resulted in high levels of satisfaction or dissatisfaction with the experiences of analyzing and interpreting student assessment data?

Participants

The participants for this study included ten teachers and five school site administrators. The teachers and site administrators participated in three in-depth, individual interviews, on-line reflective journaling, and follow-on focus group interviews. To protect the privacy of each participant, the school, and the district where they are employed, each participant created their own pseudonym. Additionally, the districts were labeled as District #1 and District #2.

Sufficiency and Saturation

Seidman (2006) identified two criteria for determining the number of participants-sufficiency and saturation of information. Sufficiency refers to the number and range of participants required to reflect those in the population, while saturation of information refers to the point where the researcher no longer learns anything new from the data collection (Seidman, 2006). He also identified a sample size of five to twenty-five participants as appropriate for a phenomenological study and suggested that the participants should share similar characteristics and have experienced the phenomenon being studied, which allows the researcher to identify common experiences (Seidman, 2006). Finally, Creswell (2003) noted, that "the idea behind qualitative research is to purposefully select participants that will help the researcher to understand the research question" (p. 185).

Sampling Procedures

Purposeful sampling with a maximum variation approach was used to select the participants for this study. For the purpose of this study, maximum variation refers to the range of teachers and administrators from which the sample was selected based on the following participant characteristics: (a) current grade level assignment, (b) teaching experience, (c) education level, (d) gender, (e) ethnicity, and (f) experience in assessment data analysis and interpretation. According to van Manen (1990), "the purpose of an in-depth interview study is to understand the experiences of those who are interviewed, not to predict or to control that experience" (p. 22). Participants selected for this study, then, had to provide enough experiential "detail and in sufficient depth that those who read the study can connect to that experience, learn how it is constituted, and deepen their understanding of the issues it reflects" (Seidman, 2006, p.51). Accordingly, participants were selected based on the appropriateness and richness of their characteristics and experiences relevant to this study.

The rationale for selecting a broad cross section of participants was to provide breadth and depth to the context wherein the phenomenon occurs. Elementary school teachers commonly teach multiple subjects and must analyze the data from a variety of perspectives, and focus on the students' achievement in multiple subjects. Teachers in middle and high schools, on the other hand, commonly teach the same subject multiple times in a day. As a result, these teachers tend to focus their data analysis on a single subject, apart from the students' achievement level in other subjects.

Recruitment

To create a pool of potential participants, an invitation to participate in an

anonymous online survey accessible through surveymonkey.com was sent via email to all teachers and administrators in the two participating districts (Appendix A). The survey was divided into three sections: (a) background, (c) attitudinal and (c) narrative (Appendix B). The background section included eight questions related to: (a) position, (b) grade level/grade span, (c) subject(s) taught, (d) educational experience, (e) gender, (f) ethnicity, and (g) highest level of education. The attitudinal section included the sub-sections of: (a) strategies, (b) states of emotion, (c) conditions and or constraints, which contained five attitudinal statements each. Using a 4-Point Likert-scale, participants ranked their responses from 1- Agree, 2- Somewhat Agree, 3-Somewhat Disagree, and 4-Disagree. The narrative section provided an opportunity for the participants to describe any significant experiences and the feelings in analyzing and interpreting student assessment data. At the end of the survey, the participants had the opportunity to volunteer for the study by providing their name, phone number, and email address.

In all, ninety-five teachers and sixteen administrators completed the survey and twenty-three teachers and eleven administrators volunteered for the study, from which ten teachers and five administrators were selected for participation. Prior to participating in the research, each participant was required to read and sign a *Participant Consent Form* Appendix C). Table 1 provides a demographic summary of those teachers and administrators who participated in the survey.

Table 1

Participant Pool Demographic Summary

	Teacher	Administrator			
Position	64%	36%			
	Elementary (K-5)	Middle/Jr. High (6-8)	High School (9-12)	Other	
Grade Level/Span	38%	25%	36%	1%	
	English Language Arts	Mathematics	Science	History/ Social Studies	Other
Subject Taught	28%	25%	24%	13%	10%
	Less than 10 years	10-20 years	More than 20 years		
Experience	24%	44%	34%		
	Bachelor	Master	Specialist	Doctorate	
Highest Level of Education	33%	53%	6%	8%	
	Male	Female			
Gender	28%	72%			
	Asian	Black	Hispanic	White	Other
Ethnicity	3%	14%	11%	61%	11%

Note. The percentages refer to the total number of participants who took the survey from both districts.

Teachers. Ten teachers were selected for this study with one teacher being

selected from each grade level for Grades 2 through 11 (Table 2). These grades were selected because they represent those grade levels participating in the annual administration of the California Standards Test (CST). To the extent possible, teachers in each grade level or subject area possessed different characteristics according the maximum variation criteria. This selection criterion provides for a richer source of experiences within a short research time frame, which provides for greater levels of generalizability and transferability.

Administrators. Five administrators were selected to participate in this study, with at least one administrator being selected from elementary, middle, and high school (Table 2). The elementary and middle school administrators were purposely selected from different school districts.

Table 2

Research Participant Characteristics

Participant	District	Position	Grade Span	Primary Subject Taught	Total Years of Experience	Gender	Ethnicity	Degree Earned
Andre	District #1	Admin	6-8	Admin	12	Male	Hispanic	MA
Angela	District #2	Admin	9-12	Admin	15	Female	Black	EdD
Annie	District #1	Teacher	K-5	MS	22	Female	White	MA
Carly Sue	District #1	Teacher	K-5	MS	7	Female	White	BA
Caroline	District #2	Teacher	9-12	Math	15	Female	White	BA
Frank	District #1	Teacher	K-5	MS	6	Male	White	MA

Janelle	District #2	Teacher	9-12	HSS	12	Female	Hispanic	BA
Joshua	District #2	Teacher	6-8	MS	9	Male	Hispanic	PhD
Leonard	District #2	Admin	K-5	Admin	23	Male	White	MA
Lin	District #2	Teacher	9-12	Math	24	Female	Asian	MA
Martin	District #2	Admin	6-8	Admin	17	Male	White	MA
Michael	District #1	Teacher	6-8	Math	16	Male	Black	BS
Shirley	District #1	Teacher	K-5	MS	14	Female	White	BA
Sophia	District #1	Teacher	6-8	Math	6	Female	Hispanic	BA
Tiana	District #1	Admin	K-6	Admin	9	Female	Black	MA

Note: ELA- English Language Arts; HSS- History/Social Science; MS- Multiple Subject.

Site/Setting

Site

This study involved teachers and administrators from two different school districts located in the northeastern portion of Southern California. One district is located in a suburban community while the other is located in a rural, mountain community. For the purpose of this study the districts were identified by pseudonyms: District #1 and District # 2. As shown in Table 3, both school districts vary in size, racial demographics, and poverty rate, while Table 4 provides information relative to teacher and administrator demographics.

Table 3

District Student Demographic Data

	Grades Served	# Schools	Enrollment	Ethnicity (%) Black	Hispanic	White	Other	Poverty Rate
District #1	K-8	5	3,300	27%	48%	21%	4%	82%
District #2	K-12	6	4,700	8%	13%	73%	6%	63%

Note. Poverty Rate is determined by the percent of students qualifying for the Free and Reduced Lunch program.
Source: California Department of Education (http://data1.cde.ca.gov/dataquest/).

Table 4

District Administrator and Teacher Demographic Data

	Assigned	Experience Average Years	Ethnicity (%) Black	Hispanic	White	Other	BA	MA
District #1	155	11.4	8	16	113	18	125	29
District #2	215	17.3	0	9	203	4	150	64

Source: California Department of Education (http://data1.cde.ca.gov/dataquest/).

Setting

A phenomenological study, according to Creswell (2007), requires the participants to have experienced the phenomenon and as a result values the shared

characteristics of the participants. As the focus of the study is on the experiences teachers and administrators encountered while analyzing and interpreting student assessment data, a description of the setting wherein the phenomenon occurs, rather than the site is more appropriate (Creswell, 2007).

The setting for this study involves the common occurrence of the administration and analysis of regularly scheduled formative, interim and summative assessments, regularly scheduled data analysis meetings, and the use of commercially produced data storage software. This provides for a common framework for this study.

Regularly scheduled assessments. Concerning the administration and analysis of quarterly district benchmark assessments, each district is at different stages of the assessment implementation process. District #1 is in its third year of implementation. Previously, the middle school was the only school in the district to implement school wide benchmark assessments and formal data analysis protocols. The practice of district wide common assessments has been in place for five years. For School District #2, the formal process of data analysis and resulting instructional design has been in place for four years at all of the schools. The district does not have formal district wide practices for data analysis, but reserves those processes to the school sites.

Data analysis meetings. Each district provides opportunities for the teachers and administrators to analyzes and interpret student assessment data in regularly scheduled data analysis meetings at each school site. These meetings are defined as "data analysis meetings," "grade level meetings," and "department meetings." Currently, District #1 allows their schools to conduct up to four meetings per month, while District #2 allows their schools to conduct one general staff meeting and one grade-level or department

meeting per month.

Data storage software. Both districts in this study use commercially produced data analysis software to more effectively and efficiently store and analyze student assessment data. District #1 uses the Online Assessment and Reporting System (OARS) software, while District #2 uses Edusoft. Both software programs allow educators to scan or manually input raw student assessment data. The software then provides educators with several individual and group data reports (e.g., item analysis, growth analysis, comparisons, etc.). Educators can select the appropriate report relative to the type and level of analysis they are engaged in.

Researcher's Role

For a qualitative empirical phenomenological study the researcher is positioned within the study to collect data in order to understand, interpret, and create meaning from the shared experiences of the participants (Moustakas, 1994; van Manen, 1990). According to van Manen (1990) qualitative researchers must interpret what they see, hear, and understand in order to reveal the essence of the experiences within the phenomenon. In a phenomenological study Moustakas (1994) recommended that the researcher must engage "in a disciplined and systematic effort to set aside prejudgments regarding the phenomenon being investigated . . . to be completely open, receptive, and naive in listening to and hearing research participants describe their experiences of the phenomenon being investigated" (p. 22).

As noted by Ary, et al. (2010), the research subjects may become biased by either the actions of the researcher during the course of data collection or by their participation in the study itself. As the human collection instrument in this study, my role during the

individual and focus group interviews was to "listen, prompt when necessary, and encourage subjects to expand and elaborate on their recollections of experiences" (Ary et al., 2010, p. 473).

Data Collection

The focus of this qualitative empirical phenomenological data collection was to elicit verbal and written accounts of the participants' first-hand experiences, reflections, judgments, and the resulting meaning that is created from those experiences in order to create an authentic picture of the lives of the participants and the meaning of the essence of the experience (Creswell, 2007; Moustakas, 1994; van Manen, 1990). The data collection for this study included three in-depth, individual interviews, online reflective journaling postings, and follow-on focus group interviews.

In-Depth, Phenomenological Interviewing

A three-tiered, in-depth, individual interview protocol was conducted in order to understand the lived experience of analyzing and interpreting student assessment data for teachers and administrators by identifying areas of common agreement and possible differences in the ways that teachers and administrators experience the phenomenon within and across school systems and grade spans, as well as the most critical issues raised among the participants, which affect their level of satisfaction or dissatisfaction with those experiences.

Interviewing, according to Seidman (2006), "provides access to the context of people's behavior and thereby provides a way for researchers to understand the meaning of that behavior . . . [and] allows us to put behavior in context and provides access to understanding their action" (p. 10). Interviewing serves two purposes: (a) raw data

collection method concerning participant experiences within the context of the phenomenon and (b) providing coordination with other data collection methods in order to develop a richer and deeper understanding of the participants' experiences (van Manen, 1990).

According to Moustakas (1994), structured and semi-structured interviews are intended to reveal such participant attributes as emotions, reflections, and judgments. Through interviewing, the researcher engages the participants with a series of open-ended questions in an effort to assist them in reconstructing their experiences within the context of the phenomenon under study and allows the researcher to build upon and explore participants' interview, as well as their observed actions (Seidman, 2006).

Originally developed by Dolbeare and Schuman (1982) and later modified by Seidman (2006), in-depth, phenomenologically-based interviewing involves conducting a series of three interviews in an effort to assist the participants in reconstructing an experience and placing it into its appropriate context in an effort to create meaning from that experience. This three-interview protocol focused on: (a) putting the experience into context, (b) reconstructing details of the experience, and (c) reflecting on the experience (Seidman, 2006). Together these three interview tiers form the foundation of identifying the primary domains, sub-categories, topics, and critical issues concerning the experience of analyzing and interpreting student assessment data.

Using the research questions and the results of the *Potential Participant Survey* as a foundation, the three in-depth individual interview protocols were initially developed and later refined throughout the data collection process.

Tier I individual interviews. The purpose of the first interview was to focus on

putting the participants' experiences into context by eliciting as much information about them as possible in regard to their previous experiences with analyzing and interpreting student assessment data (Appendix D).

Tier II individual interviews. The purpose of the second interview was to concentrate on the concrete details of the participants' present lived experiences regarding the process of analyzing and interpreting student assessment data and designing and adjusting their instructional programs and practices as a result of that process. (Appendix E).

Tier III individual interviews. The purpose of the third interview was to elicit responses from the participants focusing on the meaning that they have created as a result of their past and present experiences in analyzing and interpreting student assessment data and in designing and adjusting their instructional programs and practices (Appendix F).

Content and face validity. To establish content and face validity, and thereby ensuring the interview protocols effectively measured teacher and administrator experiences as intended, a panel of three experts in the field of data analysis reviewed the preliminary in-depth, individual interview questions and provided feedback. This peer review panel consisted of the Lead Consultant for the Regional System of District and School Support (RSDSS) for Region 11, the Director of Assessment and Accountability for the Los Angeles County Office of Education, and the Director of Teacher Education, California State University, Bakersfield.

Pilot interviews. As recommended by Seidman (2006), a pilot interview was conducted with three members of the Los Angeles County Assessment and

Accountability Director's Network. This pilot group was composed of two teachers on special assignment and one district office administrator from three different school districts. The purpose of the pilot interview was to reflect upon the practical elements of the interview and to try out the interviewing design to determine such attributes as (a) the average duration of each interview, (b) the general clarity of the interview questions from a participant's perspective, (c) the general ability of the participants to provide relevant response, (d) the general flow between questions, and (e) the connection between each interview tier.

On-Line Reflective Journaling

The purpose of the online reflection was twofold: (a) to assist the participants in recording their thoughts in preparation for the interviews and (b) to capture their feelings and thoughts, as they are experienced. The participants utilized surveymonkey.com to post their on-line reflections (Appendix G). According to van Manen (1990), reflective journaling is one strategy for participants to reflect on their experiences by identifying any problems, successes, or even relationships within the context of the phenomenon. The participants used the online reflective journals to chronicle their experiences and the meaning that they create from those experiences within the context of this study. Through reflective journaling, the participants were also able to collaborate with other participants concerning the shared experiences. The participants received a weekly reminder to post a journal entry and were encouraged to recall and reflect upon the events or experiences since their last journal entry.

By providing the participants with an additional data collection source they had have the ability to immediately, or at their convenience, log their experiences and reflect

upon them. This activity was intended to enable the participants to more fully reconstruct their experiences and to elaborate upon those experiences without the pressure of the time and setting of an in-depth interview. Additionally, the participants had the opportunity to share their experiences with other participants in anonymity. This provided another opportunity for participants to reflect on their experiences and may even provide prompts as they begin to interpret the meaning of their experiences.

Follow-On Focus Group Interviews

As Creswell (2007) suggested, focus group interviews are beneficial when the participants have similar experiences. The purpose of the follow-on focus group interview, then, was to bring together the potentially different perspectives of teachers and administrators from each grade level in order to produce a discussion of other aspects of the phenomenon under study, which was not originally considered (Ary et al., 2010) and to validate what individual participants provided in the interviews and online reflective journal postings (Appendix H). The focus group interviews were conducted after the domains and subcategories were constructed and the critical issues were identified. These interviews served as a reliability check, where participants had the opportunity to validate the results of the domain analysis.

Data Analysis

In its simplest form, qualitative data analysis involves: (a) preparing and organizing data, (b) reducing that data into categories, themes, domains, or clusters, and (c) then representing that data in order to identify the essence of the phenomenon (Creswell, 2007; Moustakas, 1994; Seidman, 2006; van Manen, 1996; Yin, 2003).

Comprehensive Data Analysis Plan

The purpose of any phenomenological analysis is to examine the participants' lived experience from their perspective in order to better understand the essence of a phenomenon (Creswell, 2007; Moustakas, 1994; Patton, 1990; Seidman, 2006; Spradley, 1979; van Manen, 1996; Yin, 2003). A comprehensive data analysis plan, then, describes the objectives, levels of analysis, and strategies to be employed. The objective of this analysis plan, as identified in the *Data Collection and Analysis Logic Map* (Figure 1), was to reduce the large amount of data collected through in-depth, individual interviews, on-line reflective journal postings, and follow-on focus group interviews in order to identify the essence of the phenomenon, as well as the most critical issues raised by the participants by providing an in-depth horizontal and vertical analysis of the lived experiences of analyzing and interpreting student assessment data among teachers and administrators and all the possible variations therein. The horizontal analysis was conducted across all participants in order to identify the emergent topics and sub-categories within each domain to better understand the context and complexities of the phenomenon, while a vertical analysis identified the similarities and dissimilarities between the participant groups.

As Seidman's (2006) framework for collecting data through in-depth, phenomenological interviewing was employed, his recommended process for studying, reducing, and analyzing the interview texts and on-line reflective journal postings was also employed. Through this process, the researcher: (a) reads and reflects on each data set in order to identify and select significant passages of interest and relevance, (b) classifies the selected data by reducing the significant passages of interest and relevance

into broader categories, and then (c) develops profiles of each participant as a way of presenting the data in order to reveal the essence of the phenomenon (Seidman, 2006).

As the research sub-questions required a reflection on the common perceptions and categorization of the participant's lived experiences in order to reveal those aspects of their experiences, which are similar or dissimilar, as well as those critical issues, which affected those experiences, a domain analysis was also conducted in order to facilitate the classification of these data (Spradley, 1979). This process is also consistent with the empirical approach, where general or universal meanings are derived from the researcher's reflective analysis and interpretations of the participants' described experiences (Moustakas, 1994).

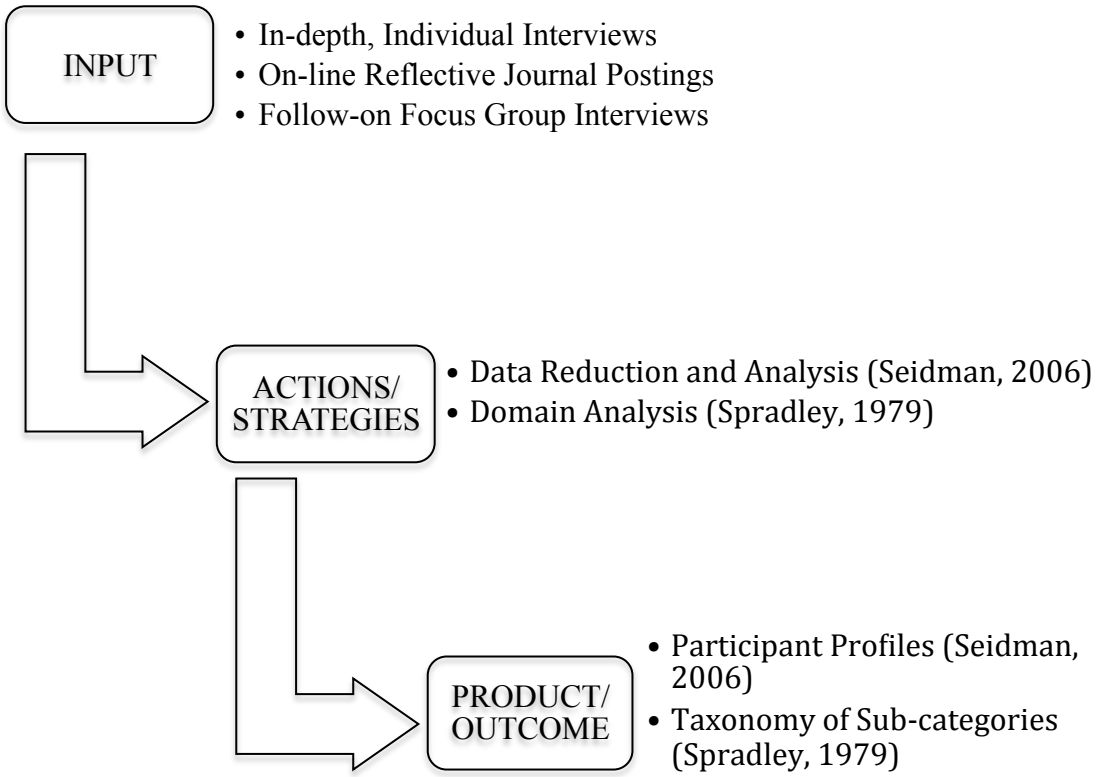

Figure 1. *Data Collection and Analysis Logic Map*. This logic map is based on Irving Seidman's (2006) recommended data collection and analysis process together with James Spradley's (1979) domain analysis procedures.

Phase I: Identification of significant passages of interest and relevance. The purpose of this first phase of analysis was to reduce the data into significant passages of interest and relevance in order to identify the taxonomy of sub-categories and to arrange the participant profiles. In identifying passages of interest and relevance, Moustakas (1994) suggested that the researcher uses his or her own judgments as to the interest and relevance of each passage. Husserl (1970) argued because one's experiences are personal, and the meaning that they construct from those experiences form the basis of their worldview, the researcher cannot impose his or her own experiential meaning on the participants' experiences. In a phenomenological study, therefore, he suggested that there should be two perspectives, those of the participant who is experiencing the phenomenon and that researcher who is interested in and studying the phenomenon (Husserl, 1970).

During the process of phenomenological reduction the researcher must first bracket out by clarification or elimination any presuppositions, preconceptions, and biases regarding the phenomenon under investigation in an effort to accurately describe the essence of the phenomenon from the perspective of the participants (Denzin, 1989; Katz, 1987; Moustakas, 1994). Accordingly, van Manen (1990) and Moustakas (1994) recommended that this process begin prior to data collection and continues throughout the collection and analysis through personal reflective journaling, peer reviews, and reliability checks.

During the selection of passages of interest and relevance, each passage was given equal weight. The specific criteria for selecting those passages was based on the extent to which they: (a) related to the research question, (b) were stated with confidence by the

participant(s), (c) raised additional questions, (d) raised an important contextual point, and/or (e) was backed up by supporting evidence from the literature (Seidman, 2006). Accompanying each selected passage was a written reflection identifying why it was selected. To minimize personal bias, a reliability check was performed with the participants to ensure that the passages were of significant relevance and of particular concern to them. Additionally, so as not to influence or prejudice the participants throughout the data collection process, reliability checks were conducted only after all of the interview tiers were completed.

Phase II: **Data classification and analysis.** During this phase of analysis, the identified topics and issues were identified in the selected passages of interest and relevance and were further reduced by labeling and indexing them into specific domains (Spradley, 1979). These domains are general categories, or clusters, of inquiry representing a similar focus or trait and are based on gaining an understanding of what the participants have experienced in terms of the phenomenon and what the contexts or situations are, which have typically influenced or affected the participants' experiences (Patton, 1990).

In creating these domains, the selected passages of interest and relevance were first reviewed to identify a preliminary list of topics and issues raised by the participants, which were then indexed and collated across the interview data sets. These issues and topics where then clustered into preliminary domains, which were later confirmed during the coding and clustering process. After establishing the preliminary domains, the taxonomy of sub-categories was then created by clustering the identified topics and issues using a structural coding scheme and hierarchical cluster analysis.

Based on the structural coding scheme, a similarity matrix was used to determine the frequency and co-occurrence within and across participant data sets in order to cluster those codes into sub-categories, which represented those topics most important to the participants. To determine the salience of each code, or topical heading, a respondent-by-code and code-by-code similarity matrix was constructed to determine the frequency with which the codes occurred by participant and co-occurred with other codes. A similarity matrix is a table of scores that express the association between codes. A respondent-by-code binary matrix was used to determine whether or not specific codes occurred in the data set for a unique participant, and with within a unique domain, while a code-by-code value matrix was used to determine the similarities by the total number of participant data sets in which the codes co-occurred. The higher rates of co-occurrences signify the existence of topics across a significant number of participants, while the lower rates of co-occurrence signify topics unique to individual or low number of participants (Guest et. al, 2007). The resulting taxonomic trees, then, represented the largest differences and similarities among the indexed topics, or codes, allowing for the emergence of sub-categories (Guest, et al., 2007). The sub-categories, then, represented the most important, or salient topics, among the participants and were useful in the crafting of participant profiles, whereby the data was most appropriately presented (Seidman, 2006).

As a measure of methodological rigor, peer reviews were conducted to test the consistency of the coding scheme through an inter-coder agreement of a sample of the data (Ary et al., 2010). Where the level of consistency between the coders was low, the coding rules were reviewed and where necessary revised.

Phase III: Data representation through participant profiles. In this phase of

analysis participant profiles were crafted and organized under each domain, which emerged from the reduction of the interview and on-line reflective journal texts into selected passages of interest and relevance in order to identify the essence of the phenomenon necessary to understanding the lived experience of analyzing and interpreting student assessment data and also to identify the most critical issues affecting these experiences.

Bogden and Biklen (2004) suggested that “the purpose of qualitative research is to understand, and that to understand one must experience the stories, emotions, and voices expressed by the participants" (p. 204). The creation of participant profiles, then, according to Seidman (2006) "is the research product . . . most consistent with the process of interviewing . . . [and] . . . is an effective way of sharing interview data and opening up one’s interview material to analysis and interpretation” (p. 119). Seidman (2006) further noted that, “story-telling is a compelling way to make sense of the interview data” (p. 120).

As noted by Seidman (2006), these profiles provide a better understanding of the participants' experience through their own stories, thereby establishing a context and process, wherein to understand in detail the participants' significant lived experienced relative to the domains and associated with each research sub-question. This process also enables the researcher to connect the profiles of one participant to another in order identify the most salient topics and issues within and across participant groups relative to the lived experience of analyzing and interpreting student assessment data (Seidman, 2006).

In creating the profiles, Seidman (2006) suggested that the researcher endeavors

to texturally and structurally describe the essence of the phenomenon from the participants' perspectives, and in their own words, by carefully constructing the participant's narratives around the organizing domains to allow the emergence of the most salient topics and issues within and across profiles (Seidman, 2006). Moustakas (1994) referred to this as imaginative variation, where the researcher is tasked with constructing potential meanings through "the utilization of imagination, varying the frames of reference, employing polarities and reversals, and approaching the phenomenon from divergent perspectives, different positions, roles, or functions" (p. 98) to determine how the phenomenon came to be.

Phase IV: Relating the domains. The final phase of the analysis involved the narrative synthesis of the meaning and essence of the phenomenon by writing, or graphically representing, a composite description of the relationship between the domains and sub-categories either by influence or priorities (Spradley, 1979).

As a final measure of reliability checks, follow-on focus group interviews were conducted after the third interview tier to validate the results of the participant profiles and domain analysis.

Computer Assisted Data Storage and Analysis

To assist with the organization, reduction, analysis and retrieval of data, QSR NVivoTM Version 9.0, qualitative research software program, was used. Although technology has the potential to distance the researcher from the actual data, qualitative software programs provide a means for storing, locating common passages and segments of text, and retrieving data as well as organizing that data in a hierarchical manner (Creswell, 2007). Qualitative software programs also enable the researcher to

conceptualize different levels of abstraction by drawing visual models that represent relationships among topics, sub-categories, and domains critical to the domain analysis process (Creswell, 2007).

Trustworthiness

In a qualitative study, trustworthiness is based on methodological rigor, or those practices, which ensures that the researcher's interpretations and conclusions are trustworthy by addressing issues of confirmability, credibility, and transferability and generalizability (Lincoln & Guba, 1985). Creswell (2007) and Lincoln and Guba (1985) suggested that the strength of a qualitative study lies in its ability to be free of researcher bias (confirmability), accurately describe the phenomenon under study (credibility), demonstrates that the data collection and analysis methods used are consistent and can be replicated and applied or to other contexts or groups (generalizability and transferability).

Throughout the data collection and analysis process the following strategies were used to establish methodological rigor: (a) triangulation, (b) reflective journaling, (c) peer reviews, (d) reliability checks, (e) thick, rich descriptions, and (f) cross-case comparisons.

Triangulation

Triangulation refers to the collection of data from multiple sources, procedures, or instruments in order to corroborate the researcher's findings (Creswell, 2007). Data was collected from multiple sources (in-depth, individual interviews, online reflective journals, and follow-on focus group interviews) and multiple perspectives (teachers and administrators from different grade levels/spans) in order to validate the data as well as to provide additional insights into the phenomenon of the analysis and interpretation of student assessment data. Triangulation also supports replication logic, where Creswell

(2007) suggests that the confidence in the findings increases when those findings are true across multiple perspectives or locations.

Reflective Journaling

Reflective journaling provides a bridge between the data reduction and the writing process where the researcher attempts to identify evolving theories and connections (Creswell, 2007).

For this study, initial reflection involved the reflective reading and journaling of each interview transcript to index passages of interest and relevance with topical headings and defining tentative issues with the purpose of directing follow on data collection, while advanced reflection involved refining the meaning units during the coding and cluster analysis process (Creswell, 2007).

Peer Reviews

Peer reviews serve the purpose of validating the researcher's interpretation of the data gathered by providing an external check on the data collection and analysis process (Creswell, 2007). As discussed earlier, the peer review was conducted by the following panel of experts: (a) the Lead Consultant for the Regional System of District and School Support (RSDSS) for Region 11, (b) the Director of Assessment and Accountability for the Los Angeles County Office of Education, and (c) the Director of Teacher Education, California State University, Bakersfield. These professionals have extensive knowledge, experience, and training in the data analysis process, and school and teacher support.

The peer review panel conducted reviews and provided input on the three in-depth individual interview protocols and also engaged in the inter-coder agreement process to test the consistency of the structural coding scheme.

Reliability Checks

Reliability checks, or member checks, provide participants the opportunity to confirm that their retelling and reflections of their experiences were accurately represented during the content and domain analysis process (Creswell, 2007). Reliability checks, according to Lincoln and Guba (1985), are "the most critical technique for establishing credibility" (p. 314). Because a phenomenological study represents the experiences of the participants as related by the researcher, reliability checks protect the results of the study from potential researcher bias. Throughout the data collection and analysis process, all participants were provided with several opportunities to review the selection of significant passages, identification of critical issues, and the transcription of the in-depth, individual interviews and on-line reflective journaling.

Throughout the transcript review process all participants were provided with several opportunities to review the selection of significant passages, identification of critical issues, and the transcription of in-depth individual interviews, on-line reflective journal postings, and follow-on focus group interviews.

Thick, Rich Descriptions

Thick, rich description refers to the accurate, complete, and detailed description of the site, setting, participant profiles, and the data collection methodology and analysis (Lincoln & Guba, 1985). These thick, rich descriptions allow the reader to determine the level of transferability from this study to another. Within this study, this descriptive process also included the low-inference descriptors, such as verbatim quotations presented through the participant profiles.

Cross-Case Comparisons

A cross-case comparison refers to the use of more than one case for data collection and analysis to determine the level of value in the results and its generalizability to other cases in other contexts (Lincoln & Guba, 1985). For this study, the participants were selected from multiple cases (administrators and teachers) from multiple locations (schools and district) and across multiple grade spans (elementary school, middle school, and high school).

Table 5 identifies the methodological component and its related strategies.

Table 5

Methodological Rigor and Related Strategies

Methodological Rigor Component	Strategy
Confirmability	Triangulation Reflective Journaling Peer Review Reliability Checks Bracketing
Credibility	Triangulation Reflective Journaling Peer Review Reliability Checks Bracketing
Dependability	Triangulation Reflective Journaling Peer Review Reliability Checks Bracketing

Transferability and Generalizability	Triangulation Cross-Case Comparisons Reflective Journaling Peer Review Reliability Checks Thick, Rich Descriptions

Ethical Issues

Ethical Principles

Throughout this study every effort was taken to maintain the following ethical principles: (a) equity, (b) honesty, and (c) humane considerations (Glatthorn & Joyner, 2005). To ensure equity, a maximum variation approach was used to recruit a broad range of participants with regard to: (a) current grade level assignment, (b) teaching experience, (c) education level, (d) gender, (e) ethnicity, and (f) experience in assessment data analysis and interpretation. The goal was to select participants who could provide breadth and depth to the context of the analysis and interpretation of student assessment data. The ethical principal of honesty was maintained throughout the study by providing all participants with multiple opportunities to review the transcription of interviews, close observations, and document analysis. Additionally, all participants had the opportunity to review chapters one through three of this study prior to data collection, as well as the results of this study when completed. At no time were deception strategies used during the study. Finally, this study did not employ any strategy or technique that violates the humane treatment of the participants.

Confidentiality

In an effort to ensure participant confidentiality, all identifiable information such as participant, school, and district names were identified by pseudonyms throughout this

study. However, for those participants who agreed to participate in the focus group interviews, their identity was revealed to the other participants. However, each participant was asked not to reveal the identity of the other participants in the focus group interview. Additionally, all participants were reminded at the beginning of each interview, as well as on the reflective journal discussion board, that in order to protect the privacy of past and present students and colleagues, they should refrain from using their actual names, but rather use pseudonyms. Finally, prior to participating in the study, all participants were required to review and sign the *Participant Consent Form,* which delineates the various issues of confidentiality.

Summary

This qualitative empirical phenomenological study was conducted in order to gain an in-depth understanding of the experiences teachers and administrators encounter while analyzing and interpreting student assessment data and the identification of the most critical issues among the participants. Ten teachers and five administrators were selected through purposeful sampling using a maximum variation approach. Data was collected through three, in-depth, individual phenomenological interviews, on-line reflective journal postings, and follow-on focus group interviews and analyzed using Seidman's (2006) framework for studying, reducing, and analyzing the interview texts combined with Spradley's (1979) domain analysis procedures for classifying data through the identification of primary domains and sub-categories. Throughout the data collection and analysis process the following strategies were used to establish methodological rigor: (a) triangulation, (b) reflective journaling, (c) peer reviews, (e) thick, rich descriptions, and (f) cross-case comparisons.

CHAPTER FOUR: FINDINGS

The purpose of this qualitative empirical phenomenological study was to examine the experience of analyzing and interpreting student assessment data from the perspective of both teachers and administrators in order to: (a) identify those aspects of the experiences which are similar or dissimilar among the two groups, (b) identify the priorities and influences which affect those experiences, and (c) identify the most critical issues which provide an in-depth understanding of the experiences and help to define the essence of the phenomenon.

Ten teachers and five administrators from two school districts participated in this study. Through in-depth, individual interviews, on-line reflective journal postings, and follow-on focus group interviews, ten teachers and five school site administrators revealed their attitudes, emotions, thought processes, understanding of student academic skills and knowledge, and reflections on their own instructional effectiveness. The accounts of their emotions, thoughts, and behavior preceding, during, and following the analysis and interpretation of student assessment data forms the essential domains, sub-categories, topics, critical issues, and relationships for the evaluation of their experiences and the identification of the essence of the phenomenon.

Research Questions

One central question, five issue-oriented, and two procedural sub-questions were identified in order to describe the experiences of both teachers and administrators engaged in the analysis and interpretation of student assessment data in order to identify

those experiences, which were similar or dissimilar among the two groups, as well as the most critical issues, to provide an in-depth understanding of those experiences and help to define the essence of the phenomenon.

Central Question

What is the lived experience of analyzing and interpreting student assessment data for teachers and administrators?

Issue Oriented Sub-Questions

1. What is similar or dissimilar about the factors that contribute to teacher and administrator motivation to analyze and interpret student assessment data?
2. What is similar or dissimilar about how teachers and administrators learned to analyze and interpret student assessment data?
3. What is similar or dissimilar about how teachers and administrators analyze, interpret, and use student assessment data to include their successes and challenges?
4. What is similar or dissimilar about what teachers and administrators think about and talk about when they try to make sense of assessment data and the resulting instructional programs and practices?
5. What is similar or dissimilar about how teachers and administrators describe their experiences in analyzing and interpreting student assessment data?

Procedural Oriented Sub-Questions

1. What are the domains of inquiry that facilitate the identification of the contexts or situations and which have influenced teacher and administrator experiences of analyzing and interpreting student assessment data?

2. What are the most critical topics or issues discussed by teachers and administrators that regularly resulted in high levels of satisfaction or dissatisfaction with the experiences of analyzing and interpreting student assessment data?

Summary of Data Collection

In all, 60 in-depth, individual interviews were conducted with the 15 participants and 27 on-line reflective journal postings were collected. Prior to each individual, in-depth interview the participants were provided a copy of the interview questions and prompts allowing them sufficient time to fully reflect on the primary questions and prompts and possible exploratory questions in order to develop more thoughtful and complete responses. As Seidman (2006) noted, the goal of the interviewer is to encourage the participants to reconstruct their experiences rather than simply remember them. If participants are nervous, shy, unprepared, or surprised, they may not be able to accurately reconstruct their experiences.

Interviews were mostly conducted in each participant's classroom or office, and in some instances at local coffee houses. The goal was to select a location that provided a safe, non-threatening environment for each participant, according to their own needs. Each interview lasted between 60 and 90 minutes. An interview protocol form was used for each interview in order to provide structure to the interview and to record the participants' responses, actions, and initial researcher reflections.

Each interview began with a review of selected passages of interest and relevance from the previous interviews, as well as their on-line reflective journal postings. The purpose was to establish a foundation for the current interview, as each was purposely

based upon the other. The interviews followed a scripted protocol and when necessary clarifying or exploratory questions were raised in order to further investigate and understand each reconstructed experience.

As a reliability check, participants were provided with a copy of their interview transcriptions to verify that what was said was accurately transcribed.

Summary of the Comprehensive Data Analysis Plan

The objective of this study's data collection and analysis plan was to reduce the large amount of data collected through in-depth, individual interviews, on-line reflective journal postings, and follow-on focus group interviews in order to identify the essence of the phenomenon by providing an in-depth horizontal and vertical analysis of the lived experiences of analyzing and interpreting student assessment data between teachers and administrators and all the possible variations therein. The horizontal analysis was conducted across all participants in order to identify emergent sub-categories and topics to better understand the context and complexities of the phenomenon, while a vertical analysis identified the similarities and dissimilarities between the participant groups.

As Seidman's (2006) framework for collecting data through in-depth, phenomenological interviewing was employed, his recommended analysis process for studying, reducing, and analyzing the interview texts was also followed. Through this process, the researcher: (a) reads and reflects on each data set in order to identify and select significant passages of interest and relevance, (b) classifies the selected data by reducing the significant passages of interest and relevance into broader categories, and then (c) develops profiles of each participant as a way of presenting the data in order to reveal the essence of the phenomenon (Moustakas, 1994; Seidman, 2016).

As the research sub-questions required the participants to focus on the common perceptions and categorization of their lived experiences which, are similar or dissimilar, in order to identify the most critical issues affecting their experiences of analyzing and interpreting student assessment data, a domain analysis was also conducted in order to facilitate the classification of these data (Spradley, 1979). This process was also consistent with the empirical approach were general or universal meanings are derived from the researcher's reflective analysis and interpretations of the participants' described experiences (Moustakas, 1994).

What follows, then, are the: (a) participant profiles, which represent vignettes of participant responses, in their own words, organized under each domain, (b) a narrative analysis of the domains, sub-categories, topics and issues which identifies the emergent associated with each issue-oriented sub-question, and (c) a synthesis of the most critical issues which influence the relationship between domains and sub-categories, which define the essence of the phenomenon.

Participant Profiles

As noted by Bogden and Biklen (2004), “the purpose of qualitative research is to understand, and that to understand one must experience the stories, emotions, and voices expressed by the participants" (p. 204). Creswell (2007) also noted that "individuals seek understanding of the world in which they work" (p. 20) suggesting that the meaning they create from their experiences are forged within the specific context in which they work and through the social and professional interactions that they have with their colleagues. The creation of participant profiles, then, according to Seidman (2006) "is the research product . . . most consistent with the process of interviewing . . . [and] . . . is an effective

way of sharing interview data and opening up one's interview material to analysis and interpretation" (p. 119).

These participant profiles provide a better understanding of the participants' experience through their own words thereby establishing a context and process, wherein to understand in detail the participants' lived experiences relative to the domains of inquiry. This process also enables the researcher to connect the profiles of one participant, or sub-group, to another in order to identify the salient and critical topics and issues within and across participant groups relative to the lived experience of analyzing and interpreting student assessment data (Seidman, 2006).

The following participant profiles represent vignettes of participant responses organized under each domain, which were created after the participant responses to the interview questions were reduced into selected passages of interest and relevance.

These vignettes provide a rich textural and structural description of the participants' accounts of their emotions, thoughts, and behavior preceding, during, and following the analysis and interpretation of student assessment data as told by the participants in their own words. Where necessary, words or phrases were inserted to aide in transition or clarification.

Andre (Middle School Administrator)

[Domain #1: Motivation]

As a principal I use the [student assessment] data to conduct grade level and school-wide progress monitoring and to regroup students into intervention programs. How else can we help students progress, if we don't do a proper analysis of their strengths and weaknesses and design an appropriate instructional plan and intervention

plan for them? It gives us a snap shot of our efforts and lets us know if we need to make any changes. I wish that in every avenue of the data analysis process, as we hold students accountable for what they learned, we should hold teachers accountable for what the students learned. I think that this would force everybody to really understand how the data relates to what kids are doing.

Student assessment data is definitely a tool for accountability- for both teachers and students. But it's also an accountability measure for administrators. We have to be able to look at the data ourselves and instead of altering our instruction, we use it to alter the overall educational programs. We also have to use it to guide our teacher's discussions.

I guess I should be less comfortable than I am. But, I feel comfortable analyzing student assessment data. Based on my knowledge of overall academics and programs in the school, I feel comfortable and attack it. It's not an overriding concern. Even as a teacher I disseminated data. I personally internalized that the data guided my instruction, but it wasn't forced down my throat. I did it on my own. But I am also one of those guys when you are told what to do you do it. I'm good at working with the teachers as they try to understand the data. I like getting into their thinking process and helping them get to that aha moment when the data speaks to them.

What I don't like, though, is when teachers won't give it a try; when they just fight the process. I think that they fight the process because most are not as skilled or comfortable with the process as they should be. I just don't think it is focused on enough by their leaders and not part of the general conversations. I think most administrators just talk the talk and don't do it enough to really get good at. So it is just a hoop they are

jumping. They may talk it, but not convey its importance. The best way to learn is to teach. So it is kind of an issue of trust. I don't think the teachers trust that the administration really understands it on a level that they can teach it. They are just doing it because they have to.

[Domain #2: Contextualization of Learning]

During my first experience analyzing and assessing student assessment data I was intimidated- insecure, and confused. I was a new teacher and sat down at a grade level meeting and didn't know what to do next. I didn't really understand what the graphs were telling me so I had to rely on my colleagues to explain it. [I] didn't even know what the word benchmark meant. I didn't even understand the color bands. I felt alone. They were veteran teachers and I was still a long-term sub. It's like you don't even know enough to know what questions to ask. It would have been nice if the principal got all of us new teachers together to give us a little training first. It's hard enough when you're the new kid on the block, but to be new and untrained is even worse. But it did spur me on to learn and to make the data relevant to me. Not because of the embarrassment, but because I realized what I needed to do. Later when I became a principal I wanted to make sure that none of my new teachers ever felt like that. So I would always try to talk to them and encourage them to ask questions before they got to a point where they were intimidated.

Unfortunately I don't think it [analyzing and interpreting student assessment data] is focused on enough by . . . [school and district] leaders and not part of the general conversations. Most just can "talk-the-talk." They don't talk about it enough, so it is just surface knowledge. I would [also] say administrative ignorance and their lack of

confidence is the primary reason most administrators are not well versed in analyzing and interpreting student assessment data and why teachers, as a result, are also not as skilled as they should be. So it is just a hoop they are jumping through. They may talk it, but not convey its importance.

I think that over the years I have gotten better at it. I do wish I had had better training early on. I am glad that I was given time to develop my own skills because that has allowed me to own my process, but if I had better training, I think I could have progressed faster and better. Early on I had one, informal training in data analysis. It was about an hour and a half only. But that was the only training. [From then on] I picked up most of what I know by talking to other teachers. I would like to go to workshops on not just how to analyze data, but how to analyze data when it comes from different assessment instruments and then how to verify that your analysis was correct. Because if we are going to expect teachers to alter their instruction or even to confirm what they were doing worked, then you need to know if your analysis and interpretation was correct.

[Domain #3: Data Analysis Strategies]

My strategy . . . that depends on what I am looking for at first. What's my goal, my focus, the instrument itself? The CSTs look different than a benchmark. I start off with a calibration of the assessment instrument to ensure that all of the questions were appropriate. Then I would focus on the grade level, but also the individual teacher. The grade level data shows me the whole group is doing and if the teachers are working together. District wide look tells me how my grade levels are doing compared to the other schools.

I think a positive influence affecting data analysis would be having enough training to really look at the data and see what kinds of adjustments you need to make or extra help that the students need. I think that a negative influence is the opposite- not having enough training. If you don't know what to look for or where to begin then you are not going to be successful.

[Domain #4: Intergroup and Interpersonal Relations]

Most of the data analysis discussions take place in the grade level meetings. As the principal I mostly drop in on the meetings to listen to what the teachers are talking about and to provide assistance where needed. I think it's effective. If you try to do this by yourself you might get bogged down and you also don't get to see how somebody else does it. These opportunities give me a sense of being a professional. It's nice to share your stories with other people in your profession. I also get to see how they look at the data and what's important to them. I like working with teachers much more. I like helping them deconstruct the data and make sense of it. They are willing to look at the data. When all of the principals meet, which is rarely, it seems everybody is trying to outdo each other. It's horrible. I'm totally jaded by it. But when working with teachers I try to analyze the data first so when I talk to them its more validating to me that what I was doing was right.

From a principal's perspective... how you share that information, how you interpret it, and how you internalize it, is critical. I think that communication of the data is critical. Sometimes a one-on-one conversation is appropriate so as not to expose them to ridicule. I also think time and collaboration are important. But communication is the essence. It builds a sense trust, comfort, and confidence [and] I don't think the teachers

trust that the administration really understands it on a level that they can teach it. They are just doing it because they have to.

[Domain #5: Self-actualization]

Going from teaching to administration I get to see a broader perspective because of my position. As a principal I have more exposure to the data than when I was a teacher. I was only a teacher for about three years before moving into administration so I got just a small dose of data analysis. But now I am responsible for really knowing it so that I can help out my teachers. It's enormous responsibility. My actions can either help or hinder their development. So I guess I better know what I'm doing. I've learned to take responsibility for my analysis and application of the analysis to my programs. At first it was about truly understanding the difference between the various types of assessments and then it was how to analyze the data from each type of assessment and relating them together and then relating them to the instruction.

Moving forward I definitely see myself being able to help others analyze and interpret student assessment data and then use that data to drive their instruction. I also see myself having more discussions with my colleagues because I know what it is like when you don't have those conversations. I feel that I did not develop in this area as quickly or as effectively as I should have because we did not, and still do not, have these conversations as administrators. We don't have an outlet like the teachers do. And if we aren't having these conversations and we don't get better at it ourselves, then how can we expect our teachers to do the same?

Angela (High School Administrator)

[Domain #1: Motivation]

Being able to effectively analyze and interpret student assessment data enables educators to monitor student progress, appropriately provide additional services to students in need, and to adjust instruction where needed. But, in order to do this each teacher and administrator needs to understand the purpose of data analysis and to be proficient at following the analysis protocols. However, there are a number of obstacles that get in the way of effectively doing this, like time, training, ineffective teaming and collaboration, etc. So it is important that administrators provide a schedule of training to include using real time scenarios and that they provide an environment where teachers and administrators can have effective and appropriate conversations about the data and how that data reflects on our teaching and [our] students' learning.

I think everyone is at least somewhat skilled at [analyzing and interpreting student assessment data]. I think there is a difference between knowing what to do and wanting to actually do it. I don't feel that this is a skill that is focused on in credentialing programs and is something that is acquired over time. I do think that administrators have to be good at it because they are ultimately responsible for setting the environment for teachers who will have to do most of the work. For me, I think I'm good at matching the various reports form OARS to what level of analysis we are doing. I also think I'm good at leading the discussion groups. I try to do less analysis there and more of guiding them into the analysis. I still have trouble applying the data to instructional practices and curriculum development. I was originally a history teacher so when it comes to helping teachers design their program around the data it's a little tough for me. Now I'm pretty

comfortable with it. Now I can lead data discussions. I think it is because as an administrator if I don't know what I am doing and don't portray a sense of confidence the teachers will tune me out.

[Domain # 2: Contextualization of Learning]

I guess that I have come a long way in my ability to analyze student assessment data and how to use that data to inform [my] instruction. [Most of it] has been on-the-job training. But it would have been nice to receive more formal training in the beginning**.**

My first introduction to data analysis left me wondering what it was and why we were doing it. So over time I had to come to build my own process, even when we were given a guided format, so that I could internalize the data and use the data for my classroom. Now that I am an administrator I see things a little different. Now I need to apply that data to the entire grade level or department and in some cases the entire school.

When I first started teaching, I guess that I learned [how to analyze and interpret student assessment data] by working with other teachers and picking things up along the way. I don't remember a huge focus on data analysis, though. I think the assumption was that we were doing it on our own. It wasn't until I became an administrator that I began to see it more formalized.

My first data analysis experience, [though] was overwhelming so I shrugged it off. We were asked to do something that we had little training for. It was very difficult. I felt isolated and alone. I don't think it was because... [the other teachers] didn't like me or want to help me. I think they just didn't have the skills either to help me. So maybe we were all alone in this. Well, it made me learn to do it on my own and not rely others. As an administrator I now understand what it is like when a new teacher comes in and

they don't get good training and aren't provided with the tools necessary to their job. So I take them under my wing, because I don't want them to feel the way I did. Since that first time I think I learned a lot on my own and by working with others.

[Domain #3: Data Analysis Strategies]

[During our data analysis meetings] we use a scripted data analysis and interpretation protocol. We look at cohort achievement overall and by cluster and then at the progress made since the last assessment. Once we do that the teachers then identify instructional activities that will help the kids overcome the deficits. This protocol is especially helpful when I want to do follow-up discussion. We can look at the protocol form and have a discussion about the analysis from it. [The effectiveness of these meetings] depends on the department. Obviously math and language arts [teachers] seem more interested because of the high focus on the CSTs. Some of the other departments, and even members of the math and English departments, see it as a waste of time. If they don't come to the meeting prepared then it is a waste of time because we only have one hour to meet. But for those who do care I have seen some growth in their classes as they can better target interventions and instructional practices to their students.

Early on it I think we all struggled with compiling the data. I started teaching before all teachers had a computer in the classroom. We had to use paper and pencil to compile the data. Now the software does it for you. But now I struggle with data overload; knowing what is relevant data and what is just interesting data.

[Domain #4: Intergroup and Interpersonal Relations]

When we meet, we talk about the data. I print out all of the department and class level reports for each department. We even have an agenda that each department is

supposed to follow to help guide the discussion. Sometimes they will ask each other instructional questions, but most of the times they just want to know how the other students performed. I usually have to get them back on track with the discussion, which is about the specific analysis and how that relates to instruction. [The difficulty is] keeping teachers on track. Sometimes they just don't seem to follow the protocol form or even the agenda. When kids do poorly everybody wants to create excuses instead of looking at the data to determine what we need to do to move forward. It makes me always reevaluate how I talk about the data and lead the discussions. You have to constantly remind teachers that the data is not a direct reflection on them as a teacher but on everything involved such as the curriculum, the school environment, students' prior knowledge, and yes... instructional practices. So I start by talking about the validity of the assessment instrument and then go into a discussion of what the data suggests and how we taught the information and what we are going to do moving forward.

I actually enjoy talking to teachers about the data because it ultimately leads to a discussion about what's going on in the classroom. Its very collegial with teachers. I like to hear what others are doing and how they are making changes. It keeps my mind stimulated and keeps me focused on the classroom. When we meet with other district administrators it's like everybody is wanting to brag about their successes and hide their failures. It is actually shameful how some of the other administrators behave. When I went to my first meeting I was a bit overwhelmed and intimidated by the tense environment.

[Domain #5: Self-actualization]

A teacher's previous experiences, the level of training, and the type of environment- collegial or not- can be both positive and negative influences on an educator's ability to analyze and interpret student assessment data. I think that as administrators it is our responsibility to understand that every teacher comes to the table with a different level of comfort with data analysis, content knowledge, and teaching strategies. We need to recognize those differences and create an environment where those who are strongest in this area can support those who are newer. Also, it is important to listen carefully to the teachers because you want them to be comfortable in what they are doing and you want them to be confident in their analysis.

Over time I've gotten a lot better at understanding the data and being able to help teachers look at the data in terms of their instructional practices. Now I can see the nuances of the data instead of just scratching the surface. Most of this has changed because of the new software that is available.

If I could say something to teachers and other administrators it would be, "Don't take it personal. Use the data to reflect on not only you instructional practices but also what is going on in the class, the school, and the kids' life in general." The data is not meant to be used to point fingers but, to give you an idea of what is and is not working as well as it should. I also would like to tell other principals and district office personnel that we need to provide more professional development and more time to [conduct] data analysis. What I said before only works if teachers are properly trained and given the time to do the job right.

Annie (Elementary School Teacher)

[Domain #1: Motivation]

I do believe it is important for educators to be skilled at analyzing and interpreting student assessment data.

I think that most teachers are able to read data and interpret data because they have been trained mathematically in college. As far as administrators, some are highly skilled at analyzing data based on individual school sites and can develop district-wide goals. However, in the past when we were given the data we were expected to formulate our own conclusions based on the data that we received. Yet, we never receive any feedback. One administrator had all of us fill-out the same forms every month and not once did he sit down with us and discuss the details in depth to make sure that we understood the data. As a teacher, I expect my administrators to have more knowledge in this area because they have a degree or credential in administration. But some don't always seem to know what they are doing. Or at least they don't have that air of confidence about them to make us feel that they know what they are doing. A few of my colleagues felt that he didn't have the knowledge to interpret data because he didn't attend any follow-up meetings. Later, I began to feel the same way.

[Domain #2: Contextualization of Learning]

As a new teacher, I felt very overwhelmed when I was first asked to analyze and interpret [student assessment] data. Mainly, a few of my colleagues were veteran teachers and expected me to know the protocol and begin analyzing the data by myself. Therefore, I just listened to their comments at meetings and took a lot of notes. In the beginning I didn't receive a lot of support from my colleagues or administrators. I believe

that new teachers need a lot of help and support and now with BTSA eliminated, they are receiving less time for training. Personally, I was an intern and learned on the job, so to speak. I felt excited that my kids did well. But embarrassed to show some of the emotions because other teachers didn't have high scores and I was the new teacher. I just learned the best way to get through these early meetings was not to say much unless they asked me questions.

I haven't had formal training. I guess nothing concrete. I learned from colleagues at grade level meetings and the principal would explain to us how to do it and a team leader showed the "newbies" how to do it. It was quick and fast and I couldn't internalize it. But after a while I began to pick up on it. I feel I'm about 75% there. I could use some more training. I would like to have training like the administrators have had so that I could do it on my own without having to have a grade level meeting where the administrator has to walk us through the process. I want to feel more independent. I want to be able to look at data and then instinctively think of what to do next or what other data I need to be looking at. I want to be able to make better sense of what the data is telling me.

[Domain #3: Data Analysis Strategies]

For me, I look at how many of my students did well or poorly on certain items. If they did well I move on. If not, then I have to decide if I need to review or reteach something, or if I need to bring in outside materials or manipulatives or models to help them learn.

A positive influence would be the collaboration between teachers and administrators. If we use the data analysis meetings as a forum to share ideas and

analysis then we can do a better job of aligning our instruction with the needs of our students. I think a negative influence would be when people don't really understand what the process is and why we are doing it. Then it just becomes an issue of emotions and personalities and we can get sidetracked. I've learned that I feel I'm a team player and sometimes I can't always influence other teachers to change their way of thinking. Sometimes, I try to persuade them. I can give suggestions. I need to concentrate on my class and do what's best for them. I love the team approach but sometimes it doesn't always work with the team your in. I need to be more realistic.

[Domain #4: Intergroup and Interpersonal Relations]

When we meet, we meet in grade level teams and as a full staff. This year we get to meet for a half a day as a grade level to review the most recent benchmark and to analyze the achievement data. We also get time to look at our pacing guides, alignment guides, and even talk about our instructional strategies. To be honest we really don't make instructional decisions as a grade level. We have started reviewing the data together, but we really don't make instructional decisions as a group. Some of us share our ideas, but some of my colleagues are stuck in their own classroom and don't take our advice.

Unfortunately, [when we meet] we usually end up talking about the behaviors of kids instead of the data. Sometimes we waste a lot of time discussing behavior instead of analyzing the data and planning. I wish we had some sort of script to follow. I think that would help us keep on track. Maybe once we get ourselves organized and start having better conversations we can develop one. We have one colleague who is very negative toward this whole process. Most recently we decided we are going to do the best we can,

and she is just going to have to teach the way she does and we will move on. She is an anchor to our ship. Sometimes we do talk about the data and how it relates to our instruction, but that also degrades into a discussion of what the children did wrong. If we use the data analysis meetings as a forum to share ideas and analysis then we can do a better job of aligning our instruction with the needs of our students. When people don't really understand what the process is and why we are doing it . . . then it just becomes an issue of emotions and personalities and we can get sidetracked.

[Domain #5: Self-actualization]

Our administration this year has been very supportive and some of my colleagues are working hard. I can see myself getting better at this. I can see that it is becoming a much more important component of what we do as educators. My only concern is that there is a growing movement toward collaborative data analysis. Which means that the entire team needs to be more proficient at analyzing the data so that we can have a more fruitful discussion. But I am concerned that even with the growing emphasis that we still need more time with our teams. I am so happy that this year we have been given half a day with subs to meet with our teams, but with the budget the way it is I'm not sure how long the district can sustain that.

If I had to come up with one idiomatic statement it would be that time is of the essence. Data is nice to show strengths and weaknesses in individual students, but there is virtually no time to re-teach in order to exposing students to as many standards as possible before state testing.

Carly Sue (Elementary School Teacher)

[Domain #1: Motivation]

Being able to analyze student data is an important component of teaching and learning. I use the data to monitor my students' progress and to decide what curriculum to use and how to teach it. I can also use that data when I meet with parents to discuss what they could be doing at home with their children. So it's more than just another program or tasks. When done correctly, it is a powerful tool for helping students to learn.

I think most [administrators] have an idea of what to do, either formally or informally, but I think a lot just don't do it. Either they don't have time or don't really see its importance. I think I'm pretty good at checking for validity with the data and then devising intervention programs for those that need extra help. But I don't like when the assessment instrument does not match the instruction and therefore the data is irrelevant. I am good at the math and quickly identifying those students who need remediation. I'm not so good at getting the data entered into OARS because it is tedious. I enjoy using technology such as Excel by exporting data from OARS when I finally get it in to make templates to make the analysis faster. I dislike entering data into OARS. The system has recently been updated and the new format is difficult to use because once you scroll down, it doesn't let you see or go back to the top.

[Domain #2: Contextualization of Learning]

When I started teaching, the only experience with analyzing and interpreting data was with the stock market. At a very young age, I was taught how to find stocks in the paper, record the plus minus in value, make a graph, draw a trend line, and use that information to tell my dad whether to purchase or sell. So when I sat down for my first

data meeting I felt confident in my skills. But the only thing I remember from my first data analysis experience was just how uninviting the group was and how it made me not want to work with them anymore. The other teachers [were] bragging about how well their class did, with lots of green. Mine was mostly pink-basic or below. It made me mad and that is why I started doing it on my own. I felt prepared to analyze the data, but not for the ridicule and utter disrespect from the other teachers. As a grade level we still aren't collaborating the way we should.

Since I have not received any formal training, I've learned that to get good at this I am going to have to do it on my own. Which I guess has made me better at it

[Domain #3: Data Analysis Strategies]

I input scores into OARS. I export the scores to Excel, copy and paste the scores into my template. It calculates total overall score so I can quickly find my basic or belows. Then I begin to color code the scores by standard. At a glance I can find those students who need intervention/remediation and on what standard.

While we attempt to do it, assessments are not always given the same in each class. Some teachers have the directions for the assessment, while others don't. Sometimes directions for administering aren't given. So it is a struggle to appropriately analyze the data when the test doesn't match the instruction.

Definitely a negative influence was my initial grade level team. They made me not want to work with them on data analysis and instructional alignment. It did make me want to get better on my own and do my own thing though. I think the access to the data and other student information has been a positive influence. Now I can easily run data comparisons using multiple measures to better monitor my students' progress.

[Domain #4: Intergroup and Interpersonal Relations]

I have tried to work with my team but some of them are more concerned about what is happening in their class and not the grade level as a whole. I really get nothing out of these sharing opportunities. We are supposed to look at the data and discuss what we did and provide some ideas about how to move forward. But we don't. Why collaborate with others if you don't actually collaborate on anything. However, I am not sure I would do exactly what all of the other teachers recommend. Each class is different and the needs of each student are different. So I spend most of my time working with my partner instead of the whole team. That seems to work better because we share the same students.

Last year was really bad. I don't think the principal really knew what he was doing. I think he was more concerned about the overall proficiency rates than progress or what individual kids were doing. This year the new principal seems more knowledgeable. She asks about cohort groups and cluster analysis. But, the teachers that I work with don't like that the administrators are joining us for our grade level meetings. Frankly, it doesn't bother me. I think they don't like it because when they are there we have to be more focused on the discussion. So when the administration is there, we really focus on the data- what it says, what it means, and what it tells us about student learning and our teaching. The difficulty with these meetings is always in getting people to look past the overall proficiency rate and really look at the data by kid, by cluster. Our principal keeps saying that the test is not evaluative and should not be used as a grade so its ok if some kids are struggling as long as you identify why and have plan to help them.

[Domain #5: Self-actualization]

I think the most important issue [with data analysis] is high quality professional development. Teachers and administrators need to know the protocols, best practices, and the mechanics of analyzing data and then how to use that data to drive their instruction. The administration has tried to implement several scripted protocols to follow. I wish they would just pick one and stick with it. I also think its important to make sure there is enough time to analyze the data.

For now, I don't see much changing from what I am doing. Other than maybe getting more time to do it. This is the first year that we have had the time during the school day to analyze the data. As a grade level we still aren't collaborating the way we should. I spend most of my time working with my partner instead of the whole team. That seems to work better because we share the same students.

To principals I wish I could say give us more time to accurately analyze the data and plan for intervention, give us more training so that everybody knows what to do- not just your favorites, and make sure that the test accurately reflects the standards and the instruction.

Caroline (High School Teacher)

[Domain #1: Motivation]

Analyzing and interpreting student assessment data is a necessary component in the development of both the student and the teacher. I try to use student assessment data to measure student performance against the standards and depending on how they do I determine what steps to take. As we look at the data and determine whether or not our students are making satisfactory progress we also determine whether or not we are

providing the most effective instructional program. For me it is sometimes difficult because I am still learning how to analyze the data and then how to apply that to my instruction. And I know I'm not alone.

After I started teaching AP classes I started to learn how to read the data so that I could master my teaching to better serve my students. [Now] I am more comfortable with analyzing and interpreting the data, but do wish I had more formal training.

I sometimes think I'm not very good at the whole thing. I try, but without having somebody formally guiding you and letting you know if you are doing right then you will never know. I definitely don't like spending a lot of time trying to go through the pages of raw data and trying to figure out what that means. We have the software to compile reports, but not everybody has been trained. And even though the office gives us some reports we I don't always know what to do with them. I wish we could have some better guidance as to what we are supposed to focus on with these reports. Sometimes it's like data overload.

As for others, I think that math teachers are better at it than the rest of us, but generally speaking, no I do not believe teachers are skilled at . . . analyzing student assessment data, especially the older teachers. I went through my student teaching in the 1990s and as I stated there was no training on how to analyze or interpret data. I would hope the younger teachers are now receiving that education in their coursework. I would assume newly credentialed administrators are masters of this. Actually, all administrators should be masters of data analysis and interpretation.

[Domain #2: Contextualization of Learning]

Everything I know I picked up on my own. So I'm guessing I'm doing it right because nobody has said anything. But, I would like someone to break it down so I understand how they compiled the data. Any training would be nice, though.

The first time I analyzed data I was scared. I'm a history teacher not a math teacher, so numbers have always scared me. I felt completely alone and unprepared-just trying to understand how to read the data and make sense of it. I get that its not enough to just see how many students passed or not, but when you have over one hundred students in a day you need to be able to make sense of the data as it relates to all of the students. I just wish we could be a little more focused and maybe having someone show up the first time to walk us through the process would have helped. I thought that if the district really wanted us to be successful at this they would have provided us with appropriate professional development opportunities before throwing us into data analysis.

[Domain #3: Data Analysis Strategies]

I don't think we have a protocol or process. In the past we are given the results of our CST's, but not the time to analyze and modify based on the data results. We usually get a print out of the results and we look at how our kids performed. Then we might look at the test and decide which items we probably need to cover again. I don't think this is really effective. I mean if they want it to be effective we should probably do some preplanning. I know that the questions are supposed to mirror the CSTs, but what about having a plan ahead of time for those kids who might have trouble. I guess what I'm talking about is if a kid is having trouble with writing we should already have a program in place to help them out instead of waiting for the analysis and then designing a

program. That just takes too much time. If something was already in place then we could decide based on the data if the student would benefit from the support or if we just need to review and retest.

Over time I am getting better at identifying those common skills or content that I either need to reteach or focus on more during my initial instruction. But I still struggle with making sense of all of those numbers when we look at other reports.

Knowing that there is support is a positive. The district really wants us to do a good job analyzing the data, but they also seem to know that it will take time. Knowing that it is ok to make mistakes is a positive. On the other hand, not having enough training and enough time has been a negative factor. We want to do a good job, but I just don't think the district is listening to us and giving us more time or at least not interrupting our time with other things.

[Domain #4: Intergroup and Interpersonal Relations]

My department meets once a month to go over the most recent test. This is the first year we have banked time, so it seems we may have enough time to get through this entire process if the principal doesn't take this banked time for other professional development training. The problem is that within my department I think we all get along but nobody really respects the others' abilities. But we all like each other. We just don't have a leader. We usually get a copy of the summary results and we are supposed to look at them and group the kids for re-teaching. But most of the time we can't agree because we don't like the test questions or we can't understand why an "A" student bombs the test. I don't get much out of these meetings. I like to meet my partner separate from the

group and look at what we are doing in class instead. We work in a wing that has a pod so we have lunch there and review student work.

[Domain #5: Self-actualization]

If I had to sum it up I would say that it can be both frustrating and liberating. Sometimes the data just looks like a bunch of numbers on the paper. Sometimes you just can't make sense of the data and that's frustrating. But you have to keep on trying and in time you being to make sense of it and sometimes you come to the realization that the data won't make sense because the assessment instrument simply was not valid. And that's ok because you understood that. At other times, you think your students are performing well and the data demonstrates that they aren't. Sometimes its the other way around.

I can see myself getting better at analyzing the data. But I am really working hard at using that data to make instructional decisions. I think that is where the most important part is. Knowing what the data is telling you is useless if you don't know what to do with it. I really want to get better at this. I think it's important that everybody takes ownership of this process. Because when it's personal, it's meaningful.

I have come to realize that how I analyze the data is based in large part on the amount of training I receive and how much time I have to actually analyze the data, apply it to my instruction, and then actually instruct. Knowing that there is support is a positive. The district really wants us to do a good job analyzing the data . . . on the other hand, not having enough training and enough time has been a negative factor. We want to do a good job, but I just don't think the district is listening to us and giving us more time or at least not interrupting our time with other things. Maybe if we could convince the

administration to give us more time or at least to use our banked minutes to discuss the data and instructional alignment we could all get better at this. We need a lot more time to adequately do this and I don't want to do it adequately. I want to do it well!

Frank (Elementary School Teacher)

[Domain #1: Motivation]

I think overall, being able to analyze . . . [student assessment] data and apply it to my instructional choices has made me a better teacher. Without it you can't plan your instruction.

I am very comfortable with analyzing data. I feel that teaching is driven by simple data analysis like when I construct grades and base lessons off of those outcomes. I minored in Communications in college and did a few studies on sociological constructs for thinking and teaching. We polled other college students and made studies based upon their answers. At university, I also used scientific research as evidence in a number of papers. Now I used my knowledge of statistics and scientific notation to analyze student assessment so the first time I sat down to do data analysis for the district, I felt prepared, but I also felt I was wasting my time. The assessment did not align with my teaching, it was more difficult than student ability, and it did not have appropriate sample sizes. Analyzing data in a vacuum does nothing to help instruction. In fact, it hinders instruction by taking valuable time away from planning and implementing lessons. I think my whole grade level was thinking the same thing. I mean if the test doesn't match the pacing guide or the state standards, then what's the point. It really turned me off to the process that the school was trying to implement. I might as well do it myself and with those I work directly with than waste my time with other systems.

[Domain #2: Contextualization of Learning]

As I reflect on all of my experiences I would say that it was one of personal growth. I really did not have any formal training or even much support from the administration. What I have learned I learned at the university level or on my own. I think that most of us have similar experiences and that is what makes us professionals. I think that this is what has made me good at data analysis. I was able to develop my own process and my own judgments. It has made me more effective. I think that if a process was forced on me, I would follow it, but it would not feel right and probably would not be the most appropriate for my class and my instructional strategies

[Domain #3: Data Analysis Strategies]

I guess I don't have a particular practice or strategy that I follow. I have been at schools that tried to implement one. Two years ago we used a scripted analysis form that walked us through the scores, performance comparison to the previous test, and instructional strategies. But last year I moved over to this school and we don't use one here. I'm not sure how effective it was, but it at least gave everybody a starting point for the discussion. I think our new principal is going to implement one later this year.

When the data matches the instruction, analysis is useful. When data doesn't match the instruction it's nothing but useless numbers. Data needs to be useful and aligned. Without that, it's a waste of time. Have good reasons for producing data and working on analysis before disseminating anything. Without a clear, precise, and measurable goal, data is just empty numbers. And stop recreating the wheel.

It's common sense. You have to align the assessments with the state standards before you can analyze the data, otherwise its futile. You also have to make sure that you

properly align your other classroom or common assessments to the final summative assessment if you want to look at longitudinal data.

I can tell you that a negative influence is when the assessment does not match the instruction. It is difficult and frustrating when there is no connection and thus no relevance. A positive influence is time and support. I feel that this year we are getting a little more of both and it makes it easier and the meetings are becoming more effective and useful.

[Domain #4: Intergroup and Interpersonal Relations]

Most opportunities for data analysis have been during grade level team meetings. Unfortunately, these meetings are also needed for regular maintenance of the school year such as event and lesson planning, sharing best teaching strategies, completing SSTs, etc. Therefore, data analysis is usually rushed and unproductive. On the rare occasions where time is legitimately set aside for data analysis, those meetings can be very productive as long as the data is useable. I usually enjoy these opportunities to meet with my colleagues. It's nice to hear what my colleagues have to say about their students and how they view the data. It's also nice when they ask me for advice. It validates what I am doing. These times have been productive as long as there is some type of focus; not necessarily a scripted agenda, but guidance on why we are doing this. The same holds for meetings with administrators. When the data is relevant then we normally discuss instructional practices and teachers choose from a variety of strategies that they are comfortable using as an instructional platform. There are too many variables to make a single decision on instructional practice. Personally, I choose from strategies that match my philosophy and style- existential, interactive, directed teaching. I have never

sacrificed professional style for data analysis – that seems unnecessary. I might teach a lesson from a different perspective, but I do not change my instructional strategies. I personally believe that any style of teaching can be successful. These decisions are comfortable because it doesn't "pigeon-hole" anyone into a practice or style they find uncomfortable or unapproachable.

When collaborating with other teachers, I tend to lead discussions and meetings – because I like to stay on track. My meetings are always collaborative and friendly. I will not participate in meetings that are not. The largest difficulty I have found with these meetings is the growing frustration with inadequate samples or data that does not align with instruction or when other topics override our need to conduct an analysis of the assessment data. It's made me do a much better job with my own assessments and analysis process because we cannot always rely on assessments produced from outside vendors.

[Domain #5: Self-actualization]

As I reflect on all of my experiences I would say that it was one of personal growth. I really did not have any formal training or even much support from the administration. What I have learned I learned at the university level or on my own. I think that most of us have similar experiences and that is what makes us professionals. I think that this is what has made me good at data analysis. I was able to develop my own process and my own judgments. It has made me more effective. I think that if a process was forced on me, I would follow it, but it would not feel right and probably would not be the most appropriate for my class and my instructional strategies. I believe that each one of us does analysis every day, whether formal or informal. It is nice to have some

time during the schools day to formally review the data and make the necessary plans, but we also do this during the course of instruction.

Moving forward, I am going to continue doing what I am doing. Maybe in the future the process will be more efficient as the technology increases our access to timely information and multiple data sources. But my process will be the same. I hope that as we have more discussions that we can begin to make the assessment instruments more relevant and connected to the instruction. I agree with having district benchmark assessments, but we also need to focus on the classroom assessments. That is where I can make more accurate and timely instructional decisions, not on the end of quarter assessments.

Janelle (High School Teacher)

[Domain #1: Motivation]

I think we should all be able to analyze the data. But I also think it is more important that we are properly trained and given the time to do it effectively. I hope that this will create an environment where we have more time to analyze the data and to discuss it with our teams because it is not enough to do it just in your class this needs to be across the grade level or department and across the school. If we can't discuss the data and our instructional programs then the numbers are useless**.**

I believe most educators are fairly good at some level of analyzing and interpreting student assessment data. But it depends on who you are and how much you do it. It's like anything else, the more you do it the better you get at it and the better you get the more comfortable you feel. I think I'm pretty good at the whole thing. You know its not complicated and once you've done it a few times it gets easier. The hardest part at

first is putting your thoughts on paper. It's easy to look at the number and see if your class did a good job or not, but it's much harder to say what that means in regards to how you teach and what the kids are learning.

One of the things I struggle with is how to read data and what to take away. It is always an interesting and challenging thing. Ultimately, assessments and instruction should be married to efficiency. Without appropriate training we can't navigate the multiple sources of data and without time we cannot appropriately dig deeper into the data to adjust our instruction where needed as well as to identify those practices which are working.

[Domain #2: Contextualization of Learning]

During my first [data analysis] meeting I felt confused and a little dumb. I did not feel prepared. I did not even know how to read data. Nobody prepped me before the meeting of what was expected. We didn't have a strong department and most didn't even want to meet. After a while I started to work with some other teachers who helped me out. Also, we didn't have the software to help compile the data or even to run reports to look at. Also, I really don't think any of us knew what we were doing. This experience made me re-look at my practices. I mean if I was giving tests then shouldn't I be analyzing the data a little better so that I could help kids more.

I first learned about analyzing student assessment data when I attended a three-day workshop on how to use Data Director and how to use it to do data analysis. This was part of a project I was completing for my Masters degree. I think everybody should go through that. Once you learn the mechanics then you begin to master the process by working with other teachers and pick and choose from their processes. It's not

complicated. We make it complicated. It might be hard or frustrating to some if they are looking at the data as only pass/fail or an indictment on their own teaching. But if you look at it for what it is then it's easy. But that's the same with anything we do. Since then I have been using the same process for all of my classes, even though we use a different program now, the process is the same.

[Domain #3: Data Analysis Strategies]

For our protocol or process, we use a Cycle of Inquiry process. But it is really based on having quality data to analyze and a lot of interaction with the rest of the group. If people don't participate you don't get results. The process, while tedious is a good one. We look at which ones were used with positive data and see if I can use it in my class. Just talking about what works is helpful. Data does not give all the info but lets you see trends. I mean when its your data sometimes you get emotionally attached to it and its hard to look at it. I think the process helps us look less at our instruction and more at what the students are learning which makes it easier to make changes in our practices or at least to provide remedial work for the students.

I would have to say that the positive influences for me would have been the training that I received and the work I have done with WASC. It has allowed me to see things from different perspectives and to be able to put things into context. I also think that being able to have those conversations with teachers and administrators has enabled me to look at my own practices and how I use the data to inform my instruction.

I think just the tone that is set by either the school administration or the district office. So often teachers view the data not as a way to drive their instruction, but as a way for the district to measure and judge teachers. So how the administrators present the

information and how the communicate with us tells us a lot about how they view the data and then that will help build trust and confidence.

[Domain #4: Intergroup and Interpersonal Relations]

We meet as a full staff . . . and as a department once a month as a school policy. But in my department we probably meet once a week, though not always talking about student data. It all depends on when the test was given. When we meet as a large group its not always productive. I think that because it's only one hour if we don't have a strict agenda then its not really effective. Also, when we do meet there's a lot of other stuff we have to talk about. The direction and the effectiveness of these meetings also depends on how prepared we are before the meeting starts, whether or not the test matched our instruction, and what other things we have to talk about at the meeting.

When my department attends a data collaboration meeting we discuss data and improvement methods. I actually enjoy meeting with other teachers. I feel closer to them and my students when we are able to meet and really get into good professional discussion. I also get a chance to hear what others are doing. Too often we get stuck in our classrooms and never know if there is a better way.

[Domain #5: Self-actualization]

I think the tone that is set by either the school administration or the district office is so critical. So often teachers view the data not as a way to drive their instruction, but as a way for the district to measure and judge them. So how the administrators present the information and how they communicate with us tells us a lot about how they view the data and then that will help build trust and confidence.

I guess I would have to say that I am really beginning to learn how to analyze and interpret the data. It's a journey. Both in terms of learning how to analyze the data and apply it to your instructional program, as well as making sense of all of those numbers. It's not as simple as applying it to a letter grade. You have to apply it to student learning. Especially now with the new content standards focusing so much on applying learned content. But once you get to that point you have become an educator.

When I first started teaching the data was just a bunch of number that I used to assign a letter grade. Now that data has real meaning. I tells me which students are meeting the standards and which are not. It tells me if I need to change my instruction or regroup the students. The data now has meaning to my program. Now I can see myself getting better at aligning my instruction to the data. I don't see data analysis going away. I actually see it becoming more critical to what we are doing as teachers. I use it to look at student progress and how they did on the benchmark assessments.

Joshua (Middle School Teacher)

[Domain #1: Motivation]

I know that analyzing student data is important and that we are supposed to make sense of the results so we can regroup the kids for intervention instruction. But, I am not sure I have been trained enough to connect the dots. It is been too informal. I wish we could have a formal training program where we are given different processes to try and maybe even have somebody facilitate at our grade level meetings. I don't mind having to look at the data.

Because my administration gives us the printouts it makes it easy to see our kids' results. So I'm comfortable talking about the data, but I'm not as comfortable in actually

analyzing the data myself. I don't think I could do it on my own. Probably bad at talking about what the data says. We have a director in the district who keeps saying that you have to look at the data and tell people what it means. I keep telling him that when kids get a low score it means they didn't get it. He usually laughs and then says, but what does that mean. So I guess I'm bad at saying what that means.

I still have a lot to learn and unfortunately it still seems like you have to do this on your own. But I am starting the see the bigger picture. I guess what I am trying to say is that once you understand the data you can apply the data to your instruction and the school's intervention program. It's unfortunate that there is not more formality brought to this. I mean as we see its importance you would hope that district and school administrators would provide for more formal training and more time to do it right, otherwise we are left to the level of expertise that each one of us has, which in some cases is not a lot.

[As for the skill of others] I think there is only a small handful who really know what they are doing. I think most know that we should be doing it and a lot of us know the buzz words, but most, and I'm one of them, don't really know how to do it. I think administrators are a little better at it because that's more of what their job is about. I mean teachers need to be able to look at the data and make quick decisions, but it's not as important as actually teaching.

[Domain #2: Contextualization of Learning]

Before getting into teaching I was a regional training manager for Sears. So I had to look at a lot of data in terms of the number of new employees, where they were working, what kind of background they had, and so on. As I put together training

modules, I knew I had to follow the corporate model, but I could tailor some of it to the local needs, such as demographics or common issues in the stores in my region. So I was able to transfer some of that knowledge into analyzing and interpreting student assessment data and what I didn't know I just picked it up somehow . . . probably . . . by just listening to the other teachers in my grade level.

During my first data analysis activity I can honestly say I felt stupid. Nobody told me what we were supposed to do or even what I needed to bring to the meeting. And at the meeting, I didn't even know what they were talking about. I thought I knew what data analysis was, but only a couple of teachers really talked and I'm not sure I got anything out of it. I was the new kid and so I guess they all knew what they were talking about, but I didn't. I was disappointed [with that meeting]. I mean as the new teacher I was already in the room in the middle of nowhere, but then it seemed like nobody cared about me. I thought that this was a waste of time. Maybe that's why we only have one meeting a month. After a while I started working more with my partner and between the two of us we started to look at the data on our own. I think that's really how I learned what little I do know.

[Domain #3: Data Analysis Strategies]

Well, our principal gives us a copy of the print out from the quarterly assessment. We usually take the test on a Tuesday so it's usually in our boxes by Wednesday morning. We are supposed to review the data before our meeting on Thursday. So when we look at the reports we do talk about how our students performed and sometimes talk about how we taught the lessons. I guess that is our data analysis strategy.

One positive influence would be the access to student assessment data in a more timely and organized fashion. When I first started t was so much work just to compile the data so all we really did was look at grades and raw scores, but now we can look at longitudinal data. One negative, though, is that there seems to be so many models or procedures, so many points of view, and most of all very little direction of what we are really supposed to do with the data once we get it. What I mean is that it is not enough to have access to the data, you need a strong leader, whether that is an administrator or a teacher or a specialist who can work with individual teachers or teams to deconstruct that data and apply it to the instruction and to the support that is needed for all students. So if you don't have that then the lack of it is a negative influence.

[Domain #4: Intergroup and Interpersonal Relations]

We meet once a month or so to review test scores and other projects, although, we really don't talk much about the nuts and bolts of the data. We normally just look at the data sheets that the administration gives us to see how our kids did. I mostly look at the cluster analysis to see in the big picture how the students are doing. If you look only at the individual items then you get fixated on those instead of the big picture. Then I look for patterns in the results to see if I need to review the lessons, or give extra work, and so on. I think it's important to be skilled at data analysis for all educators. And now that we have so much data available we can really do a better job at it.

[Domain #5: Self-actualization]

Other than the increased use of technology, I don't see much changing. I don't see any training being offered by the school or district because we are in program improvement and other issues will take center stage. I don't see having more time to

review the data and collaborate with other teachers. Mostly because the collaboration is ineffective as it is. I mean we spend a lot of time looking a the data and filling out this protocol sheet and then the principal never comes by to look at our instruction and verify what we said we were going to do in class is actually happening. Sure he is in there a lot, but I never get any feedback as it relates to the protocol form that we fill out. I guess you could tell that I don't like filling out the protocol form. I guess it makes sense, but if the principal never reviews it and there is no follow-up then what's the point. I mean, I know when my students are doing well and not doing well. We have enough tests throughout the different units to know that.

Leonard (Elementary School Administrator)

[Domain #1: Motivation]

Education is continually coming up with new "buzz words" and silver bullets. Data analysis is an important tool for pointing us in the right direction. Ultimately, without highly trained and motivated teachers and administrators to implement reform, the data analysis will have little or no impact. Without great teaching and administrative follow-up, data analysis becomes a dud rather than a silver bullet.

I use it [student assessment data] to look at school-wide performance on the CSTs and the benchmarks. It helps to be able to compare how classes and grade level are performing and each teacher can use it to identify which student is performing at grade level standards. Without knowing how to [analyze and interpret student assessment data] do how can you map out your curriculum? I think it's what distinguishes a great teacher, or administrator, from a good one.

I do like working with teachers and listening to them as they deconstruct the data and come up with their own analysis, but I don' like having meetings with teachers who want to complain about the data or the assessment instead of just accepting what the data reveals and moving on to better develop their instructional programs.

I do know of a few at the district office and here and there at some of the schools [who are good at data analysis]. But . . . we don't do it enough formally to get really skilled at it and we don't talk enough about it in greater detail to get comfortable with it. I think its because we have so many other things going on that this is a lot of work if you're not good at it. And people don't like to do a lot of work. Its easier to talk about sports, or student behavior or to say that since your class has all As that the kids are learning. Unfortunately an A does not always mean you learned anything.

[Domain #2: Contextualization of Learning]

When I was a VP, I really focused on facilities and student discipline. So it really wasn't until I became principal a few years ago that I started to really focus on data analysis. So, I really had to start talking to other people. I went to a workshop that I thought was about data analysis and it was more of how to use the data after you analyzed it to write your school plan. So I haven't had any significant training in analyzing assessment data. I wish I did. Actually, I wish I did when I was a teacher because right now I just don't have the time to be away from the school and we don't have any professional development funds or time to send people to training or even to bring trainers in. I think I have a good grasp on what should be done, but on the other hand I really never did it as a teacher. I was a PE teacher so we didn't do data analysis.

[Domain #3: Data Analysis Strategies]

Well, after each assessment, the district produced a report for us and sent it in the binder. That's what we call it, the "binder." It has all of the reports for each class. On these days, each grade level meets to review the reports and figure out which students met the performance indicators and which did not. Afterwards, they are supposed to talk about what to do as a result of the analysis. For example, they can talk about intervention programs, instructional strategies, regrouping, etc.

When groups of teachers and administrators look at the data and come up with strategies in response that will really help students would be a positive. Also, when the data can give folks a "reality slap" that motivates them to improve their teaching practices and focus on identified areas of need. For example, our data demonstrates that there is a need to focus on our LTEL's.

As the principal I don't get involved in this directly. But, the teachers are supposed to be looking at common areas where the students did not perform as well. Then they are supposed to share with each other how they taught the material and what they used. From that they can discuss grade level commonalities. We usually talk about how the students did, how they taught the lessons, and so on. Sometime we end up talking about of stuff like student absences, parent involvement, and discipline issues. You know all of the other stuff that gets people off track.

I think early on it just trying to compile all of the data. Before Edusoft we had to do it all by hand. We tried to use Scantron and CADS but it was still difficult. I think that is why so many teachers don't like the process. It was just cumbersome.

When groups of teachers and administrators look at the data and come up with strategies in response that will really help students would be a positive. Also, when the data can give folks a "reality slap" that motivates them to improve their teaching practices and focus on identified areas of need. For example, our data demonstrates that there is a need to focus on our LTEL's.

When groups of teachers and administrators look at the data and bird walk in a seemingly endless effort to maintain and justify their current ineffective practices. What a waste of time.

[Domain #4: Intergroup and Interpersonal Relations]

We have monthly meetings to talk about the most recent benchmark test and curriculum embedded assessment, as well as any other school-wide agenda items. We are starting to form Professional Learning Communities, but with only one contract meeting a month it's hard. It depends on what else has happened since the last meeting and of course who shows up at the meeting and what personal agenda they have.

I really enjoy listening to others as they develop their own analysis. It gives me a different perspective and it lets me see what is important to them based on what they focus on in the analysis and interpretation process.

[Domain #5: Self-actualization]

For me, I have discovered how personal data analysis is. No amount of training will make you proficient at data analysis if you do not internalize it. I am constantly getting barraged with requests for more training from my staff. And I agree that they do need training. However, I think most of the teachers miss the point. We have had training on how to use the software. But the software only compiles the data and allows

you to manipulate the data to make comparisons. But the software does not analyze and interpret the data for you. The same is true for any particular protocol. It is just a tool to compile the data and guide the discussion. The real work is with the individual teacher or administrator trying to make sense of the data and then knowing what to do with it afterwards. That is where we make our money. When I talk to teachers they keep saying they need more training. I keep saying that they have plenty of training. It's called personal experiences. It's the time you spend getting to know the data and making sense of it. It's the time you spend discussing the data with other teachers. You have to come to know the data on your own for it to have real, personal meaning. Just following some arbitrary process will get you to first base, but it will never hit a home run.

My newest realization or "ah ha" moment is that data analysis ultimately has little value without very effective follow-up. With regard to the implementation of SDAIE/SIOP strategies, it is key to train administrators in depth so they can tell when teachers are using strategies in an integrated and seamless mode or are just posturing because an administrator happens to be in the classroom. In the future, I hope to strike an effective balance between data analysis and effective follow-up. One is largely meaningless without the other. I would ask the district staff to provide me with more knowledge to validate my feelings. If I don't know I'm doing it right or wrong then how can I ever improve? They just need to let me know and then provide the assistance if they think I need it. I just don't think they are trained enough to even know how to help. I think . . . without proper analysis it's like driving without a map. You need to know where you are going. The data helps you plan where you are going. I think my statement

would actually be more of a question, “I hope that this is as important to the teachers as it is to me."

Lin (High School Teacher)

[Domain #1: Motivation]

I use student assessment data to see where my students are in relation to the standards and how my class has performed within the grade level versus long-term learning. It’s part of the job and it’s really nothing more than advanced grading. When we give an A or an F you are subconsciously analyzing the data. So it’s just an elevated process from that. For me, I will continue to get better at analyzing the data. My goal, though, is to become more confident in using the data to analyze how I am teaching and how effective my intervention programs are.

Sometimes the data is overwhelming. You can have too much of it. When this happens it's almost like the data contradicts itself or points you in the wrong direction. But at other times the data can really point out what kids really know, especially when it is the third or fourth assessment. It really makes me understand the importance of working closely with other teachers and really looking at my practices. You know the information doesn't teach itself. The teacher teaches it and when the kids do poorly you have to look at what you are doing. But at the same time the data can also show you what you are doing right like when kids get a question right that was there only as a predictor and you never taught the item directly. It shows that the students were paying attention and now you don't need to spend so much time teaching that item.

I think that most teachers know [how to analyze and interpret student assessment data] on a superficial level. But if you asked them to explain the process to you a lot of

them probably couldn't. I think most of them just care about whether or not a student passed and maybe even what are some common problems. But, I don't think that most of the teachers have the time to sit down and really look at the gap between what was taught and what was learned and ho we can close that gap. I think some principals think they do [know it]. I once had a vice principal that sat with us in our department and she would always talk about data analysis and what we should be looking at. But when it was time to actually analyze the data, she always found some reason to miss our meeting. My current principal, though, seems to know what he is talking about. Although, I think he gets so excited about it that sometimes it's hard to follow him. But I think he knows what he is doing.

[Domain #2: Contextualization of Learning]

I think I had some positive pre-teaching experiences in analyzing data. In my methodology classes for my credential we incorporated data analysis with some of the instructional strategies. But we never really got into the depth of analysis we have to do at my school. So I had to learn mostly by listening to other teachers. My principal also works with us a lot. He makes us read Marzano, Reeves, and DuFor books. [Because of that] I think I'm pretty good at the analysis, interpretation, and implementation for further use. But, sometimes it depends on the circumstances. I mean. I guess it comes down to how much time we have to analyze the data and how familiar I am with the assessment. Last year, I helped to design the first two assessments for the district, but not the last one. So the first two were easy to analyze because I kinda knew where my students were before they took the test. So if a student didn't score well, I sort of knew why. But, with the last test, I had no idea how they were going to do. I didn't even get the test until that

morning. When I know what is being tested it seems like I can see it easier so it makes it easier to talk about the results. But that was not always the case. During my first data analysis meeting I felt lost looking at all the numbers. It took me days to go back and look at it with an idea of how I wanted to use the information. I don't think anybody would be prepared going into a meeting like that for the first time. I was just trying to keep up with the explanations while looking at the data pages. I did not feel alone. I mean the group was good to me, but they had a task to complete so I guess I was left out in the dark, but that was only temporary. After a while I caught on. At first it made me not want to look at the data. Later I realized it was tough to do but necessary.

[Now] I think I'm pretty good at the analysis, interpretation, and implementation for further use. And I don't like data for data sakes. There is such a thing as too much testing. I think most [teachers] know it on a superficial level. But if you asked them to explain the process to you a lot of them probably couldn't. I think most of them just care about whether or not a student passed and maybe even what are some common problems. But, I don't think that most of the teachers have the time to sit down and really look at the gap between what was taught and what was learned and ho we can close that gap. I think some principals think they do. I once had a vice principal that sat with us in our department and she would always talk about data analysis and what we should be looking at. But when it was time to actually analyze the data, she always found some reason to miss our meeting. My current principal, though, seems to know what he is talking about. Although, I think he gets so excited about it that sometimes it’s hard to follow him. But I think he knows what he is doing.

[Domain #3: Data Analysis Strategies]

After receipt of DBA data, we look at strands and see what strands need to be reviewed for understanding, and will spiral review these strands throughout the school year. Sometimes we use the data to determine which teacher will teach which strand of standard plus for intervention. The strands that have the lowest % are the ones that are reviewed.

In terms of positive and negative influences affecting data analysis, the positive would be time and training and the negative influences would be data ignorance and stubbornness. If you have the training and the time you can actually effectively analyze the data and then use that data to form intervention groups and adjust your instruction or plan advanced instruction. But without the training you would have a hard time deconstructing the data and making it make sense. You also wouldn't know what strategies to employ as a result of the data. And without time, you simply can't put into practice those ideas, much less be able to adequately analyze the data. As for the negatives, I think it's obvious. We have teachers, and I must admit I can be one of them, who simply don't want to change or adapt; who think their way is the best way and the only way. I think that this is where the principal needs to step in a find a way to either bring those teachers along or to minimize their negative influence on the data meetings.

[Domain #4: Intergroup and Interpersonal Relations]

We meet twice a month- once as a general staff and once as a department. I think my department is pretty good at analyzing the results. Those of us who teach the same course try to give the same test so when we meet we are generally on the same pacing guide. That makes it easier. Sometimes it is [effective] and sometimes it isn't. It

depends. The legacy of the single room schoolhouse still persists. Some of my colleagues are usually disinterested in participating and some enjoy collaboration opportunities. Some administrators are more open to looking at the results as a measure of progress and not evaluation while others allow preconceived biases and egos, like most teachers, to interfere with true data interpretation. It's tough when it's with the principal, though. I think he reviews our stuff before he meets with us. So he comes in asks us a lot of questions. At first it made me uncomfortable because it was like he was trying to make us look stupid, but I got used to it and now I know what questions he is going to ask.

[When we meet] we usually start off talking about the most recent assessment or project that the students completed. Most of the time, though, the discussion is limited because some of us teach different subjects within the department. We are getting better at this. But quite often we end up talking about other things that are not germane to reviewing the data from the latest assessment. We generally are polite to each other. Although when we start talking about changes then everybody becomes defensive and protective of their programs...even when they are outdated and ineffective.

I think the most important thing I get out of these [data analysis meetings] is seeing what the teachers on the other grades are doing and how the kids are performing. Because I am going to get those kids and need to know what they already know or don't know. I think it's also important to know what the next grade needs my kids to be able to do.

[Domain #5: Self-actualization]

For me, I would say that how we analyze the data and make sense of it is based so much on the training we have received and what our previous experiences have been. The data is the data; it doesn't change. But how we view it does. If you could only sit in our meetings you would see the difference between how we all view the same data. Partly because some don't want to see it for what it is and partly because we tend to look at it through our lenses and what we want to use it for.

For me I will continue to get better at analyzing the data. My goal, though, is to become more confident in using the data to analyze how I am teaching and how effective my intervention programs are, and also with working with my team to make the discussions more meaningful to all of us. But there will always be the naysayers in the group. It is what it is.

I guess it comes down to how much time we have to analyze the data and how familiar I am with the assessment. Last year, I helped to design the first two assessments for the district, but not the last one. So the first two were easy to analyze because I kinda of knew where my students were before they took the test. So if a student didn't score well, I sort of knew why. But, with the last test, I had no idea how they were going to do. I didn't even get the test until that morning. When I know what is being tested it seems like I can see it easier so it makes it easier to talk about the results.

Martin (Middle School Administrator)

[Domain #1: Motivation]

I use it [student assessment data] to look at grade level and school level achievement data. For me, there are a couple things I look at. I look at the bigger picture

as a school then grade level and then class. You know data is not isolated but related to so many other things. So you need to have a process. I look at it like building a house. You need a foundation analysis then you start looking at the trimming, which we can call subgroups**.**

I feel comfortable analyzing the data because I think I had some great training, but sometimes I second-guess myself when talking about the numbers and percentages because other educators have some great ideas too. You're not doing your job effectively if you're not good at it. And now the software makes it even easier so there's no excuse to not be good at it. But, I don't think that most [teachers] are given the opportunity or resources to get good at it. They definitely need more professional development. I think most administrators are [skilled at analyzing and interpreting student assessment data] because they have the time and training to do it. However I think that because it's constantly changing I don't think some keep up with the new stuff. I don't think they are necessarily willing to look at things differently. I think a lot of them are set in their ways. In their system they are good, but they don't look beyond their system.

[Domain #2: Contextualization of Learning]

So my first time [analyzing student assessment data] was pretty easy. It was when I went through the training. I was fortunate to have a lot of professional development my first year teaching. I think I had about ten release days [for training]. I think there was probably me and six other teachers that meet and review our students' test scores from each benchmark. He had us look at each student and each cluster of standards. After that he taught us how to use that data to evaluate the instruction given and the instruction that needs to be given. That was an awesome experience. I actually

felt very overwhelmed. It was a lot to absorb all at once. Over time I learned how to make sense of it all. I was eager to learn and excited to figure out and get it to make sense and why it didn't. But, I guess every teacher is different, and how they get there is individual. I think as a principal now I really try to do it [data analysis] every time we meet so that it becomes a normal process. I do it with the leadership and grade level teams and individual teachers. It is now a part of the school process. Now that I am a principal it makes me want to provide a comfortable environment for my teachers to do data analysis. I don't want them to have any more bad experiences like they've had over the last three years. I can't change what has already happened to some, but I can make the situation better moving forward. I also want to make sure that my teachers have received a lot of training and a lot of time to do the analysis correctly like I have had.

[Domain #3: Data Analysis Strategies]

I don't think I really have a particular strategy, at least nothing formal. We've tried a few scripted analysis agendas but I don't think we are ready to introduce one formally until we have a better handle on explaining why the process is so important and getting everybody on board. I mean when the results are pulled from OARS I look first at the school wide cluster analysis portion of the reports. This gives me an idea of how the students are performing across all grade levels in the same reporting clusters. When we meet with the grade levels we go over how the students in that grade performed on each reporting cluster and talk about teaching strategies.

My experiences and my teams desire to collaborate can be both a positive and a negative influence. If you have had positive experiences and worked with other educators then you feel more confident in your abilities and more willing to look at new

things. If you have bad experiences, or no previous experiences, then you are less willing to do it, and probably unprepared to do it. I had a principal who said it was ok to make mistakes as long as you tried your best and were logical in your approach. So I learned from him to just. He would always say that you could adjust from something, but not from nothing. So he was a positive influence with his support. But now, we don't talk about data as a district. Every time we try there seems to be some distraction. I just don't think it is important for the district or maybe they are confident in having those discussions. So I have to keep reminding myself that the data is about my school and not the district. Sometimes that is a negative influence.

[Domain #4: Intergroup and Interpersonal Relations]

I meet with my grade level teams a couple times a month and my leadership team once a month. I think they [data analysis meetings] are effective. This is my first full year at the school so I am trying to build trust and confidence with what we are doing. Personally, not to be silly, but it is such a sense of satisfaction when you see teachers really starting to get it and not be afraid of looking at themselves and internalize the data. Because the school has taken a few steps backward in the last two years we are rebuilding the process. With that said I get bits and pieces and learn something new with each opportunity. I really like it when you can see different groups using different processes and still coming up with valuable analyses. With teachers, at least at my school, they are very open to what I am trying to do. I think there is a level of trust and comfort that makes this valuable. With other administrators I think everybody is guarded against what they say. Nobody wants to talk about bad scores, even if the starting point was lower and you made significant improvements. I also think that when administrators get together

everybody tries to prove that they are smarter than you. Maybe that is why as a district we don't meet to talk about the data. We don't talk at all about data. Not like I do with my teachers. There's nothing organized in the district. I think it would help me learn from my colleagues.

[Domain #5: Self-actualization]

Being able to effectively analyze and interpret student assessment data is definitely about personal growth and learning. I was fortunate to have good training early on in my career. But I think it was more important the amount of personal time I spent learning it myself and applying what others have taught me through collaborative meetings or informal discussions. It's not enough to have a protocol form to follow, you have to internalize the data so when you see similar data in the future you have an idea of what it means and what to do with it. As educators we are expected to use our collective experiences to help students learn, that is what separates us from other professionals. So I think it is important that we discover our abilities in analyzing data and our own particular processes. Otherwise, if we are satisfied with only using what others say then we aren't progressing as educators. You know, it's also important that we are comfortable with our abilities because we won't always have data analysis meetings set aside. Sometimes we might have to make snap decisions. So if you had to learn on your own over time, you probably have internalized it better and can pull out that knowledge more quickly. If you have had positive experiences and worked with other educators then you feel more confident in your abilities and more willing to look at new things. If you had bad experiences, or no previous experiences, then you are less willing to do it and probably unprepared to do it. I had a principal who said it was ok to make mistakes

as long as you tried your best and were logical in your approach. He would always say that you could adjust from something, but not from nothing. So he was a positive influence with his support. But now, we don't talk about data as a district. Every time we try there seems to be some distraction. I just don't think it is important for the district or maybe they are confident in having those discussions. So I have to keep reminding myself that the data is about my school and not the district. Sometimes that is a negative influence.

I still think that giving myself and the staff the time and resources and technology to analyze the data is important. With this the sense of comfort with the process increases. If I don't provide a safe, comforting environment to my staff I can't expect them to ever buy into changes. And can't allow myself to get pissed at them if they don't get it. I think the ability to provide an environment where they are comfortable and look at things and be open about it is critical. It's hard for teachers to... accept when there is failure they want to be successful. The outside influences and unions putting things in their brains, and some people have a little of both. At my school it seems more like they were very quiet and making sure there was a trust factor with me before they started to open up [to the process]. I think this discomfort and distrust is due to a of lack of training. Nobody wants to look stupid and nobody wants others to think they are a bad teacher.

Michael (Middle School Teacher)

[Domain #1: Motivation]

I use the data for analyzing my students' achievement on each assessment and to monitor their progress throughout the year as they take other assessments. This also helps me predict how they might do on the CSTs in April.

I think it's important [to be skilled at data analysis] but not the most critical thing to the job. You can be ok at it and still get by. I think the worse your students perform the better you have to be because you need to be able to pinpoint the areas of concern and then know how to remedy the issue.

I think I am pretty skilled at data analysis. I mean I know I'm not as good as others, but I know the basics. I am definitely getting better at it. I think I am more confident in my analysis. I also think I am getting better at applying that to how I regroup the kids and how I try to create my tests. I think I'm pretty good at looking at the cluster analysis and then reframing my instruction to hit on those prerequisite skills that the kids didn't get. I think sometimes I overanalyze things. You should see some of the reports I can run. Sometimes it takes up too much of my time. I like crunching the numbers. For some reason, that appeals to me. Sometimes the principal lets me put together some reports. But, what I don't like is having to talk about the data other than with my own students. I feel like some of the teachers just think I trying to show off, so it's easier just to focus on my students

I'm not sure if the teachers and administrators I know are really skilled at analyzing and interpreting student assessment data. I mean most of the teachers try. I just think we need more time and more professional development to help do it quicker and better. I think most administrators are good at it. At least the ones I have worked with. You know some of them have helped us understand the reports. My last principal came to our department meeting once in a while and asked us about the results of our analysis and how we are going to help kids overcome their difficulties.

[Domain #2: Contextualization of Learning]

Thinking back [on my first data analysis meeting], I guess I was a bit nervous my first time. I didn't have any training, but I think I had enough common sense to be able to look at the data and at least you know if the kids were doing well or not. I didn't have any formal training and I wasn't really sure how in-depth we were supposed to go. Back then, we at least had a couple of meetings each month so we did have more time. But now, with only one meeting a month, it's tough. I think . . . [the difficulty] in that meeting was just the general lack of formal training and not knowing. Our principal at that time wasn't the most up-to-date on data analysis. He was great with the kids, but not so much with the curriculum. In looking back on that experience I realize that what we needed was better training and more guidance from the principal and what the expectations were.

I'm really not sure how I learned how to analyze student data. At first I think I just picked it up from listening to other teachers. But, I feel pretty comfortable in my abilities.

[Domain #3: Data Analysis Strategies]

Well, after we get the printout from the office late Tuesday or first thing Wednesday morning, I look at the data and try to find common strengths and weaknesses in each cluster. At our meeting each month the other four teachers and I look at what is common among all of our classes. It's a lot of work since we each teach five period, so that about 150 kids. So after we do this, we talk about regrouping the kids or what we will focus on during the lunchtime tutoring.

For me a positive influence is the fact that we do have access to multiple data sets and if you want you can view student performance from multiple contexts. I think a

negative influence is the lack of training and effective data discussions. I don't just mean among teachers. Sometimes it feels like when we talk among ourselves that we are looking at the data differently than when we talk to the administration. I mean we are all looking at the same data, but I think we are looking at it for different reasons. That is frustrating because we don't have one clear message. I think it has to do with your training and previous experiences and I think it has a lot to do with what the data means to you and your position. I think the principals want the data to reflect favorably on them because that is how the superintendent will view them. I could care less, myself. The data for me is supposed to tell me how the students are performing and what help they need.

Another struggle would be trying to make sense of the data. You know if the test isn't designed very well then it's hard to analyze the results. They simply won't make sense. At first, the district wrote the tests themselves or bought if from somewhere. That was a struggle because it didn't match our pacing guides. But now, teachers get to make the test. So it's more aligned to what we are teaching.

[Domain #4: Intergroup and Interpersonal Relations]

We meet on Thursdays, so we try to give our tests on Tuesday so that we have a little time for the office to run the reports and to look at them before we meet. If we get them in time and everybody looks at it and comes to the meeting with some good thoughts then we can have a good conversation. It's nice to talk to other teachers, but mostly everybody is really only concerned about their own classes. Sometimes, my partner and I are able to look at common mistakes among our students and we try to incorporate that into our instruction. Or we will make sure we add those items to the next

test. A few years ago it was different when I didn't know the first thing about data analysis. It's like we meet, we talk, and then we're done. It didn't go any further than that. We've gotten much better about talking about the content cluster performance. Because we are all math teachers, we see the same clusters constantly appearing on each test, so we really need to be able to deconstruct the performance on each one. The more we do it, I think the better we get at it. It is lot different [with administrators]. I sometimes feel like I'm on the spot when it's with my new principal. I guess its because he really seems to know what he is talking about and I think he just wants to get to the point of the analysis. He just wants to know how the kids did. What does the data say about their progress? And what steps are we taking next to ensure their success?

[Domain #5: Self-actualization]

I know that the district is really trying to push the Professional Learning Communities model, but that is based more on us already knowing how to analyze the data. I think until we all really know what the process looks like we wont be able to truly have PLCs. I think that's what makes teacher uncomfortable talking about the data. Not everybody knows what we are supposed to be doing or what the end product should even look like. I think that a critical component to that is also time. We just don't have enough time. What little we have is taken up with other issues. I can't believe how much time is wasted at general staff meetings and department meetings. It's really frustrating. Without proper training, time to analyze the data, time to collaborate with others, and time to actually implement then why do it? It makes sense why it's important, but it also makes sense that if it is important then it should be treated as such and not just left to each person to develop on their own. That's nice for some things, but for this I believe

that we really need to be given more guidance. That allows us to have a better idea of what we are doing and gives us the tools to investigate other protocols and practices.

I don't see much changing. So much of what we do is based on the hand we are dealt. Sure, I will continue to get better at analyzing the data for my class. But without school wide training, more time and more guidance for data meetings... not much will change. We will still look at the data, and then go into our classrooms and do our own thing. We must have stronger leadership and more direction. This means we must have more effective discussions about what training we need and what the data can and should be used for.

Shirley (Elementary School Teacher)

[Domain #1: Motivation]

Basically [I use student assessment data] to see where my students are in relation to the standards and the assessment. Based on their scores I can decide what I need to do to help them do better on a retest or on future tests.

I feel pretty comfortable with my own skills. At my last school we met a lot and everything was very focused so you had to know what you were doing or talking about because you didn't want to look stupid when the principal would have you talk about your data at the full staff meeting. We had a program specialist that helped us with data analysis. After each assessment, she would come around and work with the math and language arts teachers to help us look at the results and analyze those results. She was really good at it. She was really patient and gave us a sample protocol form. She helped me understand the nuances of what the standards were and the difference between grade level performance and prerequisite skill, you know like understanding prior level number

sense before doing algebraic calculations. At my current school, we don't do that as much so sometimes I feel like some people think I am a “know-it-all”, because I want to talk about these things and get them excited about [them], especially now that we are approaching program improvement and the adoption of the new standards.

I think everybody knows they are supposed to be doing it [analyzing and interpreting student assessment data] and some are good at it. But I also think we don't do it enough to really get good at it. Data analysis is a perishable skill. You don't realize just how much time goes into analyzing one assessment. And we don't have enough time so you need to get good at it and trust yourself when you do it. I also don't think we talk openly and honestly enough about it to get good. I also think that most of the principals are good at it. I think because they can shut their doors and look at the data without having to worry about 35 students in front of them. But I don't think they are good at helping us get better. I never hear my principal really getting into the weeds of the analysis. She just talks about the overall scores and only talks about what the district office gives us in the print outs.

[Domain #2: Contextualization of Learning]

My experiences are probably like so many others. What we know now is what we learned mostly on our own by listening to others, going to some workshops- sometimes unrelated- and by trial and error. Unfortunately, I have to assume that what I am doing is right, even though I know I could be better, because we haven’t given data analysis and application the proper focus, time, and importance that it deserves.

When I first had to analyze student assessment data... it was difficult. There wasn't much prep work- we got right into it. It was a bit intimidating since I was the new

teacher in the group. I really had no idea what API stood for and absolutely no idea what AYP was. Everybody else seemed to get it and nodded and “oohed” and “awed” and it was intimidating to me because it seemed like they were looking at me and wondering why I wasn't having the same reactions. Like I said, I didn't even know what the acronyms even meant, much less how to analyze the data in the reports. There were a lot of reports but it just seemed like a lot of numbers and Excel spreadsheets. Thank God that we now have OARs to run clean reports that I can export into excel and use the pivot tables to do comparisons. That [experience] really made me want to learn more about analyzing the data and to do it quickly. It really was uncomfortable having people look at you and wonder why your reactions are not the same at theirs. I became a teacher to teach not to be a statistician.

[Domain #3: Data Analysis Strategies]

Well basically after the test I get a class and individual student report. What I am looking at is the number of kids that miss each question. I am focused on those questions were 25% or more missed the question. I think that is a good cutoff point. Then I group those questions by content cluster. Depending on which clusters caused the most problems I either re-teach those skills or embed them into the next unit. Also, for those kids who missed more than 60% of the questions they get tagged for an intervention support. We are supposed to regroup students for a two-week intervention program by grade level.

A positive influence is the help and support you get from your colleagues whether teacher or administrator. You just can’t put a price tag on support. It helps you feel confident in your analysis and the resulting decisions and you feel comfortable trying

new things because you have built the trust. For me the most negative influence was not being trained and not being prepared. At first I was really turned off by the process. If some of my friends and colleagues had not helped me through it I don't know where I would be right now.

The largest struggle with analyzing data is when the assessments do not match the instruction, which renders the data irrelevant. On the other hand, I have been able to recognize changes in my students' scores. I have sometimes struggled with taking the data and applying it quickly to re-teach before beginning a new lesson or applying it to a current lesson as review. So, on the one hand I still struggle with the data, but on the other hand, I am getting better at analyzing the data and applying it to my instruction.

But a positive influence is the help and support you get from your colleagues whether teacher or administrator. You just can't put a price tag on support. It helps you feel confident in your analysis and the resulting decisions and you feel comfortable trying new things because you have built the trust. For me the most negative influence was not being trained and not being prepared. At first I was really turned off by the process. If some of my friends and colleagues had not helped me through it I don't know where I would be right now.

[Domain #4: Intergroup and Interpersonal Relations]

We do meet as grade levels, but we rarely talk about the data. We just gloss over it. Again, I don't think there is enough time to delve into a proper analysis. We don't meet often enough and when we do I don't think it is very valuable. When I started in this district most of our meetings were about talking about the kids that gave us the most trouble or the things that the principal was or was not doing. Reflecting back, I have

worked in groups in another district where we were given a set of analytical questions to answer. We were in a computer lab and did this on our own. Once we were finished we took that information back to our PLC team to discuss the data as it related to the whole team in order to develop more effective teaching strategies and intervention work. I thought those earlier meetings were great. There was enough time to thoroughly analyze the data and then to talk to other educators in my grade level to apply that data to the instruction. But now, it's fruitless. Most of the teachers don't seem to care or those who do seem burned out on the process. When we meet with the administrators we sometimes end up talking about the data but sometimes it degrades into superficial stuff. I guess it all depends on who is the principal. In my last district the principal was very focused on the discussion. I think that my current principal isn't as comfortable and is like hoping we lead the discussion for her because she doesn't know enough of the process and what we should be talking about. Most of the time she just hands us some reports and says pick something to improve on. I feel like we are being cheated out of guidance and leadership. We talk about the data as a group because we are asked to by the principal, but it doesn't go any further than that. I remember one of our data meetings we were discussing the results from our latest benchmark. One of the team members was very negative about his scores because his class didn't do well. We had to share our results and basically had to ignore him until he felt comfortable enough to talk to us. That particular incident really made me made. I worked hard at getting prepared for the meeting. You know at first I wasn't all for the way the district wanted to focus so much on the data analysis meetings. But I worked on it and I expected all of the others to do

the same. I mean at the end of the day we are here for the kids and to help them learn more.

[Domain #5: Self-actualization]

I actually enjoy analyzing the data and I think I'm pretty good at it but its frustrating at times when you can't easily figure out why students did not get something that was taught fairly well. I feel frustrated because I really want to do this well and I don't always feel that I have the tools or the guidance to do so. I think that is why the data meetings don't go as well as they should. We are all coming at this from different perspectives, training, and experiences and don't always know the direction we should be going in. I am going to keep learning. I am willing to try something new. That's what we preach to our students. I will always try to have relevant conversations with my colleagues, but I am focused on what is happening in my classroom.

I am going to keep learning. I am willing to try something new. That's what we preach to our students. I will always try to have relevant conversations with my colleagues, but I am focused on what is happening in my classroom.

I wish I could say to administrators provide more staff development opportunities and more time to actually analyze the data in depth. If we just look at the data as to who passed and who failed and once in a while at the clusters of concern then we haven't really analyzed the data. We need to dig deeper and see the patterns by student, by cluster, and by prerequisite skills. And then we need time to actually apply that data to our instructional practices or to our intervention programs

Sophia (Middle School Teacher)

[Domain #1: Motivation]

By looking at the data I can determine what areas are needed for additional instruction. But in order to do that I think teachers need training, more training, and more time to talk [about the] data at a deeper level than just running reports and only scratching the surface of analysis. I think if we had more time and training we could actually interpret the data. Right now we just see it for what it is instead of what we can use it for**.**

I am always learning something new every time I look at student data or discuss the data with my principal or other teachers. I will continue to learn as I move forward in my career. I can see myself becoming better at getting others in my department to engage in relevant conversations about student progress by using the data as the driving force.

[Now] I feel very comfortable. Because I am the department chair I get to look at the data beyond my class and I get to do it a lot more than most of the other teachers. I am content and confident that after comparing various data sources that I can conclude any disparities or areas of mastery. Based off the data I will better know how to drive my instruction and guide my students. As to my least favorite part of analyzing and interpreting data is seeing where my students are struggling and re-evaluating how they were taught . . . . After taking all this into consideration the hard part is how do I re-teach? It's exhausting.

[Domain #2: Contextualization of Learning]

The first time [conducting data analysis] was a bit overwhelming. I think I knew what to do technically, but emotionally it was draining because what I expected was not

reality. I think it was just the emotional connection I had to the data. I took it personally that my kids didn't do better. Why wouldn't you take that personally?

Since that [first] time I have felt that I had to learn it on my own . . . like hands-on training with math colleagues or some small staff development meetings with data analysis being the focus, and even with my last two principals.. At this point I feel that I have sufficient training from what I gathered from my colleagues for now but with more and more research being done I'm sure there is still a lot to learn. The training that I have found most useful comes within my department meetings; nothing formal, just small groups or one-on-one collaboration. We sit down take out our data, and break down the standards that where taught, share comments, discuss strategies used and where we need to go next with it. At this time I am currently in the process of refining this analysis part independently so next year would be the most conducive time to research new concepts.

[Domain #3: Data Analysis Strategies]

Generally, I shoot for 80% mastery of standards that come up on my tests and finals. With quizzes and homework I hope for the same but I am at the understanding that it may take longer to get there. From beginning to end I create questions that students should be demonstrating mastery on. Then I give the test and printout the data. Standards that are at 80% or better I move on with and will show them again every so often in warm ups. But for those standards that are less than 80% I go back and prioritize and will re-teach and spiral in with the new material. After reassessing, the goal is that the level of understanding increases at least another ten percent depending on where they were.

[Domain #4: Intergroup and Interpersonal Relations]

We meet at least once a month as a department and at least once as a team. During the department meetings we look at the data from the latest assessment and sometimes we use that meeting to prepare the next assessment. They are more effective this year. Last year we had some issues with staffing, but those individual are gone so now the whole team seems more engaged. I enjoy hearing what others say about the data and how they arrive at their conclusions. It helps me validate my process.

[Domain #5: Self-actualization]

Our experiences form our present knowledge base. For me, I struggled early on but with some guidance from my principals, the books I've read, I feel that I can now analyze and interpret student assessment data with enough precision to appropriately drive my instruction. What I learned throughout my journey has been valuable to my abilities now in analyzing data. Because I have been doing it enough, and have internalized it and made it my own, I feel that I am better prepared now to predict the outcomes of analysis, make better and quicker decisions with regard to instructional alignment, and am in a much better positions to help other teachers. But, I think that data analysis is at the heart of teaching. If we don't have quality progress monitoring then we might as well just throw the books at the students and let them fend for themselves. The data is critical to designing and aligning the curriculum and the instruction to help all students learn. I just wish there would be more training and more focus on the process and the outcomes.

I have been fortunate to have some great mentors who have pushed me to learn more about analyzing student data and applying that to my classroom instruction. That

support has been a huge positive influence. I have also had some negative experiences, though. My first two years I had to work with some very negative teachers in my department. I would dread going to the department meetings knowing that they were only going to complain and get us off topic. That was a really draining time for me.

To administrators I would say be patient, provide the necessary training, and create an environment where teachers trust the process and can are comfortable talking about data. To teachers I would also say be patient. You may not understand the process yet, but you will. Give it time. The process can be enlightening. When I have had the time to really analyze ad interpret the data I am able to use it to drive my instruction. Data drives your instruction. When you have the training and the time to appropriately analyze student data you will see things in their performance that may have missed during your course of instruction. When you look at the data from a distance you it makes more sense to you because you are removed from the moment. That's when you can look at the data in terms of what the students learned in the context of what you taught.

Tiana (Elementary School Administrator)

[Domain #1: Motivation]

I think analyzing and interpreting student assessment data is very important. And everybody better be good at it. It's our bread and butter. If we can't analyze all sorts of data then how do we make decisions? It becomes "guess work" and it becomes emotional instead of a logical analysis.

We use the [results] from our data analysis meetings to monitor student progress toward the standards and benchmarks and determine what, if any, instructional changes or intervention support is needed to help remedy the areas of concern.

I feel more comfortable doing it. It isn't anything particular, but I had to learn very quickly how to analyze and interpret data, but after a while I began to feel comfortable. I have been doing it so long now, I feel comfortable talking . . . talking to other people about data and getting their thoughts on how to do it. Last year I was in charge of the assessments at my school and it gave me a chance to really dig deep into understanding what they were proficient at and not. I also got to sit in on grade level meetings. As an administrator you usually only see the numbers, but I don' t always get to see what lead to the scores.

I think I'm pretty good at looking at the entire picture and knowing which kids really need to be pulled aside for intervention instruction. Not all kids who do poorly on a test need to have the same intervention program. So the raw scores don't necessarily tell the whole story. That being said, what am I bad at? I think I would have to say, "I need to work on getting others to see what I am talking about." I don't know if it's the lack of time or the lack of training, but sometimes it feels like I'm talking to the wall. I know what I'm saying about the data for some reason I don't think the teachers know what I'm really saying. I like working with teachers and getting into the weeds on the analysis with them, especially when we get that aha moment. On the other hand, there are still some teachers who just seem to want to fight the system and that's the part I don't like. Sometimes it's just so mentally draining.

But because I have never had any real formal training I didn't know how to assess the effectiveness of what they are doing and I didn't even know what I should be looking for when I talk to other educators. I kind of wish our district could send all of the administrators to a formal training. That we can all start with the same baseline as we then learn more on our own.

I think that there are a handful of teachers that really know it, know how to analyze it, know the purpose for it, and actually utilize it. I think that there are many teachers who use data analysis loosely and say, "What do we do now?" I feel . . . I can honestly say to you that my admin team doesn't really talk about data. We don't always have the time to look at individual scores and results. I make the information available but we just don't have formal discussions about it. We never sit together and come up with a game plan on how we are going to address the data as a team. This is both at the school and district level. That norm has not been set as to how we function as a team.

[Domain #2: Contextualization of Learning]

I think I am good at analyzing and interpreting student assessment data in spite of the lack of formal training. I don't recall any formal training. I do remember like informally an administrator coming to our meetings to share how look at data and the purpose of smart goals and how he used them at his school site. Although it was useful, I had never seen it before and hadn't used it until now. That was like five years ago. All of my training has been informal and I picked it up on my own. I had to rely on my colleagues to help me out. But most of the time they were too busy or didn't really know it themselves.

My first [data analysis] experience was tough . . . it was sink or swim. I had no experience with analyzing data before becoming a teacher. I mean, you were so focused on passing the class in college that you didn't really learn how to do any analysis. I had a relatively limited scope of what data analysis was. I was highly intimidated. It was not a good experience. I was a first year teacher and we had our literacy coach sit in on our meeting and I was the new teacher sitting around eleven experienced teachers. My mentor teacher was on that team. It was a gripe session among veteran teachers. We were [all] highly intimated. All we saw was our results sheet and I just remember red, yellow, green, and I was trying to figure out what my kids did and what we need to do next. I didn't have a clue. It was a completely negative experience. One teacher was saying, "Oh don't worry girl you will do better next time." I definitely felt alone because at that point in time I didn't get the concept of linking the results of the data to the curriculum and instruction. When I got my first job I had an end of unit assessment and when I turned in those scores to the teacher coach he spit back a color coded sheet that told you how your students did, which is what I thought data analysis was. It made me feel like it was all about the color codes, red, green, and yellow. It was a humbling experience. There was no protocol for discussing data or how to improve instruction based on that data. It's like if the kids do a good or bad job is was your fault. So I realized that I had to just learn by talking to other teachers. I think that I feel that I am a good administrator because of the experiences of feeling so uncomfortable. I think I would have been a better teacher if I understood the process better. For me now being able to help a teacher is important. It's like a personal thing. I don't want them to feel uncomfortable like I was.

[Domain #3: Data Analysis Strategies]

We use a modified Reeves Marzano protocol. We give our teachers a data analysis protocol, which utilizes the SMART goal system during our data analysis meetings . . . Our current practice, is that teachers teach toward an assessment and the results are given back to the teacher. They collectively share the results and based on the results they generate their goals. Even though they do it together as a team, they can individually choose to focus on other goals and develop other smart plan for their classroom. Together they create a strategic plan for intervention strategies or a focus on small group focus or pre-treating ahead. They go on and use their time frame and then students are reassessed and a report is generated and the process repeats as we monitor their progress toward their goal. For some grade levels its effective, but only if they are comfortable with sharing data. Currently, we have a grade level that is mostly new. Here they are expected to work together.

Because the formative [assessment] is teacher based, and unless they come up with a common criteria or assessment, it doesn't get analyzed the same way. I think I normally look at formative assessments much more informally and based on how much time I have. I don't see people using data from formative or interim assessment in the same way as summative even though that is sporadic. So it could be because of how the assessment is built and the way the output is delivered. It is radically different from teacher to teacher.

A positive influence in data analysis is definitely being a part of teams and collegial groups that discuss data guided by group norms and a respect of individual knowledge and skill sets in data analysis and interpretation. Also being allotted specific

time and resources to discuss data and being provided training to advance or improve in the area. And the negative influences would include being isolated from discussions about data, having no platform or time allotted to discuss data experiences, and only having one general administrative meeting which dedicates no time for me to commiserate with my fellow AP's to discuss ideas, concepts, views, perspectives, and plans.

[Domain #4: Intergroup and Interpersonal Relations]

I get to meet with the teachers on a regular basis. My principal and I divide up who we are going to meet with during the grade level meetings. So I would say [we meet] at least twice a month. I think that when I have shared with teachers it gives me insight in terms of pacing, instructional pacing, and components of the curriculum. It gives me insight into what's going on in the classroom. These are things that I don't have exposure to with my weekly observations.

[However], there doesn't seem to be a focus on creating a forum to have these discussions to collaborate with our peers [other administrators]. I think that many of them are afraid of talking about data because they don't think they know enough and don't want to be embarrassed in public. But if we aren't forced to talk about it we will never be comfortable talking about it. Other than with my principal, which is rare, I don't talk with other administrators. I know that the district keeps talking about one day having meetings to discuss district wide data, but that has not happened. I wish it would so I would see what others talk about at their meetings.

[Domain #5: Self-actualization]

As a whole, my experience in data analysis and interpretation is haphazardly thrown together. I've have very little formal training and most of what I do know has been learned during courses taken outside of my work environment or working with some of my colleagues. The only thing I could think of is it happened by accident. I feel that I was plopped into it by being thrown into an administrative position. Otherwise I would not be comfortable with it. Because I am an administrator I have to immerse myself into it. I have to take upon myself to learn. If I wasn't an administrator I wouldn't be plugging away trying to learn this. Overtime, I have become more comfortable discussing my views publicly but I still relish the opportunity to sit back and listen to others explain and share what they know. In the future I see myself being much more proficient at the data analysis and interpretation process. I am sure this will not be due to any extensive training or experiences provided by my district of employment, as I do not have faith that such training is of high priority. I will be pursuing opportunities on my own... because if we, as administrators, can't analyze all sorts of data then how do we make decisions? It becomes "guess work" and it becomes emotional instead of a logical analysis.

I would say one of the most critical issues [in data analysis] to me would be providing actual clarity on data analysis and providing and fostering a high sense of confidence in individuals in performing data analysis. What I mean is getting teachers and administrators to feel comfortable because I feel that if somebody is not comfortable doing it they won't do it. If I can help them understand the purpose and objectives of it they will be better. If not it's just not going to be done. If I reflect on my own

experiences data analysis it didn't mean anything to me if I didn't feel comfortable doing it and talking about it. It just really became for me a students' fault for doing poorly or you are a bad teacher. It was a matter of colors- red versus green. I wasn't trained and I didn't get it.

I wish I could openly say [to others] if you don't get it ask. I don't think our district administrative team feels comfortable having these data conversations. I know that having these discussions with your peers and your boss is a vulnerable position to be in, if you don't get it, or your scores are low. I also know that this process can be a very personal thing as we each look at our personal focus and then we use the data and the process as a tool for reform and as we hone our personal focus we can broaden it to the whole school. Here we can use the data to support our decisions.

Taxonomy of Sub-Categories Related to the Research Questions

Following the crafting of participant profiles, a domain analysis was conducted in order to identify those domains, subcategories, and topics and issues which are necessary in identifying the relationships and influences necessary to understanding the essence of the experience of analyzing and interpreting student assessment data, as well as the most critical issues therein. The following results are organized by research sub-categories.

Procedural Oriented Sub-Question #1

What are the domains of inquiry that facilitate the identification of the contexts or situations and which have influenced teacher and administrator experiences of analyzing and interpreting student assessment data?

In developing a taxonomy of sub-categories, the recurring domains which appear in the participants' interview and on-line reflective journal postings were first identified, and then followed by the clustering of secondary topics and issues around those domains.

The experience of analyzing and interpreting student assessment data can be understood from and characterized by the distinctive qualities which emerged in an analysis of each of the five domains: (a) motivations, (b) contextualization of learning, (c) data analysis strategies, (d) intergroup and interpersonal relations, and (e) self-actualization (Table 6). The manner in which these domains relate to each other and the topics which coalesced around them to form the sub-categories demonstrate those relationships and influences which are essential in identifying the essence of the experience, as well as the most critical issues therein.

Table 6

Taxonomy of Sub-categories

Issue-Oriented Research Sub-Question #1 What is similar or dissimilar about the factors that contribute to teacher and administrator motivation to analyze and interpret student assessment data?	
Domain	**Sub-categories**
Motivation	Using student assessment data Levels of importance Levels of comfort Perceptions of efficacy
Issue-Oriented Research Sub-Question #2 What is similar or dissimilar about how teachers and administrators learned how to analyze and interpret student assessment data?	
Domain	**Sub-categories**

Contextualization of Learning	Relevant pre-teaching experiences First data analysis experience Opportunities to learn

Issue-Oriented Research Sub-Question #3
What is similar or dissimilar about how teachers and administrators analyze, interpret, and use student assessment data?

Domain	**Sub-categories**
Data Analysis Strategies	Specific data analysis practices Measuring Successful Data Analysis

Issue-Oriented Research Sub-Question #4
What is similar or dissimilar about what teachers and administrators think about and talk about when they try to make sense of assessment data and the resulting instructional programs and practices?

Domain	**Sub-categories**
Intergroup and Interpersonal Relations	Collaboration opportunities Collaboration effectiveness "Data talk"

Issue-Oriented Research Sub-Question #5
What is similar or dissimilar about how teachers and administrators describe their experiences in analyzing and interpreting student assessment data?

Domain	**Sub-categories**
Self-actualization	Transitioning Internalizing Looking forward

Issue-Oriented Research Sub-Question #1

What is similar or dissimilar about the factors that contribute to teacher and administrator motivation to analyze and interpret student assessment data?

The domain associated with this research sub-question is *motivation*, and is characterized by the factors, which tend to motivate teachers and administrators to engage in the analysis and interpretation of student assessment data and then to use that data to design their instructional programs and practices. Within this domain four core sub-categories emerged: (a) using student assessment data, (b) levels of importance, (c) levels of comfort, and (d) perceptions of efficacy (Table 7).

Table 7

Taxonomy of Sub-categories (Domain: Motivation)

Sub-categories	Topics/Issues	Admin	Teachers
Using Student Assessment Data	Student progress monitoring	60%	70%
	Instructional decision-making	60%	50%
	Measuring student achievement	20%	80%
	Comparing Cohorts	100%	40%
	Assigning grades	0%	80%
	Measuring instruction	80%	10%
Levels of Importance	High importance- all	100%	70%
	Professional imperative	80%	20%
	Requirement of the job	40%	70%
	More important for administrators	40%	70%
	More important for teachers	100%	30%

	Low importance	0%	20%
Levels of Comfort	High comfort	80%	40%
	Comfortable deconstructing the data	60%	70%
	Comfortable discussing the data	100%	50%
	Comfortable working with administrators	40%	70%
	Comfortable working with teachers	80%	100%
	Low comfort	20%	60%
	Environment of trust	100%	60%
	Peer pressure	30%	40%
	Administrative influence	30%	50%
	Sufficiency of training	50%	10%
	Sufficiency of time	60%	20%
	Sufficiency of opportunities	60%	20%
Perceptions of efficacy	High self-efficacy	80%	60%
	High collective- efficacy	80%	50%
	Most administrators are skilled	60%	80%
	Most teaches are skilled	40%	40%
	Most grade levels are skilled	80%	80%
	Most departments are skilled	60%	30%

Note: The frequency of responses by each group is represented by a single occurrence within the data set for each participant.

Using student assessment data. From the participants' perspective, student assessment data is most appropriately used to measure academic performance against some standard of achievement, to monitor student progress, and to compare cohorts of students, classes, and grade levels all geared toward a common end- instructional decision-making. As noted by many participants, without properly analyzing student assessment data and identifying student strengths and weaknesses, educators would be ineffective in helping students learn. Reflecting upon this, one teacher commented that, "being able to analyze and interpret student assessment data has made me a better teacher . . . for without it, you cannot effectively plan your instruction to support each student in need."

When deconstructed, the highest percentage of participants (66%) identified student progress monitoring as the primary purpose for using student assessment data followed by comparing cohorts and measuring student academic achievement against the standards and benchmark assessment questions at 60%. When deconstructed even further by sub-group, 100% of administrators selected comparing cohorts as the most important reason for using student assessment data compared to 40% of teachers. On the other hand, 80% of teachers identified measuring student achievement as the most common use of student assessment data as compared to 20% of administrators. This difference may be a factor in the level of responsibility assigned to each sub-group. One administrator noted that in "going from teacher to administrator I get to see a broader perspective because of my position. As a principal I have more exposure to the data than when I was

a teacher . . . . Now I am responsible for really knowing it so I can help out my teachers." Another administrator noted that, "data is not isolated but related to so many other things. So you need to have a process. I look at it like building a house. You need a foundation analysis, then you start looking at the trimming, which we can call cohorts- classes, grade levels, and student groups." Teachers, on the other hand, may be more focused on their own class, and their students to determine their level of achievement in relation to the standards and to for, intervention groups where needed. However, one teacher did suggest that "it is not enough to do it in your class, this needs to be across the grade level or department, as well as up and down in the strand... because if we can't discuss the data and our instructional programs with our colleagues, then the numbers are useless."

Levels of importance. Concerning the level of importance assigned to the process of analyzing and interpreting student assessment data, 86% of the participants acknowledge its high importance for all educators. Interestingly, 100% of the administrators viewed the process as being of high importance, while only 70% of the teachers viewed it as such. One teacher noted that although analyzing and interpreting student assessment data is important, "it is not as important as the end product, which is the instruction."

Even though both teachers and administrators agreed that being able to effectively analyze and interpret student assessment data was of high importance to all, 100% of the administrators suggested that the process was more important for teachers than administrators, while only 70% of the teachers suggesting that the process is more important to administrators. One teacher suggested that analyzing student assessment data was much more important for administrators because “it was their responsible to

raise test scores and their jobs depended upon it." Another teacher noted that it was of more importance to administrators because "they were also responsible for training and supporting teachers." Administrators, on the other hand, tended to speak of the importance for teachers in regard to them "being on the front lines of education" where the data was more "meaningful to teachers who needed to make immediate instructional adjustments to support their students." One administrator also noted that "because the teachers know their students, the data is much more meaningful and applicable. The data in the teacher's hands has power to transform a student's learning, whereas the data in the principal's hands are often lost in nuances of analysis."

When assigning levels of importance, the participants reflected about why they thought it was important. In this, 80% of the administrators described the analysis and interpretation of student assessment data as a "professional imperative," suggesting that it "what distinguishes a great teacher, or administrator, from a good one," while 70% of the teachers described the process as a "requirement of the job." Even though teachers ascribed a level of high importance to the results of the data analysis, some suggested that the process itself was just another "hoop they were jumping through."

Levels of comfort. One aspect that often affects motivation is one's level of comfort with not only the process of analyzing and interpreting student assessment data, but also with the environment that is created wherein the process exists. Fully, 80% of administrators expressed high levels of comfort with the process and the environment of analyzing and interpreting student assessment data, while only 40% of teachers expressed the same high levels of comfort. One administrator suggested that one reason why administrators might express higher levels of comfort is " as an administrator I have to

immerse myself in it because if I don't know what I am doing and don't portray a sense of confidence the teachers will tune me out." Whereas, one teacher noted that the level of comfort was tied to an in-depth understanding of how to apply the data to instruction, noting that it is nothing more than "advanced grading." When asked to identify the specific areas of comfort, administrators and teachers had very little in common. All of the administrators expressed higher levels of comfort with discussing the data. Teachers, on the other hand, identified their highest level of comfort as working with other teachers. It is interesting to note that only 40% of the administrators felt comfortable working with other administrators compared 80% who felt comfortable working with teachers. One administrator commented that, "when all of the principals meet . . . it seems everybody is trying to outdo each other. It's horrible. I'm totally jaded by it."

Finally, both participant groups identified an emotional connection to the process and the results of the analysis as an influencing factor on their level of comfort and thus on their motivation for analyzing and interpreting student assessment data. All of the administrators expressed an emotional connection to the process, while 80% felt connection to the results. Teachers, on the other hand, expressed an emotional connection to the process at a rate of 30% and to the results at 70%. The emotional connection to the process and the results each one identifies with is also consistent with the level of importance each groups ascribes to the other.

Perceptions of efficacy. This sub-category is related to how the participant's evaluate their own skills and the skills of others to effectively analyze and interpret student assessment data. An individual's perception of their ability to assist students in their learning is often related to the perceptions of their own level of competency, as an

individual, and the level of competency of the group against the perceived level of difficulty of the specific tasks.

In all, most administrators (60%) and teachers (80%) believed that administrators were generally skilled at analyzing and interpreting student assessment data. Teachers suggested that most administrators are more skilled at analyzing and interpreting student assessment data because they have more time to analyze the data, noting that they can better schedule time to analyze the data without interruption, but also noted that some administrators only "talk-the-talk." One teacher retold a story of an administrator who was diligent about attending data analysis meetings with the teachers and providing a lot of information concerning the process of data analysis and interpretation, but when it was time to actually analyze the data, the administrator often found reasons to dismiss herself from the meeting.

However, far fewer administrators (40%) and teachers (40%) believed that teachers were skilled at data analysis. For those who did not believe others to be skilled the most common reasons given were that there was simply insufficient training, time, and opportunities to practice. Many believed that teachers tried to be skilled at data analysis, and that many possessed foundational knowledge, but that there exists a significant difference between "knowing what to do and actually doing it."

Issue-Oriented Research Sub-Question #2

What is similar or dissimilar about how teachers and administrators learned to analyze and interpret student assessment data?

The domain associated with this research sub-question is *contextualization of learning.* This domain is characterized by the participants' identification of the relevant

aspects of their learning experiences, which have significantly influenced their abilities to analyze and interpret student assessment data and then to use that data to design their instructional programs and practices. This domain is most commonly experienced as a transition, which occurs when one is able to disengage from one way of doing or knowing to a new way. What it experienced, and how it is experienced, helps the individual contextualize and ascribe meaning to phenomenon. Three sub-categories were identified in this domain: (a) relevant pre-teaching experiences, (b) first data analysis experience, and (c) opportunities to learn (Table 8).

Table 8

Taxonomy of Sub-categories (Domain: Contextualization of Learning)

Sub-categories	Topics/Issues	Admin	Teachers
Relevant pre-teaching experiences	College coursework	0%	20%
	Previous occupation	20%	30%
First data analysis experience	Positive	20%	20%
	Negative	80%	80%
	Influential	80%	80%
Opportunities to learn	On-the-job training	60%	80%
	Self-taught	80%	60%
	Formal training	60%	30%
	Request for training	100%	80%

Note: The frequency of responses by each group is represented by a single occurrence within the data set for each participant.

Relevant pre-teaching experiences. This sub-category is a reflection of the participants' belief concerning the relationship between their pre-teaching and post-employment experiences, which in many cases served as a factor in their perceived preparedness in understanding the process of data analysis in general and learning how to analyze and interpret student assessment data specifically. Both participant groups were asked to describe any relevant pre-teaching experiences with data analysis. Even though all participants noted that they had taken various math classes in college and had all participated in a teacher credentialing program, 60% did not identify any of that work as relevant experiences to analyzing and interpreting student assessment data. For those who signified having relevant pre-teaching experiences, 10% identified college coursework and 25% identified a previous occupation. Those who identified some pre-teaching experience with being able to analyze data of any kind also indicated a direct connection between those previous experiences and the process and procedures of analyzing and interpreting student assessment data. One teacher reflected on her work with analyzing stock performance and noted how it directly applied to analyzing student academic performance in terms of measuring performance, or progress, over time and how to compare that progress against other stocks in relation to different variables.

First data analysis experience. Eighty percent of both administrators and teachers identified their first data analysis experience as negative, describing feelings of "intimidation", "frustration", and "anger." One participant noted that " . . . it was not a good experience. I was a first year teacher . . . I didn't have a clue. It was a completely

negative experiences . . . It made me really hesitant to actually talk about it with other teachers." However, for many (80%), their first experience profoundly influenced their later learning and actions. One administrator reflected on this early experience and suggested that "I think that I feel that I am a good administrator because of the experiences of feeling so uncomfortable . . . being able to help a teacher is important . . . I don't want them to feel uncomfortable like I was."

Opportunities to learn. Only 60% of the administrators and 30% of the teachers stated that they had received formal training in the analysis and interpretation of student assessment data. Most participants stated that they had learned how to analyze and interpret student assessment data while on-the-job, either on their own or from other colleagues. Most of the formal training identified by the participants was related only to using the new software to compile and display student assessment data, rather than how to use and apply that data. However, when asked to identify their formal training desires, most could not identify a specific training opportunity. In fact, one teacher suggested that she wanted the "training like the administrators have had so that I could do it on my own without having to have a grade level meeting where the administrator has to walk us through the process," suggest that that there is a different training pathway for administrators and teachers. One administrator countered the request for more training by suggesting that the "most valuable training is not training at all, but rather experiences," asserting that "it's the time you spend getting to know the data and making sense of it . . . [and] . . . discussing the data with other teachers. You have to come to know the data on your own for it to have real, personal meaning."

Issue-Oriented Research Sub-Question #3

What is similar or dissimilar about how teachers and administrators analyze, interpret, and use student assessment data?

The domain associated with this research sub-question is *data analysis strategies* and is characterized by the participants' reflections on their data analysis. The two sub-categories, which emerged are from this domain analysis were: *(*a) specific data analysis practices and (b) measuring successful data analysis (Table 9).

Table 9

Taxonomy of Sub-categories (Domain: Data Analysis Strategies)

Sub-categories	Topics/Issues	Admin	Teachers
Specific data analysis practices	Scripted protocol	60%	20%
	Personal practice	40%	60%
	No protocol/practice	0%	20%
	Protocol proponent	100%	70%
	Protocol intent- but not followed	60%	90%
	Data analysis- effective	60%	50%
Measuring Successful Data Analysis	Measured by student achievement	100%	100%
	Measured by increased use of protocols	40%	0%
	Measured by increased levels of comfort	60%	70%
	Integrity of the data	30%	50%

	Depth and breadth of the data	40%	50%
	Instruction-assessment alignment	60%	80%

Note: The frequency of responses by each group is represented by a single occurrence within the data set for each participant.

Specific data analysis practices. This theme identifies the particular strategies of analysis employed or favored by the participants. Only 40% of the participants acknowledged using a scripted protocol for analyzing and interpreting student assessment data. However, 80% identified themselves as proponents of a scripted protocol. Those who stated that they used a scripted protocol also stated that they believed the practice to be effective, while only 20% of those who used personal practices believed it to be effective. The following are some of the factors, which influence data analysis strategies: technology (100%), sense of professionalism (73%), depth and breadth of the data (60%), and instruction-assessment alignment and integrity of the data (53%).

Measuring successful data analysis. Both teachers and administrators experienced successes, challenges, and even failures, which combine to develop a belief in the participants' sense of the effectiveness of their data analysis abilities and the worthiness of their efforts. When successes are frequent, the experience of a challenge or failure has the potential to produce high levels of discouragement and dissatisfaction. On the other hand, when failures or challenges occur more often, then successes become more noteworthy and serve as a reminder of the possibilities, which exist from the participants' efforts.

When asked how they measure success in analyzing and interpreting student assessment data 100% of the respondents indicated that success is measured by student academic achievement. However, when asked if there were any other indicators of success, 70% of the teachers noted that their increased comfort level in analyzing and interpreting student assessment data was a measure of success. Administrators also measured success by how it affected their teaching staff. Administrators were most concerned about the increased level of their staffs' comfort with the process of analyzing and interpreting student assessment data. But, almost as important, most of administrators suggested that the data analysis process is also measured by the amount of "unconscious, but deliberate" conversations their staff has with regard to student assessment data and the resulting instructional decision-making.

Issue-Oriented Research Sub-Question #4

What is similar or dissimilar about what teachers and administrators think about and talk about when they try to make sense of assessment data and the resulting instructional programs and practices?

The domain, which emerged from this research sub-question, is *intergroup and interpersonal relations***.** This domain is characterized by the participants' reflection on those factors, which tended to influence their relationships within and across peer groups that affect their ability to analyze and interpret student assessment data. The positive development of intergroup and interpersonal relations is one method of strengthening the individual and collective conviction that the activities in which people are engaged will be supported and will lead to some level of success. After clustering the topics, the

following four sub-categories were identified: (a) collaboration opportunities, (b) collaboration effectiveness, (c) "data talk" (Table 10).

Table 10

Taxonomy of Sub-categories (Domain: Intergroup and Interpersonal Relations)

Sub-categories	Topics/Issues	Admin	Teachers
Collaboration opportunities	Preference-all staff meetings	80%	20%
	Preference-grade level meetings	100%	90%
	Preference-departmental meetings	100%	70%
	Preference-partnerships	40%	80%
	Adequate opportunities to collaborate	60%	40%
	Aversion to collaboration with administrators	80%	50%
	Aversion to collaboration with teachers	20%	40%
Collaboration effectiveness	Highly effective-all staff meeting	60%	10%
	Highly effective-grade level meeting	80%	80%
	Highly effective-departmental	80%	80%
	Highly effective-partnerships	20%	90%
"Data talk"	Talk about the meaning of the data	70%	60%
	Talk about the application of the data to instruction	100%	40%
	“Bird-walking”	80%	100%

"Knowing vs. Doing"	60%	80%
Administrators positively influence "data talk"	40%	80%
Defensive "data talk"	60%	80%

Note: The frequency of responses by each group is represented by a single occurrence within the data set for each participant.

Collaboration opportunities. Although both administrators and teachers believe that the path to data analysis proficiency and analysis comfort is paved with frequent and significant opportunities to practice, they were split in their perception concerning the adequacy of collaboration opportunities. The majority of administrators (60%) believed that the opportunities to collaborate with and among teachers were adequate, while the majority of teachers (60%) believed that there were not adequate opportunities. Teachers suggested that in many cases, these opportunities to collaborate around student assessment data were mostly taken up with non-academic issues: school events, student behavior issues, and other quasi-administrative tasks. Administrators, on the other hand, felt that the opportunities to meet were adequate; however, they did express a desire to meet more often with other administrators as a way of verifying, "what they were doing was right."

Collaboration effectiveness. Both teachers and administrators generally characterized data analysis collaboration as "relatively effective." Both groups unanimously stated that the grade level or department level meetings were the most productive collaboration opportunities, while 100% of teachers suggested that the full

staff meetings were not an effective collaboration forum for analyzing and interpreting student assessment data.

All of the administrators and teachers expressed a desire for collaboration with teachers, while only 80% of teachers expressed a desire for collaboration with administrators. However, of the five administrators who expressed a desire to collaborate with other administrators, 80% of them also expressed some aversion to collaborating with other administrators, and suggested that their meetings with other administrators was not positive. In fact, one administrator while reflecting on her experiences suggested " . . . it's like everybody is wanting to brag about their successes and hide their failure. It's actually shameful how some of the administrators behave." Another administrator noted that these collaborative opportunities were more about "showing off" or "defending one's protocol and practices" rather than actually discussing the data and what it means in the context of student learning and teachers teaching.

Teachers, on the other hand, suggested that their collaboration opportunities with other teachers were not only effective, but, positive when the participants were prepared and followed a specific agenda or protocol. In fact, 80% of teachers identified their grade level meetings as effective, and identified those same meetings as positive. Similarly, 80% of administrators also identified grade level/department meetings as effective and positive. One teacher characterized these meeting opportunities as an effective opportunity to grow as professionals with their colleagues. Noting that in many cases they relied on their colleagues in learning the data analysis process, as well as for support in applying that data to their instructional programs and practices.

"Data talk." With regard to the discussions that take place between and across teachers and administrators, the participants characterized positive data talk as a primary contributing factor to the success of the data analysis process, while negative data talk tended to contribute to the dysfunction of the analysis process. For many administrators, the data discussions are most effective when the participants focused on "creating meaning from the data" and then applying that meaning to their instructional practices." Most administrators also enjoyed these data discussions with teachers as it gave them "insight" into the teacher's educational philosophy and a connection to what was happening in the classroom. Teachers, on the other hand, suggested that in the absence of an administrator or a strong team leader, the data discussions often begin with a discussion about the data and what it means to the instructional program, but often degrades into "bird-walking". Both suggested that when presented with low scores, or other negative student assessment data, some teachers and administrators often become defensive and resort to blaming the assessment instrument, blaming the data analysis process, and even avoiding the conversations, altogether.

Issue-Oriented Research Sub-Question #5

What is similar or dissimilar about how teachers and administrators describe their experiences in analyzing and interpreting student assessment data?

The domain of *self-actualization* emerged from this research sub-question**.** This domain is characterized by a sense of how the participants see themselves in their professional roles, their behaviors, and how they convey themselves to others as they deal with increased responsibilities of teaching students and ensuring that they perform at ever increasing levels. Within this domain the indexed topics where clustered under the

following sub-categories: (a) transitioning, (c) internalizing, and (c) looking forward (Table 11).

Table 11

Taxonomy of Sub-categories (Domain: Self-actualization)

Sub-categories	Topics/Issues	Admin	Teachers
Transitioning	Positive learning journey	80%	60%
	Negative learning journey	20%	40%
Internalizing	Emotional connection to the process	100%	30%
	Emotional connection to the results	80%	70%
Looking forward	Positive influence on instruction	80%	60%
	Positive influence on analyzing data	80%	60%
	Positive influence on designing intervention programs	80%	60%
	Increased awareness	80%	70%
	Increased use of technology	100%	100%
	Better able to assist administrators and teachers	80%	70%
	Greater sense of professionalism	100%	60%

Note: The frequency of responses by each group is represented by a single occurrence within the data set for each participant.

Transitioning. This sub-category is marked by the participants' experiences of having to let go of previous knowledge and learned behavior and adopting new ones as

they assume new roles of analyzing and interpreting student assessment data and applying that data to their teaching. In this new paradigm, teachers and administrators transition from giving information to receiving information, making sense of that information, and providing effective feedback. Most of the participants expressed a direct connection between their previous experiences to their present knowledge base, suggesting that their experiences in learning how to analyze and interpret student assessment data was a "journey" and that they are "better prepared now because they have been doing it enough, and have internalized it" and made it their own.

One teacher commented that, " . . . when I first started teaching the data was just a bunch of numbers that I used to assign a letter grade. Now that data has real meaning . . . it tells me if I need to change my instruction or regroup the students." One administrator noted that moving from teacher to administrator has had a profound effect on how he regards the importance of data analysis, both individually and collectively, as well as his particular role in the process. He stated that, "over time I have gotten a lot better at understanding the data and being able to help teachers look at the data in terms of their instructional practices. Now I can see the nuances of the data instead of just scratching the surface."

Other participants, though, have recognized that they are still in the transition process, noting that they are "beginning to learn how to analyze and interpret the data. It's a journey . . . both, in terms of learning how to analyze the data and apply it to your instructional program. But once you get to that point you have become an educator."

Internalizing. For many of the participants, the experience of analyzing and interpreting student assessment data was characterized by the process of internalizing the

their own experiences. As one participant commented, "for me, I have discovered how personal data analysis is. No amount of training will make you proficient at data analysis if you do not internalize it." The participants suggested that it was the time spent discussing the data with other teachers where you come to know the data on your own for it to have real, personal meaning." These experiences, according to some participants can be both frustrating and liberating

Another teacher commented that being able to effectively analyze and interpret student assessment data is "definitely about personal growth and learning," noting that

> It was more important to learning it myself and then applying what others have taught me through collaborative meetings or informal discussions. It's not enough to have a protocol form to follow; you have to internalize the data so when you see similar data in the future you have an idea of what it means and what to do.

Looking forward. Most of the participants reflected positively on what the future holds for them with regard to analyzing and interpreting student assessment data. Eighty percent of the participants stated that they can see themselves getting even better at analyzing the data, suggesting that because they would become more proficient at analyzing the data that they would become even better at applying the data to their instructional programs. One of the participants stated that, "I see myself having more conversations with my colleagues because I know what it is like when you don't have those conversations."

Other participants were not so positive about the future. One participant argued that, "other than the increased use of technology, I don't see much changing." These

participants often expressed feelings of despair and uncertainty about the efficacy of the school to sustain the time, training and opportunities to practice their data analysis skills. One teacher suggested that, "I will continue to get better at analyzing the data for my class. But without school wide training, more time and more guidance for data meetings... not much will change. We will still look at the data, and then go into our classrooms and do our own thing."

Procedural Oriented Sub-Question #2

What are the most critical topics or issues discussed by teachers and administrators that regularly resulted in high levels of satisfaction or dissatisfaction with the experiences of analyzing and interpreting student assessment data?

The following seven critical issues where identified, which regularly resulted in high levels of satisfaction or dissatisfaction with the experiences of analyzing and interpreting student assessment data: (a) time, (b) training, (c) opportunities to practice, (d) protocol guidance, (e) support, (f) trust, and (g) efficacy, These identified critical issues where present throughout the domains and sub-categories and help to explain how the participants conceptualized their experiences and the meaning that they ascribed to those experiences.

Critical issue #1: *Time.* According to most teachers and administrators having adequate, dedicated, and uninterrupted time is essential to effectively analyzing and interpreting student assessment data and then applying that data to their instructional programs and practices. One teacher suggested that, "without time we cannot appropriately dig deeper into the data to adjust our instruction or identify those practices which are or are not working." Administrators, on the other hand, expressed little concern

with having enough time, arguing that as a “professional imperative,” they would work in the evenings or on the weekends to analyze the data, if necessary, and many held the same expectation for their teachers. This apparent conflict in the perception of adequate time and the appropriate allocation of time caused many of the teachers in this study to become generally dissatisfied with their overall data analysis experiences.

Critical issue #2: *Training.* Most of the participants expressed a desire for training that was directly related to making sense of student assessment data within the context of formative and summative purposes and how to apply that data to their daily instruction.

With regard to training, the majority of participants claimed that they had very little formal training in analyzing and interpreting student assessment data, instead relying on the support of colleagues while learning on-the-job. In fact, before getting into teaching most did not believe that they had any relevant experiences in data analysis of any kind, when in fact all of them did have some relevant experiences either in other occupations or college coursework. Because they did not assign that meaning to their previous experiences, they were unable to transfer those experiences to the specific act of analyzing student assessment data. Those who did recognize the similarity had either assimilated or accommodated their current experiences into their already existing meaning for data analysis. Even though some participants recognized that the lack of formal training forced them to develop on their own, and as a result they felt pride and ownership over their learning they suggested that this lack of formal training also caused them to question their own abilities and more importantly to question the process- "without formal training, how do I know what I am doing is right?"

Critical issue #3: ***Opportunities to practice***. Both teachers and administrators argued that there needs to be more opportunities to practice analyzing and interpreting student assessment data, suggesting that although "it can be frustrating you have to keep trying and in time you will learn it . . . It will make sense." Through more frequent opportunities to practice, the participants felt that they would become more comfortable with the process of analyzing and interpreting student assessment data and would be able to look at the data and then instinctively know what to do next because they would be in a better position to make sense of the data. They also suggested that they would require less time to analyze and interpret the data and be able to use the software more effectively. Most of the participants also claimed that there were not enough opportunities each month to improve their skills in analyzing and interpreting student assessment data, sometimes limited by the contract, priorities, and other distracters. The participants also suggested that the focus of most data analysis meetings was with interim or summative assessment and not formative assessments, which further limited the opportunities for practice. One participant suggested that by using the same, or similar, data analysis process for formative assessments, which have fewer items and require less time, and a more direct focus, they would be able to develop the skills necessary to analyzing the larger interim and summative assessments.

Critical issue #4*: Protocol guidance.* The vast majority of participants acknowledged that they did not use a scripted data analysis protocol to analyze and interpret student assessment data, but instead relied on their own personal practices or *ad hoc* analysis. With the exception of one, the same participants also claimed that they felt their personal practices were ineffective and desired either a prescribed protocol or a

choice of scripted protocols to use. They argued that without proper training or a framework to operate within, the process was more difficult and less comfortable, and as such they or others were less willing to engage in the analysis and interpretation of student assessment data, but rather defaulted to viewing the data in terms of assigning grades or measuring achievement. The participants also believed that a scripted protocol would foster better collaboration, as the participants were able to stay focused during their discussions, and guide them in the process from start to finish.

Some of the participants also suggested that by using a scripted protocol and having more opportunities to practice, there would be a higher level of consistency in the outcome of the analysis across grade levels and departments, which would make it more efficient and effective in designing system-wide instructional programs and support. An important factor in conducting data analysis is to use the results to identify trends with which to effectively design instructional programs and practices and to identify students who are in need of additional support. The participants felt that when each grade level or department analyzed and interpreted the data differently, the school-wide collaborative discussions proved fruitless. This inconsistency made it difficult to seek assistance from other colleagues or identifying grade level or school-wide trends, which caused increased levels of frustration for many of the participants.

Critical issue #5: *Support.* As so many of the participants learned how to analyze and interpret student assessment data while on-the-job, there was a great reliance on seeking support from their colleagues. Every teacher expressed high levels of satisfaction with the support they received from their peers, and in some cases their site administration, while most of the administrators expressed low levels of peer support. In

fact, most of the administrators felt that their interactions with other administrators to be very negative and even though they desired to have more collaborative interactions, often avoided them. These administrators claimed that their most positive interactions were with teachers. On the other hand, all of the administrators reflected back on their previous experiences as teachers and determined that they would provide support to their teachers so that they would not have the same negative experiences they had.

Critical issue #6: *Trust.* Because student achievement is often linked, rightly or not, to teacher performance, the participants stated that they often felt apprehensive about discussing student assessment data. One of the administrators commented that it was "important to build a sense of trust" for the analysis to have any meaning and any affect on student learning, otherwise the staff will only "do it because they have to" and not internalize the data or even look at the data with the intention to support student learning. The tone that is set by the school and district administration and the priorities established help to foster a sense of trust, comfort, confidence, and thus satisfaction with the process of analyzing and interpreting student assessment data and with the results of that analysis. When there is a lack of trust, one teacher noted, “there will be teachers and administrators that become defensive over the results, and avoid collaborative discussions.” By building an environment of trust, teachers and administrators expressed a belief that they could “engage in open and honest conversations about the data and could take chances with their instructional programs and were free to use all aspects of the data to build their programs.” This high level of trust was also associated with higher levels of comfort and efficacy.

Critical issue #7: *Efficacy.* Efficacy refers to the belief that the actions of the

individual or the group will benefit student learning. Specifically, the level of satisfaction or dissatisfaction with the process of analyzing and interpreting student assessment data rested on the level of efficacy expressed by the participants. Efficacy is based, in large part, on the skills, comfort, and experience one has with any program or process. However, in this study, the participants generally felt high levels of efficacy in how to read the data and what to take away from it in support of greater student learning, but not all of the participants felt that they, or their peers, possessed sufficient levels of skill in deconstructing student assessment data. Additionally, a larger percentage of teachers than administrators felt low levels of comfort in discussing the data with their peers, which led to lower levels of collaborative effectiveness specifically related to instructional planning. Administrators, on the other hand, expressed high levels of skill and comfort in both deconstructing the data and discussing the data, but lower levels of skill and comfort in applying that data to their school's instructional programs and practices. Many of the administrators blamed this low level of efficacy on their lack of experiences as a teacher. One administrator noted that when he was a teacher the concept of data analysis was still foreign and that he rarely collaborated with other teachers. While another administrator commented that because he was a PE teacher he has a difficult time assisting teachers in applying the results of the analysis to their instruction.

Relationship of Domains

In studying the experiences of analyzing and interpreting student assessment data two strategies were adopted for identifying the influencing factors, which relate one sub-category to another and the domains to each other, as well as identifying the critical issues, which regularly influenced the participants' level of satisfaction or dissatisfaction

with their experiences in analyzing and interpreting student assessment data (Figure 2). First, those topics, which were similar or dissimilar between administrators and teachers were labeled and indexed under each domain. Second, a critical review of the data sets was conducted to determine the most critical issues, which regularly influenced the participants' level of satisfaction or dissatisfaction with their experiences.

These two strategies lead to the conclusion that the following seven critical issues regularly resulted in high levels of satisfaction or dissatisfaction with the experiences of analyzing and interpreting student assessment data: (a) time, (b) training, (c) support, (d) opportunities to practice, (e) protocol guidance, (f) trust, and (g) efficacy. These two strategies also demonstrate that the identified critical issues were present throughout the domains and sub-categories and help to explain how the participants conceptualized their experiences and the meaning that they ascribed to those experiences. Additionally, an association was established between each domain, which highlighted the importance of the context of analyzing and interpreting student assessment data before, during, and after the specific moment of analysis. Together, these critical issues help to explain the essence of the experience of analyzing and interpreting student assessment data and also to determine the level of satisfaction or dissatisfaction with the experiences.

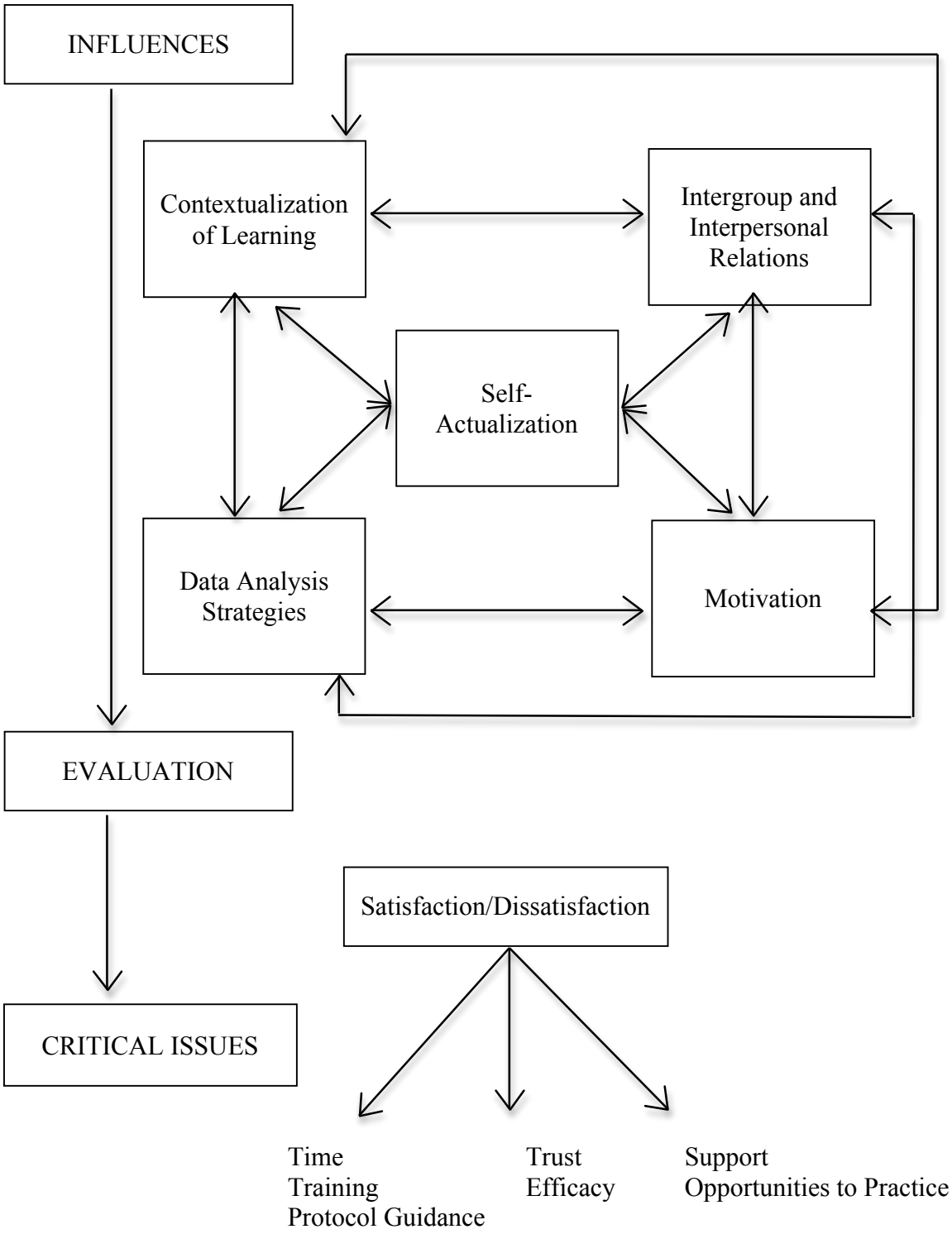

Figure 2. Relationship of Domains

Summary

A comprehensive analysis was conducted of the 60 in-depth, individual interview transcripts, 27 on-line reflective journal postings, and follow-on focus group interviews in order to reduce and classify data to make and analyze connections and relationships that are essential to understanding the experiences of teachers and administrators engaged in the analysis and interpretation of student assessment data. The participants' account of their emotions, thoughts, and behavior preceding, during, and following the analysis and interpretation of student assessment data formed the essential domains, sub-categories, issues, and relationships for the evaluation of the participants' experiences and the identification of the essence of the phenomenon. The results of the analysis were displayed through comprehensive participant profiles, as recommended by Seidman (2006), and analyzed within the identified 5 domains, as recommended by Spradley (1979), to produce a taxonomy of 15 sub-categories, which is necessary to creating a synthesis of the relationship between the sub-categories and domains and which defines the essence of the phenomenon.

CHAPTER FIVE: DISCUSSION

The purpose of this qualitative empirical phenomenological study is to examine the experience of analyzing and interpreting student assessment data from the perspective of both teachers and administrators in order to: (a) identify those aspects of the experiences which are similar or dissimilar among the two groups, (b) identify the priorities and influences which affect those experiences, and (c) identify the most critical issues which provide an in-depth understanding of the experiences and help to define the essence of the phenomenon.

Summary of the Findings

The experience of analyzing and interpreting student assessment data can be understood from two perspectives: the school administrator and the teacher, and can be characterized by the distinctive qualities which emerged in an analysis of each of the five domains: (a) motivations, (b) contextualization of learning, (c) data analysis strategies, (d) intergroup and interpersonal relations, and (e) self-actualization. The manner in which these domains relate to each other and the topics which coalesced around them to form the sub-categories demonstrate those relationships and influences which are essential in identifying the essence of the experience, as well as the most critical issues therein.

The objective of this study was to reduce the large amount of data collected through in-depth, individual interviews, on-line reflective journal postings, and follow-on focus group interviews in order to identify the essence of the phenomenon by providing an in-depth horizontal and vertical analysis of the lived experiences of analyzing and

interpreting student assessment data between teachers and administrators and all the possible variations therein. The horizontal analysis was conducted across all participants in order to identify emergent sub-categories and topics to better understand the context and complexities of the phenomenon, while a vertical analysis identified the similarities and dissimilarities between the participant groups.

In all, 60 in-depth individual interviews and 27 on-line reflective journal posting were conducted with the 15 participants and from their accounts of their emotions, thoughts, and behavior preceding, during, and following the analysis and interpretation of student assessment data emerged 86 topics, which were clustered into 15 sub-categories and 5 primary domains, which produced 7 critical issues which provided for an in-depth understanding of the essence of the phenomenon of analyzing and interpreting student assessment data. These domains, sub-categories, and topics facilitated the identification of the areas of common agreement and possible differences in the ways that teachers and administrators experienced the phenomenon of analyzing and interpreting student assessment data within and across school systems and grade spans.

Implications of the Findings Related to Prior Research

Previous research has concluded that the success of any assessment instrument or protocol is dependent upon the knowledge and skills of those educators responsible for analyzing and interpreting student assessment data and then using these data for some instructional purpose (e.g., Black & Wiliam, 1998b; Blanc et al., 2010; DuFor et al., 2009; Furtak et al., 2008; Guskey, 2007; Harlen, 2004; Hattie; 2008; Huff, 2009; Olah, 2010; Perie, et al., 2007; Primo & Furtak, 2006; Sacks, 2009: Scriven, 1967; Shen & Cooley, 2008; Stiggins, 2008). To this end, Guskey (2007) asserted that all educators

should view the assessment process as an integral part of the school's instructional program and practices in an effort to help students learn. Consistent with the research, both teachers and administrators in this study acknowledged the importance of analyzing and interpreting student assessment data. However, where teachers described the analysis and interpretation of student assessment data as a critical requirement of their job, administrators mostly characterized it as a professional imperative. Both participant groups identified the value of analyzing and interpreting student assessment data in the context of identifying student strengths and weaknesses and using the results of that analysis to provide additional academic support and instructional adaptation, where necessary.

Perie et al. (2007) identified three core purposes for the use of student assessments: (a) instructional, (b) evaluative, and (c) predictive. Consistent with this research, both teachers and administrators identified student progress monitoring as the most important purpose for assessing students. When deconstructed, though, the research revealed that teachers analyzed student assessment data more specifically as an isolated measure of achievement, or evaluation, against some set of standards or benchmark assessment questions. Administrators, on the other hand, analyzed and interpreted student assessment data within the context of comparing cohorts of students. As they reflected on their use of student assessment data, teachers noted that they had little formal training in using data for instructional, evaluative, and predictive purposes, and very little time with which to effectively analyze student assessment data, and even fewer opportunities to practice the art and science of analysis in order to appropriately monitor progress over time, which they recognized was an important element of their instructional

program. Instead, their data analysis meetings often ended with the measurement, or evaluation, of student achievement and the formation of intervention groups based on achievement on the most recent assessment.

In a study conducted by Shen and Cooley (2008) concerning school administrators' use of student assessment data, they concluded that most principals failed to tie that data into their school's instructional programs. According to Shen and Cooley (2008), Huff (2009), Jakicic (2009), and Wohlstetter (2009), school administrators need to be aware of how assessment information can be utilized in order to make decisions concerning how best to support their teaching staff, and identifying the professional development needs of their staff through the identified academic needs of the students they are working with. In fact, Shen and Cooley (2008) suggested that most of the principals had primarily used students' assessment data as an accountability measure, rather than as a tool to design and adjust their school's instructional programs and practices. However, the results of this study suggest otherwise. Although some administrators in this study suggested that measuring student achievement was important, from their perspective comparing cohorts of students (class, grade level, school-wide) was more important. By comparing cohorts of students, some administrators in this study argued that they were in a better position to identify specific grade level and school wide trends within and across school years in order to better design intervention programs and to identify which instructional strategies proved most effective and which were most ineffective.

But having a specific focus for using student assessment data for some academic or instructional end does not by itself produce high levels of motivation. The ability to

effectively analyze and interpret student assessment data, whether formative, interim, or summative, is the critical link between the reporting of interim assessment data and the modifying of instruction (DuFor et al., 2009). By critically judging student assessment data and its various strategies, educators can quickly identify whether or not learning is taking place, determine the level of learning attainment, and build a composite picture of student learning attainment across the full range of learning activities (Harlen, 2004). The results of this study suggest that more administrators than teachers expressed high levels of comfort with the process and the environment of analyzing and interpreting student assessment data, which affected their level of motivation. When asked to identify the specific areas of comfort, administrators and teachers had very little in common. For administrators, the highest levels of comfort appeared to be in discussing the data followed by the mechanics of deconstructing the data. This high level of comfort corresponds to their perception in the high levels of skill in analyzing and interpreting student assessment data. Teachers, on the other hand, felt higher levels of comfort in working with other teachers, but not in deconstructing the data or discussing the data. These feelings of comfort and discomfort also correspond to how the participants perceived their own skills. Teachers generally believed themselves to be lacking in the necessary skills to effectively analyze and interpret student assessment data, mostly claiming a result of the lack of time, training, and opportunities for practice. However, both teachers and administrators felt that administrators possessed more skill than teachers in analyzing and interpreting student assessment data.

While conducting a study of the use of benchmark assessments and data analysis protocols and practices in Philadelphia schools Olah, et al. (2010) discovered that teacher

analysis of assessment data was universally practiced. However, the extent to which this process proved effective was based on the teachers' perception of acceptable performance and they concluded that teachers' perceptions varied based on such influencing factors as their professional backgrounds and experiences, their pedagogical content knowledge, and their knowledge of their student's past performance. They concluded that if teachers inaccurately interpreted student assessment data they would, as a result, inaccurately plan for corresponding instructional adjustments (Olah et al., 2010). Very few teachers and administrators in this study admitted to using a scripted protocol. Most relied on personal practice, or *ad hoc* analysis, either by preference or default because the school had not prescribed a particular protocol. However, almost all of the participants identified themselves as proponents of a scripted protocol practice as a means of providing direction to all teachers and administrators, as well as providing for a common level consistency within and across grade levels. Those who stated that they used a scripted protocol also stated that they believed the practice to be highly effective, while many of those who used personal practices believed it to be highly ineffective, with no focus or guidance. Additionally, both teachers and administrators claimed to be proponents of a scripted protocol, but suggested that the effectiveness of any protocol or personal practice was based on each participant being properly trained in a particular protocol and then being prepared with the necessary student assessment data and following some agenda or protocol.

Recent studies have also suggested that the use of student assessments as an integral part of the educational and instructional program provides educators with the necessary information to analyze and interpret student performance data in order to adjust

their instructional programs and practices (e.g., Blanc, et al., 2010; Brown & Coughlin, 2007; Black & Wiliam, 1998a; Carless, 2007; DuFor et al., 2009; Guskey, 2007; Henderson et al., 2010; Huff, 2009; Jakicic, 2009; Olah et al., 2010; Reeves, 2007; Shen & Cooley, 2008; Silver et al., 2009; Stecker & Fuchs, 2000; Stichter et al., 2009; Stiggins, 2008; Wohlstetter, 2009). More specifically, DuFor et al. (2009) noted that when teachers have opportunities to reflect upon their practices and collaborate with other teachers, they are able to make the connections between instruction and student learning. Consistent with their findings, the teachers in this study acknowledged the value of collaborating with other teachers and administrators, suggesting that the collaboration opportunities allow them to share ideas with each other and to grow as professionals. Many teachers claimed that they often relied on their colleagues for learning how to analyze and interpret student assessment data, as well as for support in applying that data to their instructional programs and practices. Similarly, the school administrators in this study supported collaborative practices among their teaching staff.

In their 2010 multi-method study of the use of benchmark assessments in Philadelphia schools, Blanc et al. (2010) found that benchmark assessment scores significantly increased when the use of the assessments were combined with strong school leaders who promoted data-driven decision-making combined with a focus on highly effective instructional practices, targeted professional development activities, and collective responsibility for student achievement. Both teachers and administrators in this study generally characterized data analysis collaboration as relatively effective and positive and both groups stated that the grade level or department level meetings were the most productive collaboration opportunities. However, a large percentage of

administrators also favored the larger general staff meeting for disseminating information dissemination about student assessment data. One administrator noted that these larger meetings provided a level of personal comfort not felt in the smaller grade level or department meetings. He also noted that in these larger settings, the principal is in control of the information and flow of the meeting, whereas in the grade level or department meetings everybody is "on the spot" and the flow comes from the discussion rather than the specific dictates of one individual.

For many administrators, whether in a general staff meeting or smaller grade level or department settings, the data discussions were most effective when the participants focused on creating meaning from the data and then applying that meaning to their instructional practices. One administrator suggested that by sharing their experiences and practices, teachers could build on each other's individual ideas and expand their own learning in ways that they cannot do alone.

Within these collaborative opportunities the topics of discussion and the effectiveness of these discussions were the primary contributing factors to the success of the data analysis process, while negative data talk contributed to the dysfunction of the analysis process. For many administrators who participated in these grade levels or department meetings they noted that participation in these discussions with teachers gave them "insight" into the teacher's educational philosophy and a connection to what was happening in the classroom.

Consistent with the research conducted by Huff (2009), who concluded that principals are instrumental in fostering an environment which allows teachers to share their personal experiences in the analysis and interpretation of student assessment data,

many of the administrators and teachers recognized that in the absence of an administrator or a strong teacher team leader, the meetings often began with a discussion about the data and what it means to the instructional program, but often degraded into "bird-walking". Both suggested that when presented with low scores, or other negative student assessment data, some teachers and administrators often become defensive and resort to blaming the assessment instrument, blaming the data analysis process, and even avoiding the conversations, altogether. Many of the teachers in this study admitted that when administrators were present these meetings often proved more focused and effective.

Theoretical Implications of the Study

The constructivist learning theory holds that people construct knowledge and meaning through their lived experiences and that these meanings are continually updated through a process of accommodation and/or assimilation of new experiences (e.g. Applefield et al., 2001; Bruner, 1960; Dewey, 1916; Piaget, 1950/2001, 1952; von Glasersfeld, 1995; Vygotsky, 1962, 1978). For many of this study's participants, the context with which their learning experiences are measured began first with their pre-teaching data analysis experiences, moving into their first teaching data analysis experience, and then culminating with a reflection on how they learned to analyze and interpret student assessment data. Many of the participants reflected on their pre-teaching experiences in analyzing data of various sources and suggested that those experiences had little to no relevance to the specific analysis and interpretation of student assessment data. In many cases, this perception served as a factor in their perceived preparedness in

understanding of data analysis in general, and learning how to analyze and interpret student assessment data specifically.

Von Glasersfeld (1995) suggested that the process by which people arrive at an answer is far more important than the answer itself. This would suggest that as people construct their own meaning and reflect upon their own experiences, past and present, they discover new principles, concepts and facts for themselves that they can apply to future situations. Both administrators and teachers identified their first data analysis experience as generally negative and generating feelings of intimidation, anger, and frustration. This induction experience made some participants hesitant to fully participate in the data analysis process. Some of the administrators suggested, however, that these early experiences caused them to empathize with the conditions of their staff and endeavor to create a positive data analysis induction program and a positive data analysis environment for all teachers so that they feel comfortable and confident in the data analysis process.

For many of the participants, especially teachers, there is still a gap between the perception of their skills and knowledge in the process of data analysis and what they believe they should know. Vygotsky (1978) termed this as the zone of proximal development (ZPD), which refers to the gap that exists between what is supposed to be learned and what is actually learned. This disparity between how the participants learned to analyze and interpret student assessment data and their perception of what they learned leads to this gap, either real or perceived. Most of the participants stated that they had learned how to analyze and interpret student assessment data while on-the-job, either on their own or from other colleagues. Very few claimed to have had any formal

professional development in this area. As such, many felt that because they had very little formal training that they lacked the necessary skills to understand the nuances of analyzing student assessment data, which made it difficult in terms of skill or comfort for them to effectively deconstruct the data, discuss the data with their colleagues, and applying the data to their instructional programs and practices. This lack of formal training and follow-up monitoring left many participants wondering if what they were doing was correct and most effective.

In the process of constructing meaning Applefield et al. (2001) suggested that people must actively strive to make sense of their new experiences and then apply those experiences to what they already know or believe. Learning, according to Applefield et al. (2001), then, is more about the construction of knowledge rather than the transmission of knowledge. The construction of meaning, then, is a continuous and active process and is influenced to a large extent by our existing knowledge base (Gunstone, 2000; Packer & Goicoechea, 2000; Phillips, 2000). Consistent with this theory, teachers in this study commented that being able to effectively analyze and interpret student assessment data was a journey of personal growth and learning, noting that it was important to learn the process of analyzing and interpreting student assessment data on their own, which allowed them to internalize the learning and apply it to their previous knowledge. Many of the participants noted that it was not enough to have a protocol form to follow, but suggested that the data needs to be internalized so when similar data is seen in the future they have an idea of what it means and what to do.

For many of the participants, the phenomenon of analyzing and interpreting student assessment data was characterized by a process of internalizing their experiences

as they transition from giving information to receiving information, making sense of information, and providing feedback and envisioning where their experiences will take them in the future. Most of the participants expressed a direct connection between their previous experiences and their present knowledge base, suggesting that their experiences in learning how to analyze and interpret student assessment data was a "journey" and that they are better prepared now because they have "been doing it enough, and have internalized it" and made it their own. One administrator noted that moving from teacher to administrator has had a profound effect on how he regards the importance of data analysis, both individually and collectively, as well as his particular role in the process. Other participants, though, have recognized that they are still in the transition process.

Most of the participants in this study reflected positively on what the future holds for them with regard to analyzing and interpreting student assessment data, with most stating that they can see themselves getting even better at analyzing the data and suggesting that because they would be more proficient at analyzing the data that they would become even more proficient at applying the data to their instructional programs. Other participants, though, were not so positive about the future. These participants often expressed feelings of despair and uncertainty about the efficacy of the school to sustain the time, training and opportunities to practice their data analysis skills.

Implications for Educational Practice

The implications for school leaders, both teacher leaders and administrators, are based on this study's findings with regard to the emergent domains and identified critical issues, which were present throughout the participant data sets and help to explain how

the participants conceptualized their experiences and the meanings that they ascribed to those experiences.

This study's findings would suggest that school leaders should consider the whole experience of analyzing and interpreting student assessment data before, during, and after the moment of analysis. Specifically, school leaders need to ensure that adequate, dedicated time is provided to properly and effectively analyze and interpret student assessment data. School leaders also need to consider how much time is required for each phase of the analysis, interpretation, and application phases of this process and then ensure that this time is allocated. This amount of time is not universal, however, but may be unique to a particular teacher, grade level, or department, and school and should be based on the level of skill and comfort that is present. Both school and district leaders should also consider whether or not the current amount of time devoted to data analysis is consistent with the identified protocols or practices, and whether or not those protocols or practices are even effective.

The results of this study also suggest that school leaders need to provide adequate and sustained formal and informal training opportunities. School leaders need to be aware that how and what a person learns determines how they will view their own level of skill and comfort. Most of the participants expressed a desire for more training that was directly related to making sense of student assessment data within the context of formative and summative purposes and how to apply that data to their daily instruction.

With regard to training, the majority of participants claimed that they had very little formal training in analyzing and interpreting student assessment data, instead relying on the support of colleagues while learning on-the-job. In fact, before getting into

education most did not believe that they had any relevant experiences in data analysis of any kind, when in fact all of them did have some relevant experiences either in other occupations or college coursework. Because they did not assign that meaning to their previous experiences, they were unable to transfer those experiences to the specific act of analyzing student assessment data. Those who did recognize the similarity had either assimilated or accommodated their current experiences into their already existing meaning for data analysis. Even though some participants recognized that the lack of formal training forced them to develop on their own, and as a result they felt pride and ownership over their learning they suggested that this lack of formal training also caused them to question their own abilities and more importantly to question the process- "without formal training, how do I know what I am doing is right?"

Additionally, the results of this study identified a need for school leaders to be aware that the more opportunities educators have to practice analyzing and interpreting student assessment data the more they will increase their personal and collective proficiency over time. As such, school leaders should provide frequent and meaningful opportunities to practice. By increasing the opportunities to practice analyzing and interpreting student assessment data educators will be able to better understand the nuances of the data analysis and interpretation process and the results.

Both teachers and administrators argued that there needs to be more opportunities to practice analyzing and interpreting student assessment data, suggesting that although "it can be frustrating you have to keep trying and in time you will learn it . . . It will make sense." Through more frequent opportunities to practice, the participants felt that they would become more comfortable with the process of analyzing and interpreting student

assessment data and would be able to look at the data and then instinctively know what to do next because they would be in a better position to make sense of the data. They also suggested that they would require less time to analyze and interpret the data and be able to use the software more effectively. Most of the participants also claimed that there were not enough opportunities each month to improve their skills in analyzing and interpreting student assessment data, sometimes limited by the contract, priorities, and other distracters. The participants also suggested that the focus of most data analysis meetings was with interim or summative assessment and not formative assessments, which further limited the opportunities for practice. One participant even suggested that by using the same, or similar, data analysis process for formative assessments, which have fewer items and require less time, and a more direct focus, they would be able to develop the skills necessary to analyzing the larger interim and summative assessments.

Although this research did not study the experiences of teacher and administrator use of a specific data analysis protocol or practice, the results do suggest that participants desired either a prescribed protocol or a choice of scripted protocols to use. The vast majority of participants acknowledged that they did not use a scripted data analysis protocol to analyze and interpret student assessment data, but instead relied on their own personal practices or *ad hoc* analysis. With the exception of one, the same participants also claimed that they felt their personal practices were ineffective and desired either a prescribed protocol or a choice of scripted protocols to use. They argued that without proper training or a framework to operate within, the process was more difficult and less comfortable, and as such, they or others, were less willing to engage in the analysis and interpretation of student assessment data, but rather defaulted to viewing the data in terms

of assigning grades or measuring achievement. The participants also believed that a scripted protocol would foster better collaboration, as the participants were able to stay focused during their discussions, and guide them in the process from start to finish.

Some of the participants also suggested that by using a scripted protocol and having more opportunities to practice, there would be a higher level of consistency in the outcome of the analysis across grade levels and departments, which would make it more efficient and effective in designing system-wide instructional programs and support. An important factor in conducting data analysis is to use the results to identify trends with which to effectively design instructional programs and practices and to identify students who are in need of additional support. The participants felt that when each grade level or department analyzed and interpreted the data differently, the school-wide collaborative discussions proved fruitless. This inconsistency made it difficult to seek assistance from other colleagues or identifying grade level or school-wide trends, which caused increased levels of frustration for many of the participants.

Another implication for school leaders involves ensuring a school-wide system of support for both new and veteran staff. As so many of the participants learned how to analyze and interpret student assessment data while on-the-job, there was a great reliance on seeking informal support from their colleagues. Teacher expressed high levels of satisfaction with the support they received from their peers, and in some cases their site administration, while most of the administrators expressed low levels of peer support. In fact, most of the administrators felt that their interactions with other administrators to be very negative and even though they desired to have more collaborative interactions, they often avoided them. These administrators claimed that their most positive interactions

were with teachers. All of the administrators also reflected back on their previous experiences as teachers and determined that they would provide support to their teachers so that they would not have the same negative experiences they had.

Together with ensuring a school-wide system of support for both new and veteran staff, the results of this study suggests that school leaders need to build and nurture an environment of trust for data analysis. Because student achievement is often linked, rightly or not, to teacher performance, the participants stated that they often felt apprehensive about discussing student assessment data. One of the administrators commented that it was "important to build a sense of trust" for the analysis to have any meaning and any affect on student learning, otherwise the staff will only "do it because they have to" and not internalize the data or even look at the data with the intention to support student learning. The tone that is set by the school and district administration and the priorities established help to foster a sense of trust, comfort, confidence, and thus satisfaction with the process of analyzing and interpreting student assessment data and with the results of that analysis. When there is a lack of trust, one teacher noted, “there will be teachers and administrators that become defensive over the results, and avoid collaborative discussions.” By building an environment of trust, teachers and administrators expressed a belief that they could “engage in open and honest conversations about the data and could take chances with their instructional programs and were free to use all aspects of the data to build their programs.” This high level of trust was also associated with higher levels of comfort and efficacy.

Finally, the results of this study suggest that school leaders need to build and foster an environment of efficacy. Efficacy refers to the belief that the actions of the

individual or the group will benefit student learning. Specifically, the level of satisfaction or dissatisfaction with the process of analyzing and interpreting student assessment data rested on the level of efficacy expressed by the participants. However, in this study, the participants generally felt high levels of efficacy in how to read the data and what to take away from it in support of greater student learning. Efficacy is based, in large part, on the skills, comfort, and experience one has with any program or process. Not all of the participants felt that they, or their peers, possessed sufficient levels of skill in deconstructing student assessment data. However, a larger percentage of teachers than administrators felt low levels of comfort in discussing the data with their peers, which led to lower levels of collaborative effectiveness specifically related to instructional planning. Administrators, on the other hand, expressed high levels of skill and comfort in both deconstructing the data and discussing the data, but lower levels of skill and comfort in applying that data to their school's instructional programs and practices. Many of the administrators blamed this low level of efficacy on their lack of experiences as a teacher. One administrator noted that when he was a teacher the concept of data analysis was still foreign and that he rarely collaborated with other teachers. While another administrator commented that because he was a PE teacher he has had a difficult time assisting teachers in applying the results of the analysis to their instruction.

Limitations of the Study

Although this study has limitations the results may still be generalized across the teaching profession, to other grade levels, or to other school administrators because of the focus of the design of the research study to examine the differences and similarities across these grade levels. Additionally, through thick, rich descriptions created through

the participant profiles and the cross-case comparisons, readers of this study will be able to appropriately determine the level of generalizability and transferability.

Specifically, this study was limited to participants from two southern California school districts. One district is characterized as a mid-sized, sub-urban/urban school district, while the second district is characterized as a mid-sized, rural district. The selection of these two school districts was based on the common practices of: (a) administering regularly scheduled summative assessments, (b) regularly scheduled data analysis meeting, and (c) use of commercially produced data storage and analysis software. These two districts were also selected for there proximity to each other as well as to the researcher. By selecting two relatively close school districts I was be able to schedule the three in-depth individual interviews and follow-on focus group interviews.

The participants in this study were also self-selecting, which limited the number available for final selection for participation in the study. In all, ninety-five teachers and sixteen administrators completed the on-line potential participant survey, and only twenty-three teachers and eleven administrators volunteered for the study. Although purposeful sampling with a maximum variation approach was used at the outset of the study, there was limited control for such attributes as race/ethnicity, gender, length of service, training, or motivation for participation in the study due to self-selection.

Finally, this study was purposely limited to interviewing teachers from grades two through eleven and administrators from elementary, middle, and high schools. The purpose was to define the participation to teachers and administrators of students who participate in the California Standards Test (CST) process.

Recommendations for Further Research

Based on the findings from this study, as well as the identified limitations, there are potentially several areas to explore in further research studies. First, this study could be replicated using larger, urban school districts. This study was limited to only two mid-sized school districts in sub-urban and rural communities. Larger urban school districts have unique characteristics and a more comprehensive study using these districts might produce different results. Second, a study examining the correlation between teachers perceived data analysis skills and student achievement level could provide more insight into how teachers use the data to adjust their instructional programs and practices and the affects of those adjustments on student learning. This study only examined the experience of analyzing student assessment data and the experiences of using that data to adjust their instruction, but not the impact of those instructional decisions. Finally, this studied identified a preference among most participants for a scripted protocol for analyzing student assessment data. A study examining the effectiveness of various specified protocols would benefit the educational community as the pressures to increase test scores drive many instructional decisions.

Summary

This study sought to explore what was similar or dissimilar in the experiences of analyzing and interpreting student assessment data from the perspective of both teachers and administrators. Using the constructivist and transformation learning theories as a foundation for this study, data was collected and analyzed to determine not only the unique experiences each participant recalled, as well as those which were similar or dissimilar between teachers and administrators, but also the meaning that they ascribed to

those experiences, which was represented through the emergent domains, sub-categories, and topics.

Through the thick, rich description of the participants' experiences through the crafting of participant profiles, this research revealed that the experiences of teachers and administrators can be characterized and described through the domains of: (a) motivations, (b) contextualization of learning, (c) data analysis strategies, (d) intergroup and interpersonal relations, and (e) self-actualization. Furthermore, this study identified seven critical issues which regularly resulted in high levels of satisfaction or dissatisfaction with the experiences of analyzing and interpreting student assessment data: (a) time, (b) training, (c) opportunities to practice, (d) protocol guidance, (e) support, (f) trust, and (g) efficacy, and which should be considered by school and district leaders.

Finally, this study had an impact on me, as a professional, as I reflected on the participants' experiences and considered my own experiences with analyzing and assessing students assessment data within the context of the research questions and interview questions, and the participants, who were asked to recall and reflect on their own experiences and to make meaning of those experiences in totality for the purpose of this study. This study, then, loops back into the constructivist and transformation learning theories, where the participants and I reflected back on those experiences which we readily remembered, as well as those that we had formally relegated to the back of our memories, and recalled and assigned meaning to those experiences.

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APPENDICES

Appendix A- Invitation to Participate in a Doctoral Research Study

Subject: Participation in a Doctoral Research Study

Greetings,

You are invited to participate in a research study of the experiences teachers and administrators encounter while analyzing and interpreting student assessment data to design and adjust their instructional programs and practices. You were selected to receive an invitation to participate in this study because your school: 1) regularly administers formative, interim, and/or summative assessments, 2) regularly schedules data analysis meetings, and 4) uses a standard student achievement data storage program. I am conducting this study as part of the doctoral program in Educational Leadership at Liberty University.

This study will involve at least ten teachers and five administrators from two school districts. The participants will include multiple subject teachers in grades two through six, mathematics and language arts teachers in grades seven through eleven, and site administrators from elementary school, middle school, and high school who have experience with analyzing and interpreting student assessment data. These grade levels have been selected as because of their participants in the annual administration of the California Standards Test (CST).

To identify the range of experiences and characteristics of the participant pool and to identify a participant pool I am inviting you to complete an anonymous on-line survey.

You may participate in the survey without committing yourself to participating further in the study. Unless you decide to volunteer to directly participate in the study and provide your contact information, your identity will remain anonymous. Because this survey is completely anonymous I will not have access to any identifying participant information unless you specifically provide that information. To achieve maximum variation, participants will be selected based on the following characteristics: (a) current grade level assignment, (b) teaching experience, (c) education level, (d) gender, and (e) ethnicity.

The survey can be found at:
https://www.surveymonkey.com/s/Doctoral_Research_Potential_Participant_Survey

For your review I have attached a copy of the approval from your district office and the *Participant Informed Consent* form. If you have any questions about this survey or the study itself, please do not hesitate to contact me at mwross@liberty.edu.

Thank you for taking the time to consider this invitation.

Matthew W. Ross

Appendix B- Potential Participant Survey

Thank you for taking the time to complete this survey. Please tell me about yourself.

Part I: Background

Position: Teacher or Administrator

Grade Level (For teachers only): 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

Grade Span (For administrators only): Elementary, Middle School, High School

Subjects Taught (For secondary teachers only): Language Arts, Mathematics, History/ Social Science, Science, Foreign Language, Physical Education, Other

Total Years of Education Experience: Less than (10) years, Between (10) and (20) years, More than (20) years

Gender: Male, Female

Ethnicity: Black, Hispanic, White, Asian, Other

Highest Level of Education: Bachelor, Master, Education Specialist, Doctorate

Part II. Attitudinal

Please respond to each prompt (1- Disagree, 2- Somewhat Disagree, 3- Somewhat Agree, 4- Agree)

Strategies

- I regularly use formative, interim, and summative student assessment data to design and adjust my educational and instructional programs and practices.
- I regularly collaborate with other educators in the analysis and interpretation of student assessment data.

- I regularly collaborate with other educators in the design and or adjustments of instructional programs and practices as a result of student assessment.
- I use a fixed data analysis and interpretation protocol.
- I experiment with different data analysis and interpretation protocols.

States of Emotion

- I feel comfortable analyzing and interpreting student assessment data.
- I feel comfortable collaborating with other educators in the analysis and interpretation of student assessment data.
- I feel confident that the assessment feedback I provide to students helps them in their learning.
- I feel confident that the results of my analysis and interpretation of student assessment data is valued by other educators.
- I feel high levels of anxiety when analyzing and interpreting student assessment data.

Conditions/Constraints

- I have received sufficient training in how to accurately analyze and interpret student assessment data.
- I have sufficient time and resources to analyze and interpret student assessment data.
- My school or district provides adequate opportunities for educators to share the results of our analysis and interpretation of student assessment data.
- I am allowed to follow a specific data analysis and interpretation protocol or system at my school or district.

- The school or district assessment instruments and the classroom instructional practices provide adequate information with which to effectively analyze and interpret student assessment data.

Part III: Narrative

- When it comes to the analysis and interpretation of student assessment data, have there been any significant experiences that you can remember? If so, please describe. What feelings were generated by the experience?

If you willing to participate in a study exploring the experiences teachers and administrators encounter while analyzing and interpreting student assessment data and while designing and adjusting their instructional programs and practices please provide your name, phone number, and email address.

Appendix C- Participant Informed Consent

PARTICIPANT INFORMED CONSENT

A PHENOMENOLOGICAL STUDY OF TEACHER AND ADMINISTRATOR EXPERIENCES IN THE ANALYSIS AND INTERPRETATION OF STUDENT ASSESSMENT DATA

Matthew W. Ross, Doctoral Candidate
Liberty University
School of Education

You are invited to participate in a research study of the experiences teachers and administrators face while analyzing and interpreting student assessment data to design and adjust their instructional programs and practices. You were selected to participate in this study because your school regularly administers formative, interim, and/or summative assessments and you had indicated that you have experience with analyzing and interpreting student assessment data. Please read this form in its entirety before agreeing to participate in this study.

This study is being conducted by: Matthew W. Ross, Doctoral Candidate, Liberty University.

Background Information:
The purpose of this study is to examine teacher and administrator experiences in the use of student assessment data to design and adjust their instructional programs and practices. Up to ten teachers and five administrators from your district will participate in this study.

Procedures:
If you agree to participate in this study, you will be asked to participate over an eighteen week period in three scheduled individual interviews, two scheduled focus group interviews, and on-line reflective journaling and postings. Both the individual and focus-group interviews can be expected to last from thirty minutes to one hour depending on the level or participation in each interview, prior participant preparation, and an follow on discussions resulting from the participant responses. For the individual and focus group interview you will be given a copy of the open-ended interview questions prior to the scheduled interview. Additionally, with your permission, each interview may be audio taped for the purpose of post-interview transcription. You will also have the opportunity to review the transcription of each interview as well as the findings to ensure its accuracy. The results of this study will be made available upon request.

Risks and Benefits of Participation in the Study:
Risks. There are no known risks associated with this study.

Benefits. By participating in this study you will add to the body of knowledge concerning the experiences educators face while analyzing and interpreting student assessment data to reveal the challenges and successes that they may face, thereby providing a framework for other educators who may be experiencing the same. Also, by examining how different educators construct meaning of assessment data provides much needed insight into how they perceive the level of student achievement and the effectiveness of their instructional programs and practice, which will influence how they design and adjust their instructional programs and practices in the future.

Confidentiality:
All records regarding this study will be kept confidential and securely stored in the researcher's home office for three years. Only the researcher and the three members of the dissertation committee from Liberty University will have access to these records. Identifiable information such as participant names and school sites will not be included in any sort of published report. Instead, pseudonyms will be used throughout the study in an effort to protect your privacy. However, if you agree to participate in the focus group interviews the researcher cannot ensure that other participants in the group will maintain the same privacy and confidentiality.

Additionally, during the course of interviewing and reviewing the on-line reflective journal postings I may become privy to information that triggers the mandatory reporting requirements for child abuse, child neglect, elder abuse or intent to harm self or others.

Voluntary Nature of the Study:
Participation in this study is voluntary. Your decision to participate or decline to participate will not affect your current or future relations with Liberty University. If you decide to participate, you are free to decline to respond to any question or prompt and you may withdraw from the study at any time without affecting this relationship.

Contacts and Questions:
The researcher conducting this study is: Matthew Ross, under the supervision of Dr. Kenneth D. Gossett (Dissertation Committee Chair), Liberty University (kdgossett@liberty.edu).

If you have any questions you are encouraged to contact me by phone (661) 952-1217 or by email at mwross@liberty.edu. If you have any other questions or concerns regarding this study and would like to talk to someone other than the researcher(s), you are encouraged to contact the Institutional Review Board, Dr. Fernando Garzon, Chair, 1971 University Blvd, Suite 1582, Lynchburg, VA 24502 or email at irb@liberty.edu.
You will be provided a copy of this information to keep for your records.

Statement of Consent:
I have read and understood the above information. I have had the opportunity to ask questions and have received answers. I consent to participate in the study.

Please check the appropriate box:
____I consent to have my individual interviews and focus groups audio recorded
____I do not consent to have my individual interviews and focus groups audio recorded

Signature of Participant:_____ Date: _____

Signature of Researcher:_____ Date: _____

Appendix D- Tier I In-depth Individual Interview Protocol Form

Name		Pseudonym	
District		School	
Position		Grade	
Years		Highest Education	
Gender		Ethnicity	
Date		Location	
Time		Duration	

Purpose

The purpose of this first interview is to focus on putting your experiences into context by eliciting as much information about them as possible in regard to your previous experiences with analyzing and interpreting student assessment data and designing and adjusting your instructional programs and practices as a result of that process.

- Introduction
- Review purpose of the study.
- Review the participant's demographic data.

Required Notifications

- In order to protect the privacy of your past and present students and colleagues, please do not use actual names, but rather use pseudonyms.

- During the course of interviewing I may become privy to information that triggers the mandatory reporting requirements for child abuse, child neglect, elder abuse or intent to harm self or others.
- As a voluntary participant you have the right to refuse to answer any question and/or to withdraw from the study at any time.

Primary Questions and Possible Exploratory Questions

1. Please tell me a little about yourself.
2. How long have you been teaching?
3. How long have you been a school administrator?
4. How long have you taught at this school?
5. How long have you taught in this district?
6. What grade or subject do you currently teach?
7. What other grades or subjects have you taught?
8. Please reflect on and recall a transformative experience in the analysis and interpretation of student assessment data and write a direct account of a personal experience as you lived through it. Focus on a particular example or incident of the object of experience: describe specific events, an adventure, a happening, a particular experience and try to focus on an example of the experience which stands out for its vividness, or as it was the first time. Please avoid as much as possible causal explanations, generalizations, or abstract interpretations.
9. Please tell me a little bit more about you're most transformative experience with analyzing and interpreting student assessment data.

10. What do you use student assessment data for?
11. Do you believe that it is important for teachers and/or administrators to be skilled at analyzing and interpreting student assessment data?
12. When you first started teaching did you have any experiences with analyzing and interpreting any type of data?
13. How did you learn how to analyze and interpret student assessment data?
14. How comfortable are you with analyzing and interpreting student assessment data?
15. What part of the data analysis and interpretation process are you: good at, bad at, like the most, and/or dislike the most?
16. Do you believe that teachers and/or administrators are generally skilled at data analysis and interpretation?
17. Do you believe that others value your ability to analyze and interpret student assessment data?
18. How do you measure success or failure with regard to your analysis and interpretation of student assessment data?

Appendix E- Tier II In-depth Individual Interview Protocol Form

Name		Pseudonym	
District		School	
Position		Grade	
Years		Highest Education	
Gender		Ethnicity	
Date		Location	
Time		Duration	

Purpose

The purpose of this second interview is to concentrate on the concrete details of your present lived experiences regarding the process of analyzing and interpreting student assessment data and designing and adjusting your instructional programs and practices as a result of that process.

Required Notifications

- In order to protect the privacy of your past and present students and colleagues, please do not use actual names, but rather use pseudonyms.
- During the course of interviewing I may become privy to information that triggers the mandatory reporting requirements for child abuse, child neglect, elder abuse or intent to harm self or others.

- As a voluntary participant you have the right to refuse to answer any question and/or to withdraw from the study at any time.

Primary Questions and Possible Exploratory Questions

1. Please describe for me the first time you sat down to analyze and interpret student assessment data.
    a. How did you feel?
    b. Did you feel that you were prepared to analyze and interpret the data?
    c. Did you feel that you were alone in the process?
    d. What difficulties, if any, did you experience during your first data analysis meeting?
    e. How did the experience affect you?
    f. What thoughts stood out for you?
2. Please describe for me the training you have received.
    a. Do you believe that you have received sufficient training in how to accurately analyze and interpret student assessment data?
    b. What was the most effective training?
    c. What type of training would you like to have?
3. Please describe for me your data analysis and interpretation protocol or process.
    a. Is there anything unique, similar, or different concerning the analysis and interpretation of student assessment data when it is formative, interim, or summative?

b. Do you believe you have sufficient time and resources to analyze and interpret student assessment data?

c. How much time is needed to effectively and efficiently analyze and interpret student assessment data?

d. What resources do you believe you need to effectively and efficiently analyze and interpret student assessment data?

4. Please describe for me some of the successes or challenges have you encountered while analyzing and interpreting student assessment data.

   a. What have you learned from these experiences?

   b. How have these experiences affected you?

5. Please describe for me some of the positive and/or negative influences that affect the way you analyze and interpret student assessment data.

6. Please describe for me the opportunities you have to analyze and interpret student assessment data with other educators.

   a. How effective were/are these opportunities?

   b. What do you personally get out of these sharing opportunities?

   c. Are the experiences the same when it is with teachers as it is when it is with administrators?

   d. What difficulties or successes, if any, have you experienced from these opportunities?

   e. How have these experiences affected you?

7. Please describe for me how you and/or your colleagues use the results of the analysis and interpretation of student assessment data to design and/or adjust your educational and/or instructional practices.
    a. How did you feel about the process by which the decision was reached?
8. Please describe for me what you talk about when you analyze and interpret student assessment data with other teachers and/or administrators.
    a. Who talks the most?
    b. Who talks the least?
    c. How do the participants respond to each other? How have these experiences affected you?
    d. Do you talk about the same things when it's with teachers as with administrators?
9. Please describe for me the type of feedback you are able to provide to students as a result of your analysis and interpretation of student assessment data.
    a. Do you feel confident that the feedback you provided to students helped them in their learning?
10. Please describe for me the most critical or important issues to you with regard to analyzing and interpreting student assessment data.

Appendix F- Tier III In-depth Individual Interview Protocol Form

Name		Pseudonym	
District		School	
Position		Grade	
Years		Highest Education	
Gender		Ethnicity	
Date		Location	
Time		Duration	

Purpose

The purpose of this third interview is to focus on the meaning that you have created as a result of your past and present experiences in analyzing and interpreting student assessment data and in designing and adjusting your instructional programs and practices.

Required Notifications

- In order to protect the privacy of your past and present students and colleagues, please do not use actual names, but rather use pseudonyms.
- During the course of interviewing I may become privy to information that triggers the mandatory reporting requirements for child abuse, child neglect, elder abuse or intent to harm self or others.
- As a voluntary participant you have the right to refuse to answer any question and/or to withdraw from the study at any time.

Primary Questions and Possible Exploratory Questions

1. What has changed in the how you analyze and interpret student assessment data since the first time you did it?
2. Given what you have said in earlier interviews, how do you now understand the phenomenon of analyzing and interpreting student assessment data? What sense do you make of your experiences?
3. Given what you have constructed in these interviews, where do you see yourself in the future with regard to your ability to analyze and interpret student assessment data and then using that data to design and adjust your educational and instructional programs and practices?
4. What do you wish you could say to other teachers and administrators with regard to the analysis and interpretation of student assessment data?
5. If you had to come up with one idiomatic statement to describe your experiences in analyzing and interpreting student assessment data, what would it be and why?

Appendix G- On-line Reflective Journal Posting Protocol

Purpose

The purpose of the online reflection journal and discussion board posting is to provide assist you in recording your thoughts in preparation for the interviews and to capture your feelings and thoughts, as they are experienced. Please reflect on your most recent experience while analyzing and interpreting student assessment data. As you reflect on an experience, please consider the following:

- What happened?
- What were you aware of?
- What were you thinking?
- What were you feeling?

Required Notifications

- In order to protect the privacy of your past and present students and colleagues, please do not use actual names, but rather use pseudonyms.
- During the course of reviewing your postings I may become privy to information that triggers the mandatory reporting requirements for child abuse, child neglect, elder abuse or intent to harm self or others.
- As a voluntary participant you have the right to refuse to answer any question and/or to withdraw from the study at any time.

Appendix H- Follow-on Focus Group Interview Protocol

Purpose

The purpose of the follow-on focus group interviews is to provide an opportunity for all participants to validate the results of the domain analysis, specifically with regard to the identification of the primary domain, the primary list of topics and issues, and the emergent critical issues. Additionally, this follow-on focus group interview brings together potentially different perspectives of teachers and administrators from each grade level in order to produce a discussion of other aspects of the phenomenon under study, which was not originally considered during the interviews or on-line reflective journal postings.

Required Notifications

- In order to protect the privacy of your past and present students and colleagues, please do not use actual names, but rather use pseudonyms. Additionally, please refrain from discussing the conversations that take place today with others outside of this group.
- During the course of this interview I may become privy to information that triggers the mandatory reporting requirements for child abuse, child neglect, elder abuse or intent to harm self or others.
- As a voluntary participant you have the right to refuse to answer any question and/or to withdraw from the study at any time.

Prompt

Please reflect on your whole experience of analyzing and interpreting student assessment data. As you reflect on an experience, please consider the following:

- Do the domains, topics and issues, and critical issues represent those, which are most important to you? If not, please explain.
- Are there any other aspects of the phenomenon of analyzing and interpreting student assessment data that were not explored during the interviews or on-line reflective journal postings that you would like to share?
- Based on what you have reconstructed in your interviews and on-line reflective journal postings and what you have read today, what recommendations would you make to school leaders regarding the analysis and interpretation of student assessment data?